

Leah ([00:00](#)):

If you work in the climate space, you're probably used to hearing one question over and over again.

Speaker 2 ([00:06](#)):

Is there anything I, as an individual, can do to open the door to change?

Speaker 9 ([00:12](#)):

But what can I do?

Speaker 3 ([00:13](#)):

What can we, as individuals, do?

Speaker 4 ([00:16](#)):

What measures should an individual take to reverse the effects of climate change?

Katharine ([00:21](#)):

We both get asked this question all the time, which frankly is exciting. It's so encouraging that more and more people want to be involved in this critical work for a just and livable future.

Leah ([00:35](#)):

Yes, I love it. Everybody is welcome to join club climate. But, it can be a tough question to answer on the fly. It can be hard to tell people what exactly they can do at any given moment.

Katharine ([00:49](#)):

I totally agree, and I find it actually kind of stressful, because I feel somehow responsible for helping give good answers to this question, when the truth is, that the answers to it are incredibly complex, because the climate crisis is complex and it touches so many aspects of our world and our lives. And, we each need to be finding a great way to be of use within that bigger complex situation.

Leah ([01:21](#)):

Yeah, but telling people it's hard and complex is not going to help them. So, that is why we decided we were going to take some time ourselves to really dig in to how

we could answer this question, "What can I do?". And that's going to be the topic of our first three episodes this season.

Katharine ([01:39](#)):

Yep. We thought it was high time for a mini series on A Matter of Degrees, and we couldn't think of a better topic to do than answer this question, "What can I do?" through a few different lenses. And in this first episode, we're going to be starting with the personal, what can I do at the individual level to take action on climate change?

Leah ([02:01](#)):

And then, in the next two episodes of this mini series, we'll be looking at how we can make changes in our professional and political lives. The idea is to begin with ourselves and then widen out to our broader spheres of influence.

Katharine ([02:14](#)):

Never too soon to bring in a little poetry, Leah. And this reminds me a lot of the quote you used from Rilke. That's the epigraph to your essay in All We Can Save. And, you should just recite it because it's your essay and your epigraph.

Leah ([02:32](#)):

I don't know if I've got the best turn of the century Austrian poet voice, but I will do my best.

Leah ([02:39](#)):

I live my life in widening circles that reach out across the world.

Leah ([02:45](#)):

I love that idea, that idea of widening circles. And that's what we're going to be focusing on in this mini series.

Katharine ([02:53](#)):

I think it's a really beautiful image. What I see are ripples going out across the still surface of a pond. And, it reminds me that my actions are bigger than me, that they may start with me individually, but they ultimately spread out to the people, the communities, the spaces that I'm a part of. They keep widening and maybe even intersecting with the ripples that other people are sending out too.

Leah ([03:21](#)):

That's right. And so we need to start with ourselves and answer that question of what can we do on a personal level, that beginning of these widening circles.

Katharine ([03:30](#)):

And ultimately, we don't think this mini series is going to give you all the definitive answers to "What can I do?" forever and always, but we hope it is going to give you a framework, so that you can keep asking and answering this question, really, throughout your lives.

Leah ([03:46](#)):

Because this is going to be an ever present question for all of us, at different times and different places for different people. We all need to be asking and answering that question of "What can I do?" about the climate crisis? Because there is just so much left to do.

Katharine ([04:01](#)):

Absolutely. And, we recognize that not every action, not every solution will apply in every situation. We're unique. But, being willing to get in there and work with this question of "What can I do?". It is a critical muscle that we need to develop, as our world warms and our planet faces even greater challenges.

Leah ([04:24](#)):

And ultimately, in addition to leaving you with some specific ideas and a framework, we hope that, by the end of this mini series, we'll leave you with a new question, a more inclusive one, which is, "What can we do?"

Katharine ([04:42](#)):

Welcome back to season three of A Matter Of Degrees, stories for the climate-curious. I'm Dr. Katharine Wilkinson.

Leah ([04:49](#)):

And I'm Dr. Leah Stokes.

Leah ([04:54](#)):

We've all heard it before. Reduce, reuse, recycle. But we know from our daily lives that, while that's important, it's not enough. So, I challenged Katharine to come up with another idea, something else that people could do in their daily lives to make a bigger difference, especially on climate change. And unsurprisingly, she said, "Well, if she had to do it, then I did too."

Katharine ([05:17](#)):

Yeah. None of this professor assigning homework kind of business, Dr. Stokes. And you could even say, sometimes, Leah has not been the biggest fan of personal action on climate change, even though she does a lot of it. But, we get it, right? It can feel a little bit useless, a little bit small potatoes, not enough to matter. But, we think it actually depends, really, on what kind of personal action we're talking about.

Leah ([05:46](#)):

That's right. When I've been critical about small individual change, what I've really been saying is that, we have to focus on structural changes, on durable changes. If you have to turn off the light every single time, that's great. You should do that. But that's a lot of decision making and you have to do it repeatedly. What if instead, you put solar panels on your roof? And then the electricity running through your house was clean right off the get go. So that if you forgot to turn that light off, it wouldn't be as big of a deal.

Katharine ([06:19](#)):

All right. So, Leah, that's enough suspense. Tell us what you came up with for durable, personal level change.

Leah ([06:28](#)):

Well, at this point, everybody knows what a solar panel is, and I'm sure a lot of our listeners have solar on their roofs or have worked on putting it on a community project, something like that. But do all our listeners have an induction stove? How about a heat pump? That's what my favorite examples of the structural change at the individual level looks like right now. It's called electrification. And it's really about getting all of the fossil fuel machines in our lives, like our stoves and our furnaces and our cars, to run on electricity.

Katharine ([07:03](#)):

Well, I am shocked that you came up with something related to electricity, Leah.

Leah ([07:09](#)):

One trick pony. One trick pony.

