Chapter 23 – The Rest

Julie Smith, www.whatwouldjuliedo.blog

What Else is There?, Textiles, What's Left? Do I Really Need This? Spreading the Carnage, References

What Else Is There?

There are three additional basic categories of our consumption that will round out our total carbon footprint in the U.S.:

1. Textiles at 123 mmt of CO_2e per year.
2. The remaining consumption of goods made in U.S. of 635 mmt CO_2e per year.
3. The goods that are imported into the U.S. and exported annually, netting 45 mmt CO_2e in exports.

Textiles

Table 1 shows the breakdown of the total CO_2e emissions of textiles manufacturing in the U.S.

Table 1 - Textiles Emissions, mmt CO_2e, U.S., 2020

Non-Combustion Emissions	Electricity	Stationary Combustion	Transportation on Site	Land	Transportation to Point of Use/Sale	Total	Percent of Gross*
81	17	14	5.0	3.3	2.4	123	1.7%

**Gross CO_2e in the U.S. in 2020 was 7,286 mmt (million metric tonnes)*

Textiles is a $60 billion industry in the U.S.,[1,2] and the manufacturing and emissions of textiles in the U.S. amounts to just under 2% of our carbon emissions. A total of 16.9 mmt of textiles is manufactured in the U.S. annually, which amounts to about 112 LBS per person. Textiles are challenging to recycle because of the wide variety of materials used in them, as well as blends of materials in the same products, such as in footwear, and only 11% is recycled in the U.S., with the rest discarded to landfills, as discussed in Chapter 22. Textiles includes pretty much everything made from cloth, so in addition to our obvious clothing and footwear, it also includes all our cloths, towels, sheets, window coverings, mattresses, pillows, upholstery, rugs and carpet. Other stuff like suitcases and sportswear like tents, sleeping bags and such are within the textile category as well. Think about that. Do you personally consume more than 100 LBS of textiles every single year? Seems excessive to me, but if you don't personally, somebody is sure as hell consuming it.

Table 2 is a more detailed breakdown of emissions categories. Just like the other consumption categories, the emissions of textiles can be broken down into the industrial manufacturing of final products from raw materials that are grown, raised, mined and extracted from the earth, and ultimately

discarded at the end of useful life. It's actually pretty easy to get rid of this portion of carbon emissions with personal purchasing decisions, by simply not buying new products. Most of the textiles we buy can be purchased used at one of the many local thrift stores, and serve us well for many years. Even sports equipment can be found used and in excellent condition. Where we live, there are several amazing used sports equipment venues within a reasonable distance, that are stocked with astounding selections of pretty much everything imaginable. Recently I bought a couple outdoor folding chairs to replace some failed ones for $10 each, when they would have cost about $30 each for new ones.

Table 2 - Breakdown of Textiles Emissions, mmt CO_2e, U.S., 2020

Material	Non-Combustion Emissions	Electricity	Combustion	Transp. On-Site	Land	Transp. Off Site	Total, mmt CO_2e (% of gross)*
Textiles Manufacturing and Raw Materials	37	7.2	3.5	1.2	2.5	1.2	53 (0.73%)
Adipic Acid	5.3	3.9	0.65	0	0.055	0.06	9.9 (0.14%)
Dyes and Pigments	1.39	1.04	0.23	0	0.019	0.021	2.7 (0.037%)
Plastic and Rubber Products	4.1	5.3	9.8	0.021	0.74	0.81	21 (0.29%)
Landfills	33	0	0	0	0.004	0.27	33 (0.45%)
Electricity and Natural Gas Transmission	0.015	0	0	3.83	0	0	3.85 (0.05%)
Total	81	17	14	5.0	3.3	2.4	123 (1.7%)

** Gross U.S. CO_2e emissions in 2020 was 7,286 mmt.*

Textiles manufacturing and raw materials includes emissions from the actual industrial processes and production of raw materials such as cotton, hemp and leather, including the agricultural processes that are used to grow agricultural products that are not organic. Adipic acid is a petrochemical used to make nylon, and the dyes and pigments as well as the plastic and rubber products are all petrochemicals as well, so the production and refining of petroleum is included. Textiles made from natural materials such as cotton and leather biodegrade in landfills and release potent methane gas in the process.

