

Bill McKibben (00:03):

This is not the Whole Foods of energy, nice but pricey. This is the Costco of power. Cheap, available in bulk on the shelf, ready to go. If we can get that message through, then we win.

Dr. Leah Stokes (00:22):

I am Dr. Leah Stokes.

Dr. Katharine Wilkinson (00:23):

And I'm Dr. Katharine Wilkinson. Today on A Matter of Degrees, we have got a very special interview for y'all.

Dr. Leah Stokes (00:33):

Yes, we're going right back to the beginning of our podcast with Bill McKibben, who was the first guest on our show, and he's really the original, the OG climate activist.

Dr. Katharine Wilkinson (00:44):

As Bill says in this interview, he wrote a book about climate change way back in the eighties. It was the first one, and would that we had done a better job of listening and acting.

Dr. Leah Stokes (00:57):

So by now, Bill has written a lot of books. I think he's up to 20 and his most recent one is called, Here Comes The Sun, A Last Chance For the Climate and a Fresh Chance For Civilization. It came out on August 19th, and it's really about the bright future ahead of us.

Dr. Katharine Wilkinson (01:14):

Bill is also organizing Sunday. This is the first national day of action to demand large scale deployment of clean energy. That clean energy is already here. It's in hand. It's ready to go big, and it's an invitation for all of us to join in on Sunday and beyond to make that happen.

Dr. Leah Stokes (01:35):

So Sunday is kind of like Earth Day. It's taking place on September 21st. If you want to get involved, you can go to sunday.earth and you're going to hear a lot more about it from Bill McKibben himself in this interview.

Dr. Katharine Wilkinson (01:51):

Solar, it's something like magic. Would you just start by telling us how the technology actually works and why it's so incredible?

Bill McKibben (02:02):

Yeah, it is kind of like magic and it's a magic that we didn't possess until 1954 when at Bell Labs in New Jersey, the first solar cell was introduced. Basically what it allows us to do is take the energy that's being produced in millions of nuclear reactions going on in the sun, all that conversion of hydrogen into helium and take it and turn it directly into electricity through this solar cell. Now of course, the magic at first came at a very stiff price. This was the most expensive energy on earth. The only thing you could use it for really was satellites because there wasn't much other choice. But over time, and with the great assist

from both activists and engineers, its price has come steadily, steadily, steadily down, and now all of a sudden, and this is the magic part, really, it's the cheapest form of energy on earth.

(03:02):

We live on a planet where the most inexpensive way to produce the power that we need is to point a sheet of glass at the sun, and that's only happened in the last three or four years, but it's an epochal moment in our history is a species. It means that we can leave behind our old and troubled magic combustion, which we've been using for 700,000 years, but no longer really need, and instead pretty much directly translate the power of the sun, which already hospitably provides us with light and with warmth and with photosynthesis, and now is willing to give us all the direct energy we could ever need. So all in all, remarkable change for our species is big, I think as learning to burn fossil fuel in the first place was 200 years ago.

Dr. Katharine Wilkinson (03:58):

If that was the power source of the industrial revolution, what should this era be called?

Bill McKibben (04:06):

That's a good question. We're having this big Sun Day coming up in September to celebrate this. We've said, oh, every day is Earth Day. Every day is Sunday. That's the point. The sun unfailingly rises above the horizon. It's the most charismatic object in our universe, even if it's the one that we can't look at directly. It's the single most important thing in our lives, our physical lives, and now it can take on this even bigger dimension

Dr. Katharine Wilkinson (04:39):

And 70 years on from the Bell Labs breakthroughs, what's the current state of solar energy today in the US but also, also globally?

Bill McKibben (04:52):

It's the fastest growing energy source in the world. In fact, the fastest growing energy source in the history of the world, and it's exploding. It took us all the years from 1954 to 2022 to get the first terawatt installed. The second terawatt came by 2024. The third will be by the end of this year. The growth is explosive. We don't see it necessarily quite as much because so much of it is happening in China. In May, the Chinese were installing three gigawatts of solar, the equivalent of three coal-fired power plants. They're installing that much every day in terms of solar panels, but we can sense it in this country too. California is the best example. California has passed some kind of tipping point in the last year or so. Now, most days, California produces more than a hundred percent of its electricity from renewables for long stretches of the day, which means that at night when the sun goes down, often the biggest source of supply to the grid in California is batteries that have been soaking up excess sunshine all afternoon.