Katharine ([07:11](#)):

No, I also have to say, I love this, because, for example, I have a condo. I can't put solar on my roof. And, let me just tell you, I got composting from my HOA, but we did not get there on solar. But, an induction stove, a heat pump, these are things that I actually have control over. So, I also like that these maybe feel a little bit more in reach for more people.

Leah ([07:38](#)):

That's right. Electrification is accessible to a lot of us. I would dare say, the vast majority of our listeners can do something to electrify their lives. That's why I called up Sarah Lazarovic. We work together at Rewiring America, where she runs all things communications. But Sarah is also an amazing artist, illustrator, writer. Really, she's got a lot of talents, and she lends all of them to climate work.

Leah ([08:04](#)):

Well, and I had a question for you, have you electrified your home?

Sarah ([08:08](#)):

Almost. I am down to, got my heat pump. I have an electric range. I don't know if I want to admit this, it's too embarrassing, but we have a gas fireplace that my son loves. And so, I've been looking at all these electric options, but his favorite thing to do is sit by it. So, every year, I'm like, "I'm ripping it out." I think this is the year I rip it out. And then we have a tankless hot water heater, which I want to switch to heat pump hot water heater soon. But, we just got our energy audit a week or two ago with the recommendation. So, number one is the heat pump water heater, and then the photo vault tanks because we have these really old solar panels, because I have been on this journey for a long time. So I'm going to switch those. So once I get those two things done, then it will be fully electrified. And then I'm going to rip out the pipe.

Leah ([08:56](#)):

This is the electrification journey that Sarah and I, and countless other people, have embarked on. It's a quest to rid all of our homes from fossil fuels.

Katharine ([09:06](#)):

I really love Sarah's work, so I'm so excited that that's who you wanted to talk to, Leah. And, I'm curious, how did we get here? How did Sarah decide that this was the critical step to take?

Leah ([09:19](#)):

Well, like a lot of other people's entree into environmental work, Sarah started asking herself questions about all the stuff around her. She started to wonder, what was the impact of all of this stuff? What was it doing to the planet?

Sarah ([09:34](#)):

For me, the entree to climate and the dawning realization of how bad things were really came through the lens of consumerism. I think fast fashion maps to my age as a person. When I was a kid, going to the mall with my friends as a suburban Florida mall rat, the things didn't change. There weren't new items at the Gap every day, the way there are at H&M and Zara today. And then, as I grew and went to university and got my first job and had some purchasing power, I started walking home from my job at the CBC and being like, "The things are changing in the stores every day."

Sarah ([10:06](#)):

And then I started looking at my own personal consumption and thinking, "I buy more than I used to just because everything's so cheap. And, where is this all coming from?" So I started doing all these weird art projects around not shopping for a year and chronicling the things I wanted to buy but didn't buy, and drawing the things I wanted to buy but didn't buy.

Leah ([10:25](#)):

This weird art project turned into a gorgeous little book called A Bunch of Pretty Things I Did Not Buy.

Katharine ([10:32](#)):

I love that idea for a book, honoring the not done things, the not bought, the not taken home, and the way that Sarah really steps back to examine purchasing patterns and our relationship to consumerism. And I've definitely seen her take up some of those topics in her wonderful newsletter also, Minimum Viable Planet.

Leah ([10:55](#)):

And so Sarah started to get obsessed with this question of, "What can I do?" It was running in her head again and again, like it does for so many of us. And she was starting to question whether the things she was doing to answer that, whether her actions were really the right ones.

Sarah ([11:12](#)):

I think I found myself just dwelling or spending a lot of time on things that are really beautiful and meaningful, like trying to make soap or make my own lip balm. But, that's something that's a great to do if you love making your own lip balm. But, as far as, what is the most effective way for me personally be bringing down emissions is not making my own lip balm. So, come at it, if lip balm is what gets you in the door, do it.

Sarah ([11:35](#)):

And then, just as long as we find ways to make sure that everyone's minds are opened up to the bigger systemic actions they can help catalyze, if they want to do those things. And obviously, if they don't, even making sustainable lip balm is still wonderful and better than not sustainable lip balm. But yes, I agree 100%. Come at it from wherever you can and find your way in, because I think that is hard, because it can be an impenetrable "Where do I start? What do I do?" Just do something.

Katharine ([11:59](#)):

I really wish that lip balm were a major climate solution. It would be kind of a fun craft project, to be honest.

Leah ([12:07](#)):

Look, it's not a bad idea, but I don't think it's going to slash carbon pollution quite as fast as we need to.

Katharine ([12:13](#)):

Sadly.

Sarah ([12:15](#)):

This is actually not enough. Because I was reading all the climate literature around all the things you and I know, albedo effects and tipping points and just the amount of parts per million of carbon dioxide in the atmosphere. And it's like, people are not

changing. People are still buying those things. So, what other tools and levers can we use?

Sarah ([12:34](#)):

So, that's when I went deep on policy and I was like, how can we structurally change things? Because, me telling people to stop buying jeans is not going to be the way. That's not to do the whole individual action versus systemic action thing. It's more just, what are the really meaningful individual actions you can do. And sure, we should all buy less, but it was really this path from my role as a consumer into what are the upstream consumer interventions I can take. Buy less clothes, Sarah, but also, swap out your gas furnace for a heat pump because that is a huge amount of emissions.

Katharine ([13:09](#)):

Leah, it sounds like Sarah was kind of playing the emissions calculator game, trying to figure out, of all the possible actions, which ones actually amount to the biggest impact? And honestly, I think that's something a lot of us have done, trying to figure out, "I've only got so many hours in the day, so if I'm going to do something, what's the most useful?"

Leah ([13:30](#)):

And that's an important question to be asking, what can I do that has the biggest impact?

Leah ([13:35](#)):

So Sarah started to make lists of things that she could do. And she published one of them called 100 Things You Can Do to Help in the Climate Crisis. It's this beautiful little comic. You can look it up online in YES! Magazine. And it's all these little grids and images with things like, "Hey leader, clean the grid please." Or, "Hot new options, solar geothermal heat pumps." It's quite funny.