Textiles should be a really easy thing to reduce in our lives to reduce our carbon footprint, but evidently many of us don't see it that way. Clothing production literally doubled from 2000 to 2014, and it wasn't strictly to accommodate population, which increased by 19% over the same period. It was because consumers bought 60% more clothes and are wearing them for half as long as they used to. This movement is called "fast fashion", referring to the cheap and fast mass production. Now 60% of all clothing is estimated to end up in landfills or incinerators within a year of production.[3] I mean, how absurd is that? Seriously. And not only does all this waste increase our carbon emissions all for pretty much nothing, it also increases water, which plays big in manufacturing, just like any other industry. For example, a single pair of jeans consumes 2,900 gallons in manufacturing. Think about that.

So, who are you? Do you need constant changes of clothes to be happy and feel relevant? Or do you go shopping out of boredom and then buy something just to feel fulfilled? If so, you can make a difference by actually doing something meaningful with your spare time, like preparing wholesome food from raw bulk ingredients and feeling joy and pride in your creations. Or just take a nice walk outside. Or volunteer for a sustainability organization. So many good ways to use our time besides shopping.

For our part, when our clothes wear out, or even if we get bored with them, they get recycled or returned to the thrift store, where we then go inside and wander around, invariably finding a new and fun treasure that was somebody else's waste. In many cases somebody else's waste wasn't even used, not even once, which is the ultimate in useless impulse buy, or an unwanted gift. Anyway.

In the rare instances when we need new clothes, like, say underwear, which even I wouldn't buy used (though I know people who do), we seek responsible sources. A good example is Patagonia, who actually uses organic cotton and recycles all their clothing, and makes it into new clothing. It's a little pricey, but responsibility always is. That's why nobody wants to do it. However, the truth is, quality clothing lasts longer, and is worth our planet. I'll buy a pair of underwear from Patagonia long before I'll spend the same money on a bunch of cheap plastic underwear made by exploited and abused workers. Just saying. And, the Patagonia product lasts longer. I think I had my underwear for about 10 years before I had to replace it. Of course, it helps that I haven't gained weight in that entire time, by eating a healthy diet and exercising, so there's never a need to upsize my clothing.

There are plenty of sources of responsible, organic clothing, though you have to beat down the bushes to find them. Jockey actually makes some very nice organic cotton underwear, and Patagonia is using hemp and organic cotton to create a workhorse canvas material that's 25% more abrasion resistant than traditional cotton canvas, easy-wearing and easy on the planet, as well as fully biodegradable. This good stuff is out there.

Yet another of the many things I get sick of is when big corp tries to convince us that we need things we don't, which is constantly. I recently saw what might be one of the stupidest big corp recommendations I've seen, and there are plenty of those to choose from. This one, from the National Sleep Foundation,[4] obviously funded by big corp, recommends replacing your pillow every 18 months. I mean really? The entire pillow? I mean, if your home got infested with bed bugs, that might be a good idea, but other than that, can't you just wash the cover? For crike sake. And I see similar bullshit on mattresses, which can last pretty much a life time unless you happen to be really hugely obese, which is a bad idea in itself, as covered in Chapter 17.

Another one is the recommendation to replace our toothbrushes every 4 months, this time from Colgate,[5] who obviously wants to sell as many toothbrushes as possible. I replace mine when the bristles start falling out, which is about 5 years at least. And I still have all my teeth. Just saying.

What's Left?

Now that we've broken out all the major contributors to our carbon emissions in the U.S., we're left with the rest of the stuff that we buy and do, that individually make up tiny portions of the total, but add up to 643 mmt CO_2e per year, or 8.8% of our total gross emissions of 7,286 mmt CO_2e in 2020. It's worth noting that the actual emissions that I have calculated and am using as a basis is actually higher than the EPA total of 5,981 mmt CO_2e by 22%, because of the land CO_2 absorption that is lost by our occupancy, industry, mining and agriculture. The EPA also accounts for this in their LULCF calculations,[6] but they account for the annual differences in land usages. In this book, I've accounted for total land loss by including all the land that we're using, not the annual differences. I've done it this way because I believe that the total land lost provides a more actionable baseline to recover that land and convert it back into the carbon sinks that were meant to be.