(05:59):

But the real bottom line there is California is using 44% less natural gas to produce electricity this summer than it did two years ago. That's a big number. I've been working on climate change for four decades. I wrote the first book about it back in the 1980s. That's the most optimistic statistic I've come across in that time, that the fourth largest economy in the world, California, has managed in two years to cut the amount of natural gas that it's using to produce electricity almost in half gives you a sense of how quickly it's now possible to move. I will add that if I know that statistic, then Exxon and Chevron know it too, and that explains, I think more than anything else, why they've spent unprecedented amounts of money gaming our political system to try desperately to slow down this transition before it gets any more ahead of steam.

Dr. Katharine Wilkinson (07:00):

Shaking in their oily little boots, if you will.

Bill McKibben (07:03):

Well, in part because they're getting to watch it close up. California is no longer the fastest growing renewable energy state in the country. That distinction belongs to Texas, which is also the hydrocarbon hub of the entire world. The oil industry tried to put the brakes on Texas renewables this spring in the legislature. They had a bunch of proposed laws including one that was basically just DEI for natural gas. It said that if you put up five megawatts of solar, you had to put up five megawatts of natural gas too. People from around Texas, rural Texas appeared in Austin saying, do not do this. This is how we fund our school system. Now, this is what pays for the old folks home in our rural county, and the legislature backed off didn't do those things. Washington's obviously done them, and that'll cause a lot of damage. But to get back to your original question, it's not slowing the pace in the rest of the world. If anything, that pace is picking up and will pick up. As people begin to realize in countries around the world that the last country they want to depend on for energy exports is the now utterly fickle and bizarre United States. If you're getting your LNG from us, you're just setting yourself up for Donald Trump to extort something out of you. So better be building your solar farms as fast as you can.

Dr. Katharine Wilkinson (08:35):

Absolutely, pardon the pun, but you can sort of see these bright spots of solar that are emerging around the planet and if the bright spots become, not spots, but sort of just brightness everywhere, what does our society begin to look like if it is running on the sun and not on fossil fuels?

Bill McKibben (08:56):

Well, that's a very good question. So in the first place, yes, you really can see those bright spots emerging. You can map China's trade routes and influenced by where solar panels are now popping up in huge quantities, Africa, Pakistan, places like that. But as this spreads across the world, look, the reason that we have to do it is because if we don't, we're going to melt the planet and that would be unfortunate.

Dr. Leah Stokes (09:24):

That's an understatement Bill, by the way.

Dr. Katharine Wilkinson (09:26):

As a pretty committed resident of earth.

Bill McKibben (09:29):

But as we do it, we're going to discover lots of other useful things too. So combustion is not only wrecking the climate, it kills 9 million people on this planet a year about one death in five with people who have to breathe the byproducts of that fossil fuel combustion. So that'd be nice to not do that. There are many drivers of the grotesque inequality that marks our world now, but one of the original ones and one of the most important, maybe the most important is the fact that we run our world at the moment on a resource, fossil fuel, that's only available in a few scattered places. The people who control those places end up with way too much power. I mean, in our country it was the Koch brothers, our biggest oil and gas barons, and they used their winnings to systematically degrade our democracy over decades. In Russia and Europe, it's Vladimir Putin who's using his bonanza to launch land wars in Europe in the 21st century. We are capable now quickly of building a world that runs on resources that are available everywhere to everyone, and by their nature can't really be hoarded or held in reserve. Even human beings are going to

have a hard time figuring out how to fight wars over sunshine. So I think the world on the other side of this is not just a little cooler than it would otherwise be, but a little cooler.

Dr. Leah Stokes ([11:06](#)):

I think basically what Bill just said is that it's not the oligarchy. It's the oil-garchy that controls the world. These dictators good times. So if we just get rid of the oil, we get rid of the oil-garchy, I guess so.

Bill McKibben ([11:20](#)):

I mean, it's not like liberation absolutely follows. The Chinese managed to combine repression and solar power in their own particular ways and things, but it gives us a chance. It's a different world.

Dr. Katharine Wilkinson ([11:34](#)):

And all that carbon gets to avoid disinterment and just hang out below ground. So another beneficiary.

Bill McKibben ([11:43](#)):

Down there where the good Lord stored it safely away.