Katharine ([13:59](#)):

Yeah. I love that little list. I feel like it's kind of a quilt of climate actions.

Leah ([14:03](#)):

Yeah, or like a bingo card, right? Get a line up five in a row.



Leah ([14:09](#)):

But one theme pops up again and again for Sarah in this comic, and it's electrification.

Katharine ([14:15](#)):

We do love electrification. And, we're not just talking about electric vehicles, right, Leah?

Leah ([14:21](#)):

No. That's probably what most listeners are thinking of. But that's really only one part of it. A car is not the only thing you might own that runs on fossil fuels. The fact is, we have to remove all the fossil fuel appliances from our homes, whether those are furnaces, water heaters, stoves, dryers, fireplaces, the list goes on. There's a lot of these machines in our homes.

Katharine ([14:45](#)):

Yeah. This is not a pretty picture in the average home. I mean, you've got fossil fuel infrastructure all up in your business, right in your residence.

Leah ([14:55](#)):

Yeah. People may not realize it, but it's kind of like they're running their own mini fossil fuel plant at home. So this is the fossil fuel infrastructure that we, as everyday people, are in charge of. And it turns out, according to Rewiring America, there's actually a billion machines that run on fossil fuels in America alone that we need to replace.

Katharine ([15:16](#)):

A billion, Leah.

Leah ([15:19](#)):

It's a stunning number. And since there are fewer than a billion people in America, that means that every single person can help to get rid of a couple of fossil fuel machines. 1, 2, 5, 10, you name it.

Sarah ([15:32](#)):

1 billion. 1 billion machines, and you can quickly see why that number is so big. Every household that has a gas furnace, that has a conventional AC unit, that has gas

stove, I think it's 121 million American households that we need to electrify. So, yes, carbon emissions are huge and come from myriad sources, but we, as individuals, have huge power over a considerable chunk of the emissions. And that's why I feel so good when you electrify your house and get rid of those gas appliances, because you're like, "Wow, that's a meaningful amount of carbon that I've just prevented from being burned up into the atmosphere." So yeah, at Rewiring America, I mean, the goal is not just the household, but it's also communities, schools, everywhere we live, work, play and pray.

Sarah ([16:16](#)):

And also taking a community approach to it. Because, by electrifying, you keep the power in your community, instead of using gas that comes from sources that range from bad to truly evil. You are building that resource within your community because you're putting solar on your roof that powers your house and can supply your community when you have extra. And so, it's not even just the emissions. I mean, it's hugely the emissions, but it's also a new framework for just looking at how we use energy and how we share energy with our community, and how we keep those dollars local instead of sending them to bad places.

Katharine ([16:50](#)):

So, Leah, I know you've been taking this electrification thing to heart, not just in your work, but at home. How's it been going? What has it been like to go through this process?

Leah ([17:00](#)):

Well, I'm about halfway through my electrification journey right now. I have bought an induction stove. I'm getting a heat pump. I'm planning to stick solar panels on my roof. And I have an e-bike as well. So, I'm pretty close to replacing a lot of the fossil fuel machines in my life, and tearing out that gas pipe from my home.

Katharine ([17:20](#)):

Is there some kind of award rewiring gives to people who get all the fossil fuel machines out of their house? Because I think that should be a thing. I mean, that could be kind of awesome. You could have a stamp of certification for your fossil-free home.

Leah ([17:36](#)):

Yeah. I love it. Achievement unlocked. Fully electric. We've talked about, for example, putting signs in front of people's homes. Like how you might put a sign up for a politician, how about putting a sign up that said, "I went all electric."? And you know what's funny? This is something that I wrote about in my essay in All We Can Save. And it's also something that Sarah has been talking about too. So, great minds think alike. Hopefully, by the end of 2022, I will have gotten that gold star from Rewiring America.

Leah ([18:07](#)):

But the thing is, for a lot of us, we need to actually be planning ahead to be ready to go all electric, because you never know when that furnace might break in the middle of the night. And that's something that Sarah talked about.

Sarah ([18:20](#)):

The number one thing is you actually have to be ready because, and we talk about this a lot at Rewiring America, you need your rewiring readiness, because the problem is that, most of these appliances die at the least opportune time. Your furnace breaks in the middle of winter. Your AC dies in the depths of a blazingly hot summer. And what do you do? You call someone. They come, and you trust them because they've got their name tags sewn on their shirt, and they've been doing this for a lot longer than you have. And you say, "Oh, I want the most efficient thing," because everybody wants the most efficient thing. But they're giving you the most efficient thing out of a menu of things that are not right.

Sarah ([18:54](#)):

And, in the case of, I think we did replace our gas furnace many years ago, the first time through, in precisely that scenario. It died. I was like, "Oh, I want the best thing." And, the best thing was like, "Oh, you'll get you a high efficiency furnace." But high efficiency furnace is still locking in emissions for 15, 20 years. I mean, less so, because things are not made as well as they used to be, but that's another story. But you're locking in those emissions. And so, if you're freezing at three o'clock in the morning, holding a baby and wanting a new furnace, you're just going to go with that option, when what really needs to happen is you got to be ready.

Leah ([19:26](#)):

And you may need to be ready with a little bit more money for upfront costs. But the fact is, that once you make that investment, it's going to save you money in lower energy costs over the long term.

Sarah ([19:38](#)):

But actually, when we've run the numbers with my friends who are an engineer and an energy consultant, right now, it's like, "Oh no, it's shifting much more quickly than we thought." I am saving money. I do see that, despite what people have always said about the cost of electricity being way higher, my bills are a little bit lower and I'll be able to fully add it up in a couple of months and just compare for the year what it cost us. But it's definitely lower than what I spent on gas. By and large, you are going to come out ahead increasingly, as the cost of electricity goes down and the cost of gas and carbon-intensive things goes up. So, that is a compelling argument. You're doing this thing for the planet, but also you're going to save a lot of money.