Table 3 - The Remainder of U.S. CO_2e emissions, mmt/year, 2020

Non-Combustion Emissions	Electricity	Stationary Combustion	Transportation Miscellaneous	Land	Transportation to Point of Use/Sale	Total	Percent of Gross*
147	89	144	103	83	77	643	8.8%

**Gross CO_2e emissions in the U.S. in 2020 was 7,286 mmt (million metric tonnes)*

These remaining emissions, not accounted for in the individual categories that I chose to deep dive into, are for the mixed bag of products and activities that we choose to be a part of. This list of stuff is endless and random, and you'll probably know better than I what you do that's not covered separately in the previous chapters. Think about it. What do you do? What do you buy? Do you do a lot of sports? Do you get equipment for that? Climbing? Hiking? Camping? Skiing? Boating? Off-road? Hunting? What about appliances, entertainment systems, computers, housewares, yard tools, toys for the kids, electronics, snow blowers, leaf blowers and hair dryers? You get the picture. Think about what you have, need and actually use. At 8.8% of our gross carbon footprint, it's a decent prize in terms of reducing carbon footprint.

Do I Really Need This?

By one count, the average U.S. home contains about 300,000 items.[7] Based on my own personal experience, that doesn't sound too far from the truth. After two moves and many estate cleanups in our lives, we've experienced moving a lot of stuff, much of which never even got used once. We're again finding ourselves purging our belongings for the umpteenth time, and feeling better and less stressed with each repurposed item. Lightly used things go to thrift stores, and we try to find a recycling outlet for more seriously worn stuff. These days, we literally don't buy anything unless it's something we're replacing that's either too worn for use or irreparable, and we mainly buy used unless we can't find it in a thrift store.

Purging for me amounts to taking anything that's in my way or line of sight when I'm looking for something I actually do need, and weighing whether I really need that, whether I've actually used it in

the past few years, and whether I have something else that will serve the same purpose. If it fails this quick interrogation, then it goes into a box that's set aside for the thrift store, and when the box is full, off it goes. When I first began this process, I filled several boxes in a few days, getting rid of the low-hanging fruit, like clothes that I'll never wear again, excessive serving dishes that came from my mother's estate years ago, irrelevant books laying around, redundant shoes, and other stuff like that. At this point it takes a week or two to fill a box as I'm getting into more sensitive items, and as the box sits there, I have a little time to change my mind, which doesn't happen too often.

Being married to a trained chef, I've learned that the saying, "all a good chef needs is a sharp knife", is quite true. Basically, use the same simple things over and over. Our home is not and has never been full of a bunch of silly and redundant specialty items, like hot dog pans, omelet pans, mechanical knives, lettuce dryers, and other nonsense that big corp pitches to us all, as though our lives will be so much better and easier and simpler for it. All lies.

When we cook, we use cast iron or stainless steel pots and pans. We begged off the stupid poisonous Teflon coated pans years ago, after finally realizing that the coating is just a pain in the ass, because you can't clean the pot aggressively because you'll ruin the finish, which always happens eventually anyway. And then the self-same plastic coating gets into our food and we end up consuming it. Big corp sold us on this insanity by telling us that we'd never have to scrub a pan again because nothing would stick to it. What a bunch of lard. We still have to scrub, and any coating that we don't eat goes down the drain and poisons the environment, as discussed in Chapter 14. Of course, big corp then wants to sell you yet another new pan when the coating is destroyed, and on it goes. Give me a cast iron pan and some steel wool and I'm good to go. The pan will last for hundreds of years. Same for stainless steel, except maybe not so much the plastic handles. At the end of the day, there's no getting away from washing dishes, so the sooner we get over ourselves on that particular issue, the better.

Big corp has literally invented holidays to compel us to buy-buy-buy. Think about that. Between Christmas

Giving Sustainably

Of course I love to give as much as anybody, at Christmas and for birthdays and such. I find that there are many ways to give value that hopefully makes a difference for good.

At Christmas, I love to give the family members on our list a TerraCycle kitchen waste box. It's a little pricey, but it saves the younger families money and lasts about a year, keeping yet more plastic chip and snack bags and such out of landfill.

We tend to trade gift certificates and experiences, like a date for dinner or a play.

Consumables such as food, booze and gift certificates go over well. We do a lot of our own canning, and give some of it away, and often get the jars back for future use.