Dr. Katharine Wilkinson ([11:46](#)):

Down in some kind of underground speakeasy. You know what I mean?

Bill McKibben ([11:51](#)):

We're moving to energy from heaven not from hell, and that's a beautiful thing to contemplate.

Dr. Leah Stokes ([12:00](#)):

So Bill, of course, Sun Day is not just about solar panels, right? The cool thing is that they can power so much more of our lives. With electric vehicles and heat pumps, and we can even store the sun in batteries. And so when you talk about here comes the sun or the big event coming up in September, Sun Day, you're not just talking about solar panels, right? You're talking about all the clean electric machines we can use.

Bill McKibben ([12:26](#)):

People are busily planning EV parades and lots and lots of people will be opening their homes to their neighbors to show them how their heat pumps work. To kind of demystify all of this, there's going to be people cooking big feasts for the community on induction cooktops powered straight off the solar panel or on solar cookers straight up. One of the things I'm looking forward to are all the people who are doing cool things on e-bikes. We talk about EVs all the time and they're great, but I have a feeling that the e-bike may turn out to be the even more remarkable invention of our time, that we've somehow come up with a bike that doesn't have hills. It is a just spectacular innovation and you can run.

Dr. Leah Stokes ([13:15](#)):

I've never understood why cyclists intentionally climb hills. I couldn't agree more. I see these people in Santa Barbara doing the Lance Armstrong route and I'm like, why? Why not have an e-bike? I agree.

Bill McKibben ([13:26](#)):

There's a certain amount of puritan in me that enjoys the occasion, but it's just a wonderful idea that you can be out there and the energy costs, I mean you can get, I think the last I saw was a penny's worth of electricity to get you about five miles on a standard. The numbers are just amazing.

Dr. Leah Stokes ([13:48](#)):

Well, you will be surprised to hear that I stayed up late last night reading an article about how the e-bike revolution is affecting young people in America because it isn't just good for the planet, it's also really good for kids' mental health. In my community, I see people out there all the time in these sort of tween e-bike gangs roving around the city and it's getting them off their phones. It's getting them into the world outside with their friends. It's really helping people, I think, have a different way to be a young person, have independence, have fun, especially with how much the phones have impacted our lives. So I think e-bikes are really great for mental health too, and especially for young people.

Bill McKibben ([14:31](#)):

That fits with everything that I've been seeing too. We've been very committed to the idea that we lived in the best of all possible worlds, and people get very angry when you suggest changing, but the truth is that all these things we're talking about are better than the things that they replace. The EV is just a better car on any grounds. I mean, if what you like to do is go really fast, then it's better for that too. The heat pump is a better alternative than the furnace. It delivers both heat and cold and does it elegantly and inexpensively. I'm the cook in our house, so the induction cooktop is a great, I can't tell you how it works. Magnet.

Dr. Leah Stokes ([15:15](#)):

Magnets magic, I believe. Yeah.

Bill McKibben ([15:18](#)):

It boils water twice as fast as the open campfire in your kitchen with these small side benefit of not giving your kids asthma along the way. So we're talking about a world that in all these ways works better and that's why it's fun to be talking about Sun Day because everything else in our world is going straight to hell right at the moment. We're governed by idiots and we're watching cruelty on a just incredible scale play out in so many ways and things, but I think that's why as we're going into Sun Day, people are responding to the idea that in the midst of a lot of big bad things happening, that there's one big good thing happening on planet earth right now.

Dr. Leah Stokes ([16:05](#)):

Well, in our last episode we talked about some of the bad things, which is that these federal credits that are helping people get solar on their roof and EVs in their driveway and heat pumps in their home, they're going to go away in the next few months, and so this is also a big opportunity for people to act now to move fast and show their neighbors what it's like to have solar panels open up their homes. That's really what Sun Day's all about. But can you talk about what you think some of the impacts are going to be of these expiring credits and how important it is for people to go get that heat pump before the end of the year?