Leah ([20:15](#)):

Rewiring America estimates that electrifying your home will save the average American household \$1,000 to \$2,500 per year. That's going to differ place to place. But the fact is, that's a lot of money.

Katharine ([20:27](#)):

It's a lot of money. And then you start to add in the health benefits of electrification also, right? We keep seeing study and new study that burning gas in our homes is not safe.

Leah ([20:39](#)):

Right. There are new studies that tell us that gas is leaking, even when the stove is turned off, and that that gas contains carcinogens, things like benzene. That's scary stuff.

Leah ([20:50](#)):

But not everybody can afford to do this, right? They want those health benefits. They want to save the money. But how can they cover those upfront costs? That's something Sarah's thinking a lot about.

Sarah ([21:01](#)):

The planet doesn't care where the emissions are coming from. The planet doesn't care if the emissions are coming from a low income person or high income person. And, we got to get rid of all those emissions. So, if only the high income people who can afford to switch to Teslas and rush out and buy the latest heat pump can electrify their homes, then we haven't solved the problem, and we're not going to save the planet. And for reasons beyond that, we also just need it to be available to everybody.

Sarah ([21:23](#)):

Everybody deserves to have a healthy home. Everybody deserves to not burn things on gas stoves that give their children asthma. So, through all manner of incentives and rebates and whatever we need to do, we need to be making sure that everybody gets the chance to do this, because it shouldn't be just for rich people. And if it is just for rich people, then we're going to lose.

Leah ([21:43](#)):

But the cool thing about the rich people who can afford it today is, if they go out and do it, there's this really interesting law in engineering. We sometimes call it the learning curve. But basically, if you're an early adopter and you have the money to get the heat pump, to get the electric vehicle, to buy the induction stove, and it's a little more expensive today, what you're doing is you're actually making it cheaper for the next person. Because, as we make more of anything, the costs tend to fall. EVs have been falling in costs over time. Heat pumps have been falling in costs. They get more innovative. People figure out in factories how to make them more efficiently, cheaper. So, you're actually making it easier for lower income people to afford these things in the future.

Leah ([22:27](#)):

And this isn't just for people who own their homes. When I talked about doing this on Twitter a couple of years ago as my New Year's resolution, a lot of people responded back, who were renters, with their creative ideas. They did things like stick a cutting board on top of their gas stove and stick an induction hot plate on top of that. That cost like 50 bucks. Or they showed me pictures of their clothes drying racks, so that they didn't have to use their gas dryer anymore. People can get quite creative and use a toaster oven, for example, rather than their gas stove.

Sarah ([23:01](#)):

So I think this is a new frontier where people just... You don't think about those things, and you also just kind of go with what is socially normative. And you see everyone around you driving internal combustion engine cars, and you see everybody putting in "fancy" gas stoves and you think, "Oh, this must be okay." And, it's also only now that the realization that the gas is so harmful is coming at us. To me, it just makes electrification the only answer.

Leah ([23:26](#)):

It's so true. Every time I watch a home renovation show and I see them put in a new gas stove, I kind of lose it. I'm like, "Why? Why, in the year of our Lord 2022, a gas stove?"

Katharine ([23:41](#)):

It's really sort of bananas, right?

Leah ([23:44](#)):

It is. I feel like every time a new gas furnace or stove is installed, a fairy dies.

Katharine ([23:50](#)):

Oh, is that what that little tick, tick, tick, tick, tick sort of noise is? That's a dead fairy?

Leah ([23:56](#)):

Yeah. I think so. Because, just think about it, these appliances are going to be operating for 10, 20, maybe 40 years from now. And we know that by 2050, we can't have any carbon pollution. So, we cannot be installing any new gas stoves today, no matter how fancy they might look on a home reno show.

Katharine ([24:16](#)):

I sat next to this couple, one evening at a bar, and they were like, "Oh, we're looking for a new home." And I was like, "Well, what's on your list for the things you're really looking for?" And they were like, "A gas stove." And I was like, "Let me tell you about induction."

Leah ([24:29](#)):

Right. Because, you know what? These appliances are actually kind of scary. They leak toxic fumes in our homes. They don't always light well. I'm sure everybody's taken

a match to a stove before. And sometimes, they even blow up our houses. This is not great stuff.

Katharine ([24:42](#)):

This is not great.

Leah ([24:44](#)):

So, Katharine, that was my big answer to the question, what can you do personally? Go electric. What did you come up with?

Katharine ([24:53](#)):

Yeah. So, if going electric is really about what solutions we can put into place, I was thinking a little bit about, what are some of those levers for change, those accelerators to move solutions forward, that we also have some control of at the individual level? And I was thinking about shifting capital, getting money out of the sources of the problem, and into fueling solutions.

Leah ([25:17](#)):

It's money, money, money, isn't it? It makes the world go round.

Katharine ([25:21](#)):

I mean, there are songs. We could sing them, but we will spare you.

Katharine ([25:27](#)):

I wanted to have a conversation with an expert on climate finance, to really find out how we can make more responsible use of our money. Marilyn Waite is a former colleague of mine at Project Drawdown. She is a civil and environmental engineer by training, and she is currently the managing director of the Climate Finance Fund, which is a philanthropic platform, an investment portfolio, that is mobilizing capital to solve the climate crisis. Marilyn's aha moment about climate came, back when she was an engineer, working on water resources in Madagascar. And the area that she was working in was hit by a months-long power outage.

Marilyn ([26:11](#)):

I was in the south of Madagascar, which is a drought-prone region. The local utility was going bankrupt. There was also problems with the local hydro system. Long story short, went for a long time without reliable electricity, and shifted my focus towards

energy challenges. And so, understanding that, wait a minute, there is this greenhouse gas constraint, and there are tons of people who need reliable, affordable, clean energy, energy that won't cause harm to the people on the planet. That was a major shift for me having that firsthand experience in Madagascar.