Books that teach an environmental lesson are great, as well as things that avoid single-use plastic and paper, like cloth napkins, pee cloths and bidets, as well as beeswax cloths and stasher bags. We use these at home and haven't purchased any sort of single-use plastic in decades.

Trash to landfill during the holiday season is more excessive than any other time of the year, and is completely unnecessary. We've mainly transitioned to re-usable bags, though we're still using wrapping paper that was purchased more than 10 years ago. We re-use most wrapping paper and all ribbons and bows, so no need to landfill them and we save money, while still having festive wrapping.

and Valentines and Halloween and Easter and Mother's Day and Father's Day and what-have-you, if you give at all of these, it's no wonder you don't have money left over for responsible food. I mean, nothing says "I love you" like cheap labor junk made in China. And Black Friday, waiting until the very second that Thanksgiving is behind us to spend spend spend on all that junk you're going to give for Christmas. My personal favorite: You gotta spend to save!

When we cleaned out our father's condo after he passed, we found an entire closet full of useless junk that people had given to him over the years, in original packages, that he accepted to be polite, said "thank you", and then stashed in the closet. Where it stayed for the rest of his life. Until we cleaned up his condo. Yeeeesh.

Sadly, it turns out that buying things releases dopamine in the human brain, and it may even be addictive.[8] Of course, big corp understands this and uses it to their advantage, constantly deluging us with junk mail and advertisements, pressuring us to buy stuff we don't need and upgrade when we don't need to, just to keep the big companies that make this stuff constantly growing, to the great detriment of our pocketbooks and our environment. Not only do we exploit resources and energy needed to make all this stuff, but then we waste it when our obsolete stuff or stuff we're bored with piles up and we get rid of it one way or another, when we could have just kept using it to extinction. And they know that we tend to avoid advertising by walking away during commercials, for example, so they'll amp up the volume in an effort to drill it into our brains. Which is yet another good reason to say no to big corp in general, and stick with local products.

I've already pointed out in Chapter 22 that we're paying significantly more money for packages than we are for products, and a similar thing can be said about purchasing things that are heavily advertised by big corp. When you buy the product, you're paying for the advertising, which isn't cheap. When you succumb to big corp goods that you don't need or that are bad for you, you're paying them to brainwash additional suckers. When it's put like that, do you still want those Coco Puffs? Really? Wouldn't it be so much easier to simply get familiar with local stores in your area, and buy healthful, low impact offerings that are better for you and the planet? In bulk if possible? Who knows? It could get addictive.

We've been simplifying our life and belongings for more than four decades at this point. When we were married, my vision of what my kitchen should be stocked with aligned with what we had growing up. I was convinced that a hand mixer, for example, was absolutely essential. I soon learned that I was wrong. When we received a hand mixer as a wedding gift, I burned it out in no time making cookies. I replaced it, and burned that one out too. Then I bought a really beefy one, and it didn't last long either. After three tries, I was forever done with hand mixers, and have been stirring ever since. I've had the same spoon for more than 40 years and it still works just fine.

After burning out our share of electric coffee grinders, we went to hand grinders that work just great, and are just as fast.

We finally begged off garbage disposals after several failures, and now we simply use a strainer.

If we really feel we need something we can't fix or don't have, I'll keep an eye on the thrift stores and eventually it will show up. When we were transitioning away from natural gas in our home, we

chose to size our heat pump to heat the main living area and kitchen on extremely cold days, and not the entire house. This was to save money on the system. We decided to depend on tower heaters if we needed to use the extra bedroom and office, or to supplement the heat pump in case of extreme cold. Over several months, I was able to find the heat pumps at the local Goodwill and Salvation Army thrift stores, at a fraction of the cost of new ones.

Another thing we can do is share large equipment that we don't use frequently, like power tools. I mean, do we all need to have our own personal chain saw, or our own table saw, arc welder or chipper-shredder when we just use them a couple times a year? This sharing could easily be accomplished through a local communication system.

I already mentioned in Chapter 19 that we use our dishwasher mainly as a drying rack. We also own and use a laundry machine, though we don't use a dryer, preferring to hang our clothes instead. We also have a refrigerator, something that's arguably hard to do without, and these actually hold up really well over time. We even own a blender, which is key to our lifestyle, which involves a lot of smoothies and pureed soups. We also have a nice Kitchen Aid mixer, key for Hilary's pizza and breads and such. When you need to purchase or replace items like this, find the most energy efficient Energy Star rated models, which typically have a tag on them.