Bill McKibben ([16:38](#)):

Yep. You got till New Year's Eve to get this stuff done, get at it and you'll get the credit that should have been there for a decade, so people are going to have to rush and that's not good, but it is one of the things that we're doing at Sun Day is spreading that word and helping people make the leap right now. The other thing we're doing, one of the other things we're doing is trying at the state and local level where we can

still work politically to change some of the rules around, especially permitting, so that going forward we'll still have a solar industry of some kind. In Australia, it costs a third what it does in this country to put solar on your roof. So they've almost completely done away with subsidies in Australia. They don't need them anymore because they've managed to make the process cheap enough that everybody's doing it. As you know in this country,

(17:31):

one factor there is the fact that we have 10,000 different jurisdictions each with their own set of rules that make it cumbersome to get the approvals necessary to do this stuff. Takes months and months sometimes, whereas literally in Australia or much of the EU, you can make a phone call on Monday and by Friday that solar system is up on your roof pouring power into the grid or into your batteries. So we're going to have to, given that we're that we're not going to have power in Washington, at least for the next few years, we're going to have to do a lot of things at the state and local level too now.

Dr. Leah Stokes (18:09):

Yeah, there's been this huge revolution in Germany. Obviously Germany was really important in the global diffusion of solar, but these days what they're really known for is putting up these balcony solar arrays, right, that are just kind of DIY, stick it outside, get some solar, and you can think about the same thing for carports. You could have an EV underneath a solar carport and they should be really easy to put up. But in the United States, as you talked about, there's a lot of red tape. There's a real patchwork of approvals. So what can people do in the Sun Day network to help change that and make progress still happen even with Trump in Washington?

Bill McKibben (18:47):

That's one of the reasons that we're mobilizing. At Sun Day and at Third Act where I do a lot of my organizing with old people like me, we've got tens of thousands of volunteers working with their state legislators and their local public estate, public utility commissions and their local city halls to change these rules, and it's not an impossible task. The balcony solar story is a beautiful one. There's a million and a half Germans who hang these things from the railings of their apartment. The only place in America where it's legal, and this is as of two months ago, is that progressive bastion, Utah, where the state legislature goaded on by a libertarian state Senator unanimously passed a rule saying, yeah, let Utahns hook these things up on rooftop solar stuff. There are now three states, California, Maryland, and most recently New Jersey that have mandated the use of this solar app for automated permitting for solar contractors, which speeds up the process quite a bit or can.

(19:52):

So there are things that we can and are pushing to get done, but it's going to take political organizing to do it, and organizing and activism have always gone hand in hand with progress here. You were talking about Germany, and it really is the powerful story. In the late 1990s, early 2000s, the Green Party that held the balance of power in Germany's parliamentary system, and they used that leverage to demand the first of these feed-in tariffs. Germany paid a lot of money because solar panels were expensive in those days, and that money was the demand that allowed the Chinese to get good at building these things inexpensively. So it was a real combination of activism and engineering that got us where we needed to go, and now we need that again.

Dr. Katharine Wilkinson (20:48):

There's so many dimensions to this whole story of solar and to what it will take to turn bright spots into brightness everywhere and it's policy, it's tech, it's science, it's finance, it's organizing, but it's also culture and even spiritual aspects as well. And I love your description about the sun as the single most powerful charismatic object in the natural world with all respect to the moon, who just hangs out and reflects back

the sun, which is actually a pretty cool gig. You know what I mean? But would you speak a little bit to, I don't know, a powerful anecdote or two about how sun has manifested in kind of cultural mythologies or appreciations?

Bill McKibben ([21:34](#)):

We could start ancient or modern? I called this new book of mine. I've borrowed the title from George Harrison. As it turns out, Here Comes The Sun is by far the most streamed song in the Beatles massive catalog. Not a Lennon McCartney tune a George Harrison one, and I think it's because of its gentle and optimistic nature. As far as we can go back in human culture, humans have been tracking the way the sun moves across the horizon, building things like Stonehenge that observe as solar calendars of one kind or another. We've always understood at the deepest level the importance even to our mood. There isn't a human being who doesn't grin when the sun comes out from behind the clouds and hits their shoulders. The spring before last in Vermont, the eclipse that came across the country had a long period of totality in Vermont, and so people crowded into the state.