Marilyn ([26:52](#)):

And so, I went to do further studies in engineering for sustainable development, and then entered the energy world, starting with the nuclear energy world. I was doing technical economic studies on the water energy nexus, how we could use waste heat from nuclear power plants to drive, for example, desalination plants, all kinds of really cool things. And, what I realized in that role was that, a lot of our barriers, obstacles, were less on the engineering or project management side. Even the innovation side, we could invent so many really impactful things. It was really the finance and investment side of things.

Katharine ([27:30](#)):

If finance and investing were where the problem was, you'd better believe that that's where Marilyn was going to seek out solutions. And as she went on this journey into climate finance, she realized that our money is a big part of what's fueling the climate crisis, and has to be a part of fueling how we address it. At the individual level, that's basically two main things. The first is money sitting in banks, just your basic checking and savings accounts. The other is money and investments, and that's especially retirement funds.

Marilyn ([28:03](#)):

While we're sleeping at night, as the money is sitting in a fossil fuel bank or a deforestation bank, or a bank that is not climate-friendly, it is going out there. It is being leveraged to go and finance the next big expansion of gas infrastructure, of LNG infrastructure, of deforestation, of harmful agriculture practices that do not regenerate the soil, don't bring the carbon back into the soil. So, that is what we're working with. That is the basis.

Marilyn ([28:35](#)):

I think, what is really important to note is that, for every dollar that anyone or institution or company has in a bank account, that is being leveraged by at least 10 times. If you have, let's say, \$1 in a bank account, then the bank is able to do \$10 worth of loans. So, it is tremendously, exponentially impactful, even at small amounts.



Leah ([29:02](#)):

So you're telling me, if I had a thousand dollars in a savings account, the bank could be loaning \$10,000 to the fossil fuel industry, essentially writing them a check with my name on it? That's terrible.

Katharine ([29:16](#)):

And I have heard that they usually write, "This money is from Dr. Leah Stokes." on the check.

Leah ([29:24](#)):

Oh God, Katharine, you're torturing me here. No. Okay. So help me understand. I got to move my money here. So which are the particularly bad banks?

Katharine ([29:33](#)):

So there are four that are basically the worst offenders when it comes to funding fossil fuels. You've got JP Morgan Chase, City Group, Bank of America and Wells Fargo. And together, those four banks have loaned more than a trillion dollars to the fossil fuel industry, since the Paris Climate Accords were signed back in December of 2015.

Leah ([29:58](#)):

Wow. I guess they're not really very committed to that whole Paris Climate thing. Kind of depressing.

Katharine ([30:03](#)):

Yeah, it really doesn't seem so. And it's infuriating that these bad banks are embroiling us in their terrible irresponsible decisions. I actually really love how Bill McKibben has put this. He writes, "Depending on how much money you have, your bank account is two or three or four furnaces chugging all day. It's a trio of Escalades idling forever in the drive." And that's because, if you have \$125,000 in the bank, that money produces as much carbon in a year as the average American does.

Leah ([30:42](#)):

Wow. I mean, that's just stunning. And, it can't just be our savings accounts, right? It's got to be all the money we've got in accounts.

Katharine ([30:51](#)):

Exactly. And Marilyn explained that, the money that sits in retirement funds and other investments, it's also helping to fuel the fossil fuel industry.

Marilyn ([31:04](#)):

That's the other big equation is how our retirement savings, over 140 million Americans own stock, a lot of that is through 401(k)s or 403(b)s or other IRAs, all of these acronyms of ways of saving for retirement. And that is also being leveraged, being used, in a very direct way, for climate destruction. So, whether it's the Thrift Savings Plan, which is a federal government employee plan, even if you're a policymaker and you are making policies for climate action, if you're a federal employee, you're likely still financing fossil fuels through your own hard-earned money, through that Thrift Savings Plan from the government. Through your 401k, if you're in a normal private sector kind of employee-employer relationship, in that 401k, it's very highly likely that your retirement savings are going towards climate destruction.

Marilyn ([32:04](#)):

Also, as you sleep at night, without your permission, just by default, because by default, these retirement plans are carbon intensive, they track an index which includes fossil fuels and includes all the carbon intensive industries and activities. And so, can you imagine the stranded asset risk?

Katharine ([32:24](#)):

Totally.

Marilyn ([32:25](#)):

All of those fossil fuel assets that are currently being invested through their retirement funds, that are clearly not good bets, they're just clearly not good bets. And somehow, that is allowed to, not only proliferate, but to be the status quo.

Leah ([32:40](#)):

So these default funds, these index funds that bundle a bunch of investments together, most of them pull climate harming investments into the mix?

Katharine ([32:50](#)):

Yeah. Most do. They've got fossil fuels and other polluters. And meanwhile, in the US, the average retirement account, for someone in their 60s, holds right around

\$400,000. That means it could be producing vastly more emissions than that person just in their daily life.

Leah ([33:09](#)):

What a waste, especially when we think about how much money we need to put into climate solutions.

Katharine ([33:14](#)):

Absolutely. It is critical to get the money out of the sources of the problem, and into the things that we want and need. And that's really what Marilyn's work is all about. And I asked her, well, just how much money do we need?

Marilyn ([33:31](#)):

So we need \$3 trillion US dollars, each year between now and 2050, to solve climate change. That's a global number, so for the world. And, we're investing just under \$700 billion US dollars, so we have a bit of a gap.

Marilyn ([33:46](#)):

So there are a few studies and there are ranges of how much capital was required to invest in all of the solutions to mitigate climate change. That figure is a part of a range that the UN has calculated as well, but there have been a lot of other independent studies, I think, historically, that is focused on energy systems. So what would it take to transform energy systems from the fossil fuel incumbent status quo, to the clean energy, low carbon, zero-emitting sources?