Obviously, we spend a little more time in life doing dishes and hanging clothes, as well as on cooking since we don't do prepared food. However, it's not much more time, and it feels like a good way to live, a way that we were meant to live. And don't tell me you don't have time because you're working. I started on this path when I was in my early 30's, working a full-time job, taking college classes towards my engineering degree and raising a family. I even found time to volunteer at the school. We even homesteaded and gardened, and also did a fair share of camping, skiing, bicycling and outdoor activities with the kids. To me, this is living a real life. A busy life, to be sure, but a real life. I definitely don't waste time shopping for clothes I don't need. I'd rather take a walk. I have plenty of time to do fun things that I love, and still live sustainably. It's not hard.

Why Does This Exist?

In my own humble opinion, for what it's worth, I think some things should be illegal. Mainly because they're horrible for the environment and completely useless, and yet there are always brainwashed idiots out there who think they need them. Take leaf blowers. OMG. Can it get any stupider? Instead of using a simple broom, let's buy a big overpriced monstrosity that consumes petroleum fuel and use it to blast leaves and dust and trash all over the place instead of just sweeping it up. I mean, which is more likely to throw out your back? Leaf blower or broom? Which is more likely to break your pocketbook? Which is more likely to give you ear damage? Which is more likely to give you a respiratory infection? Or watery eyes? If I see some moron blowing around leaves in my hood, I stay as far away as possible, even crossing the street and going around the block to keep from inhaling whatever nasty smarm, mold, dog shit dust and other yuck that happens to be on the ground. Think about that.

The Easy Button

In just the past two generations, we've gone from actually fixing things that break to simply trashing them and getting another. These days, most things aren't even meant to be repaired, and it's sometimes impossible to get inside an appliance to see if it's just a loose wire, which, as often as not, that's all it is. My husband always at least tries, and, on more than one occasion, found that just taking it apart and putting it back together gets it going again. Which means it *was* just a loose wire in there somewhere. This happened with our ever and always popcorn popper, which we had ended up with when my mom passed away in 1990. When we cleaned out the family home so that my dad could move on and size down, we gave most things to thrift stores, but kept some of the keepsakes. The popcorn popper meant a lot to me, because my mom had always struggled to make popcorn in a pan, then this newfangled popcorn popper came along that was absolutely ideal. You just added the popcorn and it popped out of there into a bowl, and was perfect every time. And fast. And, since Hilary and I love popcorn, we took it. And it worked great for all those years, until a few years ago, it suddenly failed. Hilary took it apart, since it was old enough that it was easy to do, and couldn't find anything wrong, but then when he put it back together again, it suddenly started working again, and has been just fine since then.

There are now environmental groups that host workshops to teach us how to do simple repairs on small appliances, which can make a big difference in our consumption and waste.[9] There are also how-to-repair books.[10] There's still a general lack of repair shops that repair small appliances, but hopefully we'll see more of that too, for people who prefer to outsource. We've developed a stubborn mentality at home to resist the temptation to toss and buy another. We tend to think very carefully about anything we might consider consuming, and, in many cases, realize we don't even need it, that we have something else that will work just fine, or we can figure out another way to get something done. If we do have failed electronics, it's extremely important to recycle it at a facility that takes electronics, to make sure that all the metals are recovered. Electronics shops even recycle the plastic, because when it's sorted properly, it's perfectly recyclable.

Planned obsolescence is something that big corp has developed the ugly and manipulative habit of designing into their goods, to make sure we'll need another sooner than later. A huge example is computers, which tend to be obsolete the second you buy them. Another is cell phones. My computer, which runs on Microsoft Windows, constantly gets updates that I can't avoid. It seems like little to no time passes between updates, and they always move things around and change my settings, which really pisses me off as I waste my time trying to figure out where something that was in one place went to. And, almost never is there an actual noticeable benefit to these, they just wonk things around to make us think there's a benefit. They're constantly pressuring me to add apps and bells and whistles that only create more chaos and confusion on my machine and use more memory, which will ultimately cause my computer to fail. Which is what happened with my previous computer. All the extras that they kept cramming onto my computer finally taxed it to the point where it wouldn't even start. I had to have the hard drive copied over to a new machine. Then I recycled it and got a new one.