([22:37](#)):

It was our biggest traffic jams ever, but very congenial traffic jams because everyone was in a good mood. I watched it from the quad at Middlebury College where I teach some, and there were 1500 students out there and they put down their phones and watched this incredible spectacle. I'm particularly taken by the fact that St. Francis of Assisi wrote that beautiful canticle poem that begins with an ode to brother sun, and it was the first words of that Lato C that his namesake Pope Francis used as the title for really the most important piece of writing this century about the world and us in it is incredible in 2015 and cyclical on climate change. And now very moved by the fact that his successor Leo, the first American Pope said last week that the Vatican will officially become the first fully solar powered nation state in the world. They've broken ground on a large solar farm just outside of Rome that will supply enough power for the Vatican and apparently quite a bit of leftover for the community, and they're going to intersperse the rows of solar panels with rows of crops of various kinds. That movement towards what we're calling clumsily agrovoltatics is one of the most beautiful parts of this whole thing. In a world that's overheating, shade is a precious commodity now too.

Dr. Leah Stokes ([24:10](#)):

Even for animals, cows and chickens and goats and everybody.

Bill McKibben ([24:14](#)):

Leah, the one thing apparently that we are not supposed to put in a solar farm is a goat. They eat the cables and jumping up on the panels.

Dr. Leah Stokes ([24:24](#)):

Okay, I take back the goats. The goats are the only you get with the grounded animals.

Bill McKibben ([24:31](#)):

But check this out, the big trial in France last year found that you could grow and you could increase yield grape yields 60% across a number of varieties if you were growing them in a solar field. So tell your neighbors up there in Napa and Sonoma, there's no end to the beauty that comes with all of this. And truthfully, I think that people are going to need to and will develop a slightly new aesthetic. I really think that a windmill is one of the most beautiful things on the planet. I can sit and watch them on the horizon all day, and I think we'll need to develop that new aesthetic. At the moment, people consider a cornfield to be a kind of natural thing, but in fact, a cornfield in our country is just a biological desert. They're inefficient solar collectors that you have to pour nitrogen and phosphorus on to make them work, and then

you have to spray them with pesticides and herbicides. If we can take some of that land, half of our corn crop just grows for growing gasoline anyway and use it instead for solar farms with farms in between the rows. I mean, that's a beautiful vision. As I said before, the reason that we have to do this is because we're in a deep climate crisis.

Dr. Katharine Wilkinson ([25:51](#)):

Yeah.

Bill McKibben ([25:51](#)):

The reason that we get to enjoy it along the way is that it brings so many other things. We've talked about all the good parts here. The hard part here is that we have to do it fast, and there are days when I know a little more climate science than I should, and the speed with which we're managing to wreck the earth is roughly equivalent to the speed with which we're managing to put up solar panels. And I don't know whether we can make those lines cross or not. That's the challenge to do this beautiful thing faster than mere economics will drive us to do it.

Dr. Katharine Wilkinson ([26:27](#)):

We're sort of neck and neck down the home stretch is kind of what it feels like.

Bill McKibben ([26:31](#)):

There is a Hollywood kind of script playing out here. It was June 2023 was the month that scientists, we had the sudden spike in temperatures. What scientists

Dr. Leah Stokes ([26:43](#)):

Hottest three days in a row, yeah.

Bill McKibben ([26:45](#)):

Three days since the last 125,000 years. And every month since then has been at this same aggressively elevated temperature, but June 2023 was also the same month for the first time humans were putting up a gigawatts worth of solar a day. So these things are happening at exactly the same time.

Dr. Leah Stokes ([27:04](#)):

But I would prefer not to be living in the Hollywood script version. There's too much suspense and drama. I don't know if we're going to win, if it's going to be a tragedy or comedy. I think I just would like a boring one.

Dr. Katharine Wilkinson ([27:16](#)):

It's fine for the films, but it's not really great for real life, I'll say. But here we are.

Bill McKibben ([27:21](#)):

We're cutting it a little close, but I got to say, I have to restrain myself on occasion from saying, oh, if only you listened to me when. We actually had good warning about all of this a long time ago.

Dr. Katharine Wilkinson ([27:32](#)):

Almost really Leah's and my entire lifetimes, I'm a little bit older than Leah, but there's been decades to get after this. I may just be wildly mixing metaphors here Bill, but when we think about what can add

wind into the sails of moving this forward faster, it strikes me that there are the things like the exponential improvements in the economics of this technology, but also the intangibles, like how do we actually get our neighbors across the country to understand that this isn't just like, oh, it's great. It's like blockbuster to Netflix. It's just better. It's actually highly aligned with American values of freedom and possibility. And yet...