Marilyn ([34:19](#)):

If we were just maybe even a year or a year and a half ago, I would've used maybe a slightly lower figure. I would've maybe said 1.5, 1.72. But, when we do include the whole greenhouse gas inventory, in terms of, we need to take out that 55 gigatons of carbon that we're putting in the atmosphere every year, so that annual number needs to go down to a net zero, when you think about collectively what it takes to do that, that's beyond energy, right? It includes all of the real economy sectors.

Leah ([34:57](#)):

\$3 trillion a year, that's about three quarters of the American budget, what the federal government spends every year. It's a big number, but it could be doable.

Katharine ([35:07](#)):

Of course, you know how big the federal budget is, Leah. You're such a lovely little nerd.

Leah ([35:13](#)):

I try. I try.

Katharine ([35:15](#)):

To put that \$3 trillion in context in a slightly different way, the annual global military budget, so all the money we spend on institutional violence and death globally, it reached \$2 trillion for the first time in 2022. So, not that far off.

Leah ([35:34](#)):

No. I feel like just a little bit more money to protect the planet where we call home, that seems doable.

Katharine ([35:43](#)):

Every day, Marilyn works with these almost unimaginably large numbers, and I wanted to know how she wraps her head around them. And, what gives her a sense that these numbers are doable? And in part, it turns out, it's us.

Marilyn ([35:59](#)):

The fact that we, as people, actually have a significant role to play, we actually have significant collective capital. So we're talking about almost \$30 trillion, collectively in the Chinese bank accounts, and in the US, \$13 trillion, in Europe, \$15 trillion.

Leah ([36:18](#)):

So there's \$13 trillion in our collective bank accounts in this country. Wow. That's a lot of money power.

Katharine ([36:24](#)):

It is a lot of money power. And, truth be told, we have the money to solve the problem. It's just that the money's not in the right place. And, like Marilyn said earlier, for every dollar you put in the bank, the bank can loan \$10 for new fossil fuel infrastructure. But imagine if we took that 10X power and turned it on its head, and

every one of those dollars got leveraged for decarbonization and regeneration instead. It would be incredibly powerful.

Leah ([36:58](#)):

This money could really become a force for good. And I love that idea that, wow, we're busy electrifying our homes and getting climate leaders elected or just chilling, I mean, sometimes we just chill, that our money can be out there doing the climate good. I love that.

Katharine ([37:14](#)):

Exactly, Leah Stokes.

Leah ([37:17](#)):

All right, girl. Well, I'm revved up. How do we do it? Give me the deets.

Katharine ([37:22](#)):

Well, I am glad you asked. So, let's start with Marilyn's advice on that first piece of banking. Luckily, we are not stuck with those big, bad banks.

Marilyn ([37:34](#)):

There are lots of alternatives. So, in the United States, there are over 10,000 banks and credit unions combined. And, the good news is that, there is a nice overlap between fossil fuel free, deforestation free, and socially just, and responsible. So the climate-friendly banks are also tend to be community-focused, community-driven, investing in communities, not only doing no harm, but actively doing good.

Marilyn ([38:04](#)):

The FDIC ensures the deposits in the banks, and the NCUA ensures the deposits in the credit union. So, it's all publicly backed and insured. So, really, this is no brainer. As you sleep, you can actually do good. Every dollar that's in that clean energy credit union, Beneficial State Bank or Amalgamated Bank or Sunrise Banks, or Hope Credit Union, all of these institutions, every dollar that's sitting there at night is being leveraged to make these affordable loans in the climate-friendly economy and in the socially just economy.

Katharine ([38:37](#)):

So it's really just a matter of picking from a bunch of good, safe options. Marilyn mentioned a few, and I've also personally had a really good experience with a savings account at Atmos Bank.

Leah ([38:49](#)):

Got it. Okay. What about the retirement side? Are there alternatives there?

Katharine ([38:54](#)):

There indeed are. And, one example that Marilyn shared is called Sphere. And it is a fossil-free index fund, that is designed specifically for the common retirement vehicle that we see all over the place, which is 401(k)s.

Marilyn ([39:11](#)):

There is Sphere, so oursphere.org. They have both an index and mutual fund that's available, and the mutual funds are really kind of the go to retirement account product. And they are currently fossil fuel free, but they are in the process of actually adding other elements of ESG as well. But at least you know that it's at a very minimum. You're not sending your hard earned money to the number one cause of climate change. When you compare the Sphere index to the S&P500, which includes fossil fuels, the Sphere, it outperforms. You can see it online. You can see the graph, it outperforms. When you backtrack it 10 years, it outperforms. When you forward track it, it outperforms.

Leah ([39:56](#)):

That's amazing. And, it's so commonly what we see, that these products like Sphere and others, they do better than the general stock market. So it's not just about doing the right thing for the planet, it's also smart financially.

Katharine ([40:10](#)):

And I've certainly seen the same thing, personally, in shifting my own retirement accounts out of fossil fuel containing index funds, and into what we could call kind of climate friendly investments.

Katharine ([40:24](#)):

And here's the other thing I think is great, Leah. Moving our money takes a bit of legwork. We've got to find the right option for us. Do we care about being able to go to a physical branch in our neighborhood or not? We may need to fill out some

paperwork, fiddle with digital accounts. But at the end of the day, beyond the time it takes to do it, there's not an upfront cost to this. This is an incredibly powerful lever for climate change, in the best way. And, we don't have to spend anything to do it.

Leah ([40:57](#)):

Well, I do like that. It doesn't cost money. But, I think you're right. There is still the time element. That is a significant barrier. Are there other challenges that folks might come across when they try to move their money?

Katharine ([41:08](#)):

Yep. There's the time piece. There's a bit of the sifting through information piece. But, if your workplace offers a retirement fund, the biggest hurdle you may face is a lack of fossil fuel free options. Marilyn said, that's a speed bump, but it's not a roadblock. And, it actually might be something to take up with your employer.

Marilyn ([41:30](#)):

And so, I think, there's just no excuse, really, for a plan provider to not have these be the default options for their employees. And what employees can do, so kind of that profession/personal intersection, is ask that of your benefits manager. If you don't have any climate friendly options in your retirement plan, ask for it. Demand it. All of the data is there to actually prove that you're in a better position.