Since I have zero interest in putting up with being forced to upgrade my computer every 3 years, I'm investigating alternatives, other than reverting to a typewriter. One example is an independent manufacturer out there, Libre.[11] They provide modular computers, to allow not only do-it-yourself construction, but also repairs. And the operating system can be something other than Windows or Mac. I'm thinking of returning to Unix. It's much more stable than Windows, and doesn't require the constant updates, so it may or may not be a solution. I really do think that, in the long run, computers play huge in reducing our carbon emissions of paper, which is extremely important, but we have to find ways of avoiding yet more manipulation from big corp as they take advantage of yet another opportunity to line their pockets with yet more gold.

Recently, more and more consumers and even repair shops who would actually prefer to repair their electronics and appliances are pushing for "Right to Repair", with the ultimate goal of removing barriers to repair.[12,13] Specifically, this is forcing big corp to cut the crap and make parts available for basic repairs so we can fix stuff we own, or have a shop fix it, instead of being forced to buy a new one because "it would cost more to fix it than to just shitcan it and buy a new one". And, state by state, different forms of this law are being implemented. In France, they require products to be labelled with a repairability score, which I think is an absolutely wonderful idea that we should implement here in the U.S.. Repair guides can even be found at www.ifixit.com.

Spreading the Carnage

It didn't feel like a discussion of our consumption would be complete without including imports and exports. After all, when we import our food and goods from other countries, the carbon footprint is attributed to the other country, since that's where the products were produced. The carbon footprint of transportation also hits the other country, by the same reasoning. Sort of. In reality, many countries do not actually produce fuels, but rather import them from somewhere that does. But the CO_2 emissions from consuming the fuel within the country is included in that country's gross CO_2 emissions. It's truly a mixed-up world out there. Anyway. By the same reasoning, if we export goods from the U.S., the production of those goods obviously hits our carbon footprint, along with the CO_2 of the transportation fuel which, for the most part, we do actually produce in this country.

I originally thought it would be pretty simple and fast to figure out how much we actually import and export, but the information that's easily available from any search typically highlights imports or exports of a particular good, but not both. For example, if one searches on food imported to the U.S., the answer that quickly rises to the top is "in the U.S. we import 15% of our food". Which could be true, but is only half the story in terms of how much it impacts our carbon footprint and that of other countries. We also have to account for what is exported to have a complete and balanced picture. We may hear that a typical carrot travels 3,000 miles to reach a U.S. grocery store. Wow. It feels like we're pillaging the entire earth with our runaway consumption of carrots, dragging them 3,000 miles to our doorstep. For the purposes of this book, it feels like we're wantonly increasing our carbon footprint per capita with excessive imports, which means that we have to find ways to reduce even more carbon to get in balance with our planet. Which sucks, because Hilary and I love our coffee, which is always

imported from thousands of miles away. And our scotch. Great, I figured; now I can't even feel good about drinking coffee. Or scotch.

It turns out that the project of figuring out our imports and exports balance was anything but simple. Far from it. The problem is that, while a search on imports and exports brings up lots and lots of random information, it's all in dollars. And, I can't calculate the carbon emissions of dollars. I have to know the weight of the products, so I can use my methodology of calculating all-in carbon emissions for say, a car, or a roll of metal, or a cow, or a dress, and of course the carrots, which will all have different costs per LB, as well as different carbon emissions. And, there was absolutely no weight information out there. Ouch. After extensive searching, I finally found the World Bank web site,[14] which maintains a database of literally all world trade between all countries on the globe, from the U.S. to China to Zambia. However, the queries tended to still return dollars, with a smattering of weights, combined with other units, like area in square meters for things like plate glass, or units for clothing. Kill me. I eventually found that I could dig deeply into individual products and get the actual weights that I could use by manually summing them up on a spreadsheet. Which was great, but there are literally thousands of categories of products, so this was a fairly arduous process that took several weeks to complete. I was glad when it was over, because I was beginning to experience ergonomics issues in my hands and arms from all the mouse-clicking to do all those queries.