Bill McKibben ([28:19](#)):

So this is actually, Katharine, one of the really interesting things here. When we do polling about solar power, it pulls remarkably well across ideological and partisan lines. One of the very few things, solar power and opposition to pedophiles seem to be the two things that we find rolling across partisan divisions these days. And both of those are good news. I think that sometimes they're for very different reasons. I've lived all my life in rural America, evenly split between Red America and a more Purple America. So I have a lot of conservative neighbors. I've lived on dirt roads my whole life, and I think for many of the conservative friends, solar panels are a way to really make your house your castle. You don't have to depend on anyone anymore. It really is yours. And that's a powerful notion for a lot of people. I know a number of people who went and bought that Ford F-150 Lightning in part the EV truck in part because they loved the idea that they could run their house off it for a week if they needed to.

([29:34](#)):

And then there's liberals who like me, who think that it's cool that we're networking the groovy power of the sun, preserve our climate and light up our lives. We can work across those kind of divisions. That's what that Utah story to me demonstrates. And God knows we need one or two things that we actually can work on, but it's much easier if people have had a neighbor who puts up solar panels, much easier to bring yourself to do it. In fact, I just saw the data from this project in the UK where people with heat pumps in their homes were systematically recruited to open their homes for their neighbors to come visit, and it turns out that was dramatically increasing the uptake in heat pump installation. So yeah, it's different, and so it takes a little while to get people comfortable.

Dr. Leah Stokes ([30:30](#)):

Yeah, so much of these technologies are spread through networks. That's what the research keeps showing. And interestingly, some of my colleagues at UC Santa Barbara use the Google Solar Data where you can see all the rooftops with solar and they actually figured out, okay, who lives in those houses? What's their partisanship? And Republicans are as likely as Democrats to put solar on their roofs. So this really is a bipartisan thing. It's not just our propaganda. The money is coming from Republican people to put solar on the roofs as much as Democrats.

Bill McKibben ([31:02](#)):

Leah, that's a great statistic. I talked with all these people at Conservatives for Clean Energy in the southeast this spring as we were getting Sun Day going, and it was completely fascinating to talk with them. They actually did a real service in persuading the governor of Florida not to put the kibosh on rooftop solar over the last couple of years, and now the Sunshine State is actually installing panels at a reasonable rate.

Dr. Leah Stokes ([31:27](#)):

The first time ever. Yeah.

Dr. Katharine Wilkinson ([31:28](#)):

I'm going to pivot us just slightly, Bill, because I think we'd be remiss not to ask you about this. I know you've been thinking deeply about the not wholly clean parts of clean energy, specifically around mining and how we should think about that in the context of the entirety of our energy system.

Bill McKibben ([31:51](#)):

Absolutely. I mean, there is no free lunch, but there are cheaper and more expensive lunches, and in this case, you have to go mine some stuff to make this work. You need some lithium, you need some cobalts, you need some copper, you need stuff. But when you start thinking about it, you begin to quickly sense why it's a different scale of mining than we're used to now. If you go mine some lithium, you put it in a battery and it does its job for 25 years, and when the battery begins to degrade, now we can recycle it and get the lithium back out and start over again. When you go mine some coal, you set it on fire, and so you have to go mine some more the next day. There was a study, I think last fall from the Rocky Mountain Institute estimating that the total volume of minerals we need for this transition over the next couple of decades is equivalent to the volume of coal we mined last year.

([32:51](#)):

Obviously, we should do it as sensitively as we can and people should work hard to make that happen. But the dematerialization that comes with this transition is real. About 40% of all the ship traffic on planet Earth just is carrying coal and oil and gas back and forth across the oceans. It's one of the reasons why I always giggle when the anti-wind forces try to pretend that their concern is the health of whales on our planet. If you could reduce the number of amount of ship traffic in half, every whale on earth would stand on its tail and spout its thanks. Another way of saying this is if you take a shipload of coal and a shipload of solar panels, the shipload of solar panels in its lifetime will produce about 500 times as much energy. We're talking about a dramatic paradigm shift here.

Dr. Katharine Wilkinson ([33:50](#)):

And from an industry where the only recycling is happening via photosynthesis to one where the industry itself can actually increasingly create circularity. I just saw exciting news about this this summer. We have the largest solar panel manufacturing operations in northwest Georgia.

Bill McKibben ([34:11](#)):

In Marjorie Taylor Greene's district of all places.