Katharine ([41:59](#)):

And if your employer needs some convincing, remind them that this is actually an opportunity to do well by their employees, maybe even stand out for offering something that's in line with their values. And, if your employer just simply won't budge, well, you can move your retirement money after you leave the job. I have done that in the last few years, taking an old 401(k) at Vanguard, which is just a hot mess on fossil fuels, and moving it to a retirement account with a group called Earth Equity Advisors.

Katharine ([42:30](#)):

And if you're looking for options on this investing side of things, Marilyn pointed us toward a group called Carbon Collective. It's an online investment advisor that is entirely devoted to addressing climate change, and yet another option to ensure that your money is building a better future and not bankrolling the status quo. And in fact, Marilyn has curated an amazing and generous list of sustainable banking and

investing options that lives on her website, and she updates it all the time. You can find it at [marilynwaite.com](http://marilynwaite.com).

Marilyn ([43:04](#)):

People need to know, this cannot be just for just an elite or just the in the know. This is the major lever to solving climate change, because it is the engine behind everything. If you cut off the money, or if you cut on the money, or open up the tap, that's how it works for everything. And so, what would it take to rapidly get this under control and create this livable planet for everyone? It goes back to the money. It gets back to the financing and the investing. And, it's something that everyone has a role in, no matter what income level. There's a strong correlation between doing good for the planet and doing good for people.

Leah ([43:51](#)):

Well, these are all fantastic resources, and we're going to be linking all of them in our show notes. And I just want to remind everybody that we're really asking you to take some personal action today. It's about electrifying your home. It's about moving your money. And we're going to help you do it, but then you got to actually do it.

Katharine ([44:08](#)):

So what do you think, Leah? Are you in for moving your money as a way to take action in the personal sphere?

Leah ([44:14](#)):

Oh, you mean I have to actually do it too? Oh. Oh, dang. Yes. Yes, Katharine. I will do it. I am ready. Actually, I haven't done this yet. I'm going to be honest. We're not all perfect here in the movement space. We're all works in progress. And yes, by the end of the year, I will have moved my money. That is my commitment.

Katharine ([44:34](#)):

I love it. And I am going to talk to my partner tonight about maybe just building up a little bit of an electrification fund, so that we can add to our already electric stove.

Leah ([44:46](#)):

So, listeners, those are our two big ideas that we want to leave you with today. What can you do as an individual? Electrify your life and move your money.



Leah ([44:55](#)):

But like we said, this is really about a framework for answering the question. And for that, I want to go back to Sarah, who gave me a big idea called upstream it.

Sarah ([45:05](#)):

Your personal actions can just be so much bigger than you think they can be, and that's why it's not about individual versus systemic change. You, as a person, taking an individual action can still have huge, huge, huge effect. And, I poached the word upstream from this amazing prof at UVA called Leidy Klotz, who works at the intersection of engineering, systems design and climate, and just talking about how, instead of engineering for every single person to remember to turn off the light switch when they walk in the building, teach the engineers, design the building, so that these things are default.

Sarah ([45:40](#)):

And, the one example I always use, I used to bring my takeout container, I still do, every time I would go get takeout. Great that I want to bring my container to the sushi place, wait while they put it all in, have them be all confused by why this woman needs to get her cucumber rolls in this annoying thing, and compromise their workflow and make everything go slower. And that was because Toronto doesn't recycle black plastic. The upstream intervention of that is me, instead of spending all that time doing that, calling the city of Toronto and being like, "Can you please recycle black plastic?" Or, even lesser than that, asking the restaurant, "Can you please switch to better containers that are compostable?" There's always an upstream thing that I think doesn't actually take that much longer than the individual action itself, and it's still an individual action. It's still just you doing that thing. But just letting your mind go to those places. It's like, "Oh, that actually solved that problem for a hundred other people."

Sarah ([46:29](#)):

And so, I think that's what it is. I'll never stop doing the little things like bringing my coffee mug, because you do those things for the reinforcing personal, this is the kind of person I am and this has social contagion effects, and this shows the people at that coffee shop that customers care about these things. So there are plentiful reasons why you do things beyond the minor emissions reductions that not taking a coffee cup does, but then thinking through what the higher order action of that thing

is, is always just go there. So that's why those actions are like, "Call your elected official. Get them to make the change for you."

Leah ([47:04](#)):

Yeah. Like maybe ban single use plastic, for example.

Sarah ([47:07](#)):

There you go. There you go. Call a couple of people to ban single use plastics, and then it's like, boom, problem solved.

Leah ([47:13](#)):

The only thing I will say is, I think a lot of those upstream changes aren't fundamentally individual changes. There are things you have to do with other people, in that, if you want to ban single use plastic, which is great, I love that, it's unlikely you as a single person will be able to do that. You probably have to join an organization, meet up with other people.

Leah ([47:35](#)):

Now, we're not necessarily talking like a huge amount of people. This quotation, "Never doubt that a small group of committed people could change the world. It's the only thing that ever has." But, having that support is, I think, important as you get upstream, because it becomes less individual, I think, and more organizational as you get higher up the food chain.

Sarah ([47:56](#)):

So, I'm a big behavioral science nerd. And, we think a lot about decision fatigue and choice overload, and just the burdens heaped onto the individual when it comes to all these things. We know, behaviorally, we can't remember to do this thing every day. That's just not how humans are. We're not rational creatures. We don't have enough time. We'll never remember to do everything every single day, and nor should we. We should engineer and design systems that work for people that are zero carbon in the first place. And that's where we're headed.

Katharine ([48:26](#)):

I'm all about the upstream, Leah. I really, really like this, because, as it stands, our society is so anti-climate, that it's on the individual, way too much of the time, to be making good choices. You've got to go out and select that induction stove or the

electric car. You've got to bring your reusable takeout container, as Sarah was saying. You've got to figure out whether your city can recycle the plastic that probably doesn't even get recycled. All that stuff, it's just so much.