I expected to find, at the end of the day, that our imports far exceeded our exports, showing that we're ravaging the entire planet and not just our own country. Which is true, to a point, but it's not with imports. It turns out that our exports are actually just a tad higher than our imports. Which is good, because it means we're pretty much in balance globally when it comes to carbon footprint of trade. So it looks like I don't have to feel so bad about the coffee or the scotch or the carrots after all. And it won't be necessary to reduce our CO_2e by more than 80%. Yay.

In Table 4 total imports to the U.S. and all of the exports from the U.S. in 2020 are shown, along with the total carbon emissions of the net traded products, including transportation. While there aren't very many numbers in this table, the numbers are the result of a lot of work, summing up thousands of numbers from all the various categories of trade from every country in the world to and from the U.S.. The first thing to note is that our total exports is more than the imports, by 174 mmt of products, thus the negative value in the cell for "Net Imported". Our total exports from the U.S. is about 17% more than the imports to this country.

The carbon emissions for the net imports, is -149 mmt CO_2e, where the negative sign actually means the same as 149 mmt CO_2e for net exports. The CO_2 emissions were calculated individually for each category of product, using exactly the same methodology as was used for all the components of U.S. manufacturing and production that was used for the emissions per capita in chapters 16-22 as well as this chapter. This assumes that the products manufactured outside the U.S. emit similar carbon footprints to those manufactured within the U.S., which is probably reasonable for the lion's share of products. Basically, glass is glass and metal is metal and a cow is a cow.

The transportation emissions of 105 mmt is applied only to the products that were imported to the U.S., with the reasoning that when we export, the transportation emissions hits our total, while

when we import, the fuel comes from somewhere else and is part of another country's emissions. The emissions of transportation were estimated based on average distances travelled by ships, trains and trucks to haul it all.

The final total of -45 mmt CO_2e emissions of imports, or 45 mmt CO_2e of exports, with transportation included, amounts to 0.75% of our total U.S. CO_2e of 5981 mmt in the U.S.. This means that in theory we could actually reduce our CO_2e per capita by 0.75%, but it's such a tiny amount that it doesn't seem worth the bother. Also, this tiny little number means that we can stop worrying about the carbon footprint of imported products and their transportation, and keep our eye on the real opportunities to reduce our impact, which is our individual consumption in general, whether imported or not.

Table 4 - Summation of All Global Imports and Exports to and From the U.S., 2020

Product Category	Total U.S. Trade, mmt, 2020			Carbon Emissions, mmt CO_2e		
	Imported	Exported	Net Imported	Net Imported	Transportation	Total
All Products	1,032	1,205	-174	-149	105	-45

Table 5 shows the total carbon footprint of the ten highest imports, along with concurrent exports of the same products. The top ten trade categories only represent 10 of a total of 98 different categories that are defined by the U.S. Census Bureau and monitored by the World Bank.[15] The top category is petroleum fuel, mainly various grades of gasoline, diesel and fuel oil for transportation, dominating the rest of the categories by a long shot, and showing that we export about 40% more than we import. Second is food, and we export 70% more of that than we import, with transportation of the imports a paltry 7.67 mmt CO_2e, or just 0.1% of the total U.S. carbon footprint. So, while it's true that your average winter carrot comes a long way from Argentina to the grocery store, it's also true that it's a wash compared to all the food that we export. The remaining top ten categories show imports higher than exports, comprised of construction materials, fertilizers and vehicles.

Table 5 - Ten Highest Imports to U.S. in 2020 with Exports, Net Imports and Total Carbon Emissions

Product Category	Total U.S. Trade, mmt, 2020			Carbon Emissions, mmt CO2e		
	Imported	Exported	Net Imported	Net Imported	Transportation	Total
Petroleum Fuel and Products	494	697	-203	-63.1	49.6	-13.5
Foods, Feeds and Beverages	76.4	233	-157	-350	7.67	-343
Earth, Stone, Plaster, Ores, Salt	63.1	28.2	35.0	0.127	6.34	6.46
Finished Metal Shapes	36.8	11.1	25.7	12.4	3.70	16.1
Wood Building Materials, Lumber, Plywood, etc.	34.1	17.2	16.8	65.0	3.42	68.8
Plastic Materials	31.5	4.0	27.5	44.5	3.16	47.6
Chemical Fertilizers	31.3	12.9	18.4	8.18	3.14	11.3
Sand, Gravel, etc.	27.4	4.54	22.8	0.218	2.74	2.96
Non-Ferrous Metal (Excluding Aluminum)	25.8	3.37	22.4	22.0	2.6	24.6
Automotive Vehicles, Parts and Engines	22.0	10.5	11.6	74.5	2.21	76.7

Table 6 shows the total carbon emissions of the ten highest exports, also with imports of the same product categories. As with the imports, petroleum fuel is the highest by far, followed by food. Wood pulp is third, and it turns out that we export a lot more wood pulp than we import, cardboard and such, and we export more newsprint than we import as well. You get the picture. While food and petroleum dominate, they're washed by all the other smaller categories.

Table 6 - Ten Highest Exports from U.S. in 2020 with Imports, Net Imports and Total Carbon Emissions

Product Category	Total U.S. Trade, mmt, 2020			Carbon Emissions, mmt CO2e		
	Exported	Imported	Net Imported	Net Imported	Transportation	Total
Petroleum Fuel and Products	697	494	-203	-63.1	49.6	-13.5
Foods, Feed and Beverages	233	76.4	-157	-350	7.67	-343
Pulpwood and Wood Pulp	42.8	5.86	36.9	-143	0.59	-143
Organic Chemicals	30.3	13.7	-16.6	-46.3	1.38	-44.9
Earth, Stone, Plaster, Ores, Salt	28.2	63.1	35.0	0.127	6.34	6.46
Inorganic Chemicals	20.5	13.4	-7.05	-5.44	1.35	-4.10
Wood Building Materials, Lumber, Plywood, etc.	17.2	34.0	16.8	65.0	3.42	68.8
Iron and Steel Mill Products	17.2	25.5	8.3	7.6	2.6	10.1
Newsprint, Printed Material, Books, etc.	14.1	10.7	-3.4	-15.4	1.1	-14.4
Chemical Fertilizers	12.9	31.3	18.4	8.2	3.1	11.3

Our Fair Share

So, inquiring minds may be curious about Julie's print on "The Rest". To get a sense of that, I added up all of our non-food purchases for 2024. There were 21 purchases of small, everyday items, 9 of them from thrift stores, and the rest purchased new. I bought a new electric razor for Hilary for Christmas, because that seemed personal enough that it should be new. Same for some organic cotton underwear that I got from Jockey. I bought some new camping gloves because mine were too worn out to use and couldn't be repaired (I tried, but it made the fingers too short). I also bought some aquarium fish and supplies for my hobby. I got flowers for my sister in law when she lost her mother. We also got a couple craft items, jewelry made by native Americans from an outdoor vender in Arizona. Also some new tires for our car, the biggest expenditure and carbon footprint by far for the small items. After figuring the CO_2e for all this, it amounted to just 0.1% of our gross carbon footprint.

Which is great, except that we also installed solar panels and a battery in 2024. While these are great for getting us off fossil fuels in the long-term, they hit our carbon footprint in the short term, to the tune of 2.2 mt, bringing up our total emissions for "The Rest" as well as for the textiles, up to 12% of our gross emissions. Which is actually 6% for me, since the above numbers are for both of us.

Basically this means that our carbon footprint for “The Rest” is about half compared to the national average of 1.7% for textiles combined with 8.8% for “The Rest”, a total of 10.5% of U.S. gross emissions. So we’ve reduced our carbon footprint by another 5%, rounding down a bit, simply by not buying much, and buying used when we can. And, without the solar panels and battery we would have been at 0.1% of gross emissions, or 0.05% for each of us, a reduction of 10.45% for each of us. Adding this 5% to the cumulative 56.2% waste reductions we had through Chapter 22, we’re each now at a total reduction of 61.2% of our personal carbon footprint per capita for each of us for 2024. And since we won’t be installing solar panels and a battery every year, in future years our reductions will include 10% (rounding down slightly), for each of us, putting us each at 66.2% reduction, well on our way towards the 80% that’s not really needed until 2050. Of course, we won’t be necessarily flying to Argentina every year, which means we’ll have another 6.1% reduction from not flying, getting us to a reduction of 72.3% reduction. At this point, our lifestyle brings us well within the carbon footprint reductions that we all need to achieve in order to save our planet.

So, what’s yours?