Leah ([48:55](#)):

That's right. A lot of us are pretty stressed out and pretty busy. So, what we need to do is make the climate friendly option the default option. Make it easier for people, so that they don't have to decide all the time.

Katharine ([49:08](#)):

I would really love to be doing less deciding.

Katharine ([49:13](#)):

Marilyn also talked a bit about what she's learned about humans as social creatures, and, in fact, how we can reach beyond our own actions by helping to make them a little bit contagious.

Marilyn ([49:26](#)):

And so, each person can be that influencer in speaking with their colleagues. We mentioned mobilizing internally as employees, to drive changes in employee retirement benefits, for example. It can be done in the household, not just immediate household, but extended with family, of course, with friends, also in ones like professional circle. Wherever it is, I mean, climate change and finance are something that intersect almost everywhere and everything. There's a lot more capital being poured into keeping us entrenched in this carpet intensive economy, than there is in helping us get out of it.

Marilyn ([50:08](#)):

And so, the marketing dollars, the communication dollars are just not as strong on the climate friendly side. And so, it is critical to make the word of mouth work and to use the resources we have to leverage and amplify the voices and the messages. "Oh, did you hear about this new bank, or this new FinTech company, or this new mutual fund or whatever for retirement, and they're doing this cool thing?" That is how the word is going to spread, because there just isn't the same amount of capital being poured into the marketing communications. And the climate friendly economy and finance doesn't have the decades of inertia and incumbency that the other side does. So, it is critical.

Katharine ([50:55](#)):

So so well said. All right. The last question I want to ask you is, when you get the question from people, "What can I do?", how do you answer that question?

Marilyn ([51:07](#)):

So, because banking is so universal, I say, bank with the climate friendly bank. Open up a climate friendly bank account. Have your money spend the night there, because I know, behaviorally, what the challenges are. And, what's great about this is that, an individual can make one decision one time, and that is to open up that climate friendly bank account and bank with that bank. That's a one-time decision that can last forever. And it's the gift that keeps on giving.

Leah ([51:36](#)):

What Marilyn and Sarah are really saying is that, acting as an individual, you start to feel part of the climate movement, part of something bigger. And that's when our individual actions really begin to have impact.

Katharine ([51:50](#)):

Leah, this reminds me of a very common mistake that people make about All We Can Save.

Leah ([51:55](#)):

Oh, I know where this is going.

Katharine ([51:58](#)):

Yeah. I think you've heard this some too, Leah. People constantly get the book's name wrong. They swap out the pronoun, so they're always saying All You Can Save. Like, "Oh, that's something for you, Leah. You're going to work on that, and you're going to do it alone, and I'm not going to be part of it." And I get it. It's an honest mistake, you, we, whatever. But I think it's actually kind of telling. We might even say that it's the we in All We Can Save that actually matters the most.

Katharine ([52:30](#)):

So, to the we, one of the places where we are definitely in collaboration, linking arms with others, it's at work, with our coworkers, our managers, our employees, our partners.

Leah ([52:43](#)):

And we leave a big impact on the world through whatever work we do. We spend so much of our lives at our jobs. We do it to pay rent, sure, feed our families, but also to find fulfillment and leave behind a legacy.

Katharine ([52:55](#)):

And with all of that in mind, we want to shed light on the potential for climate action in the workplace. So that's what we'll take up in our next episode, the continuation of this three-part mini series. We'll turn from the realm of the personal, to the realm of the professional.

Leah ([53:12](#)):

I'm excited.

Katharine ([53:15](#)):

But in the meantime, electrify your homes.

Leah ([53:18](#)):

Move your money.

Katharine ([53:20](#)):

Paddle upstream. Use your influence. Make waves.

Leah ([53:23](#)):

And make connections, because together, we're going to make a better future.

Leah ([53:32](#)):

A Matter of Degrees is co-hosted by me, Dr. Leah Stokes.

Katharine ([53:36](#)):

And me, Dr. Katharine Wilkinson.

Leah ([53:38](#)):

We are a production made in partnership with FRQNCY Media, The 2035 Initiative at UC Santa Barbara, and The All We Can Save Project.

Katharine ([53:46](#)):

Thanks to our funders and supporters who make the show possible, Energy Foundation, NorthLight Foundation, McKnight Foundation, Bloomberg Philanthropies and the 11th Hour Project.

Leah ([53:56](#)):

If you're digging the show, please hop on Apple Podcast or Spotify, and give us a five-star rating or leave us a review.

Katharine ([54:04](#)):

Jordan Rizzieri is our producer. Catherine Devine is our associate producer. Enna Garkusha is our supervising producer, and Michelle Khouri is our executive producer.

Leah ([54:15](#)):

William Cagle and Ellie Katz wrote the script, and Isabel Moncloa Daly and Becca Godwin were script editors. Matthew Ernest Filler is our lead audio engineer, mixer and sound designer, with dialogue editing and additional mixing by Claire Bidigare-Curtis.

Katharine ([54:31](#)):

Rose Wong designed our new show art, and Sean Marquand composed our theme song. Additional music came from Blue Dot Sessions.

Leah ([54:38](#)):

Research, fact checking and production support by Amarachi Metu and Daniela Schulman.

Katharine ([54:43](#)):

Come back soon, as we tell more stories for the climate curious.

Sarah ([54:53](#)):

Exactly, exactly. Be the Kim Kardashian in your circle of friends and-

Leah ([54:58](#)):

Be a Kim Kardashian of heat pumps is what you're trying to say.

This transcript was exported on Sep 08, 2022 - view latest version [here](#).

Sarah ([55:01](#)):

Be the Kim Kardashian, yeah, and then I'll get Kim Kardashian to do heat pumps too. Yes. But yeah, just be the ripple maker and watch as everybody electrifies around you.