Dr. Katharine Wilkinson ([34:14](#)):

In her district no less. Yeah, we've got complexity. There's a reason Flannery O'Connor was writing about the south, you know what I mean, Bill? But now they've got a big recycling effort that is co-located with that plant, right? And again, there's a lot more to do, but we've got bright spots even on those aspects.

Bill McKibben ([34:37](#)):

Even more remarkable than that because since we're still on this profound learning curve with these technologies, they get better and cheaper all the time. I put my first solar panels up 25 years ago back when they were expensive, but if I wasn't going to do it, who was? Those solar panels, which are still working fine, but if I took them down now, replaced them with newer, more efficient ones, the materials that are easily recoverable from those solar panels of 25 years ago, the silver, the things like that that are in them are sufficient from one panel to make six or seven panels now, just because we're getting so much better at making them. It goes beyond a kind of circular economy. It's a kind of Mobius strip of circularity. It's really quite astonishing once you start thinking about what a steep learning curve means technologically. The next generation of this stuff is just a couple of years off. I keep hearing now from

people who say this, long awaited perovskite solar panels are actually coming now and soon, and with yet another increment of efficiency.

Dr. Leah Stokes (35:52):

Senator Ed Markey has a solar panel in his office on the capitol, and it's huge, and he got it years ago when there was this sort of clean energy demonstration on the Hill, and I think maybe it was like Exxon Solar or something hilarious like that. Maybe Chevron Solar had come and shown it, back when they were pretending to do something about climate change, the fossil fuel companies, and they then threw it out in the garbage and he fished it out of the garbage and hung it on his wall, and he loves to show, and now he puts facts on it all the time, and it shows how much solar has come down and cost, how much progress has been done. He gets his staff to update it. And he loves to say that this huge panel that's on his wall now, the same amount of power would be generated from just one little corner of a modern solar panel.

Bill McKibben (36:39):

I can almost top that story. Some years ago, I went and found the panels that had been on the White House roof under Jimmy Carter. They were on the--

Dr. Leah Stokes (36:49):

You found them? Where?

Dr. Katharine Wilkinson (36:50):

There's one in the Carter Library right here, around the corner from me.

Bill McKibben (36:52):

Yes. Most of them ended up on the roof of a small college in rural Maine, a hippie institution called Unity College. So I went up there and they gave me one of them, and we took it with a couple of students to Washington doing demonstrations every night along the way in Boston and New York and Baltimore to show that this thing was still working fine, and we tried to give it to the Obama administration to put back on the roof, but of course, they were too scared by any association with Jimmy Carter, so they wouldn't take it. But it was quite remarkable to have this piece of technology still there. The sadness of all of this, of course, is that Jimmy Carter in his last budget, had he been elected, had set aside enough money, they figured to do the work to make sure that by the year 2000 America was producing a fifth of its energy from solar power.

(37:50):

Had that happened, we would live on an entirely different planet now. Among other things, it would've meant that we would've had available and affordable renewable resources at the moment that China was taking its huge industrial leap, and so the temperature of the earth would be substantially different from what it is now had Jimmy Carter won that election. And that should be a reminder to all of us to take none of this for granted. We've had other moments when it looked like we were going to be making this leap, and it's why we push and that's why we organize and so on.

Dr. Leah Stokes (38:27):

Yes, that's why Sun Day as an event and a network is so important because the climate movement has been very good or at least better at fighting things, at saying no to fossil fuel infrastructure, and that's important and should continue, especially in overburdened communities, really on the front lines of pollution. But we also have to get better at saying yes to things at saying, yeah, we want to speed up

permitting, we want more things in our backyard. The sort of YIMBY, Yes In My Backyard movement. What is your vision for trying to get the movement to push in that direction, saying yes to EVs and solar panels and heat pumps and batteries and all these good things?

Bill McKibben ([39:06](#)):

Well, Sun Day is really my vision for how we start doing some of that, and then we just keep writing and pushing and talking about it over and over again. I think it will happen, Leah. I think that the climate movement, remember grew up in those decades when fossil fuel was cheap and renewable energy was expensive, and that meant that by default, our job was to try and basically drive up the cost of fossil fuel. Stop pipelines, divest from fossil fuel stocks, try to put carbon taxes on. All those things. It takes a little while to readjust to the world, the new world in which that's flipped, and we've been referring to renewable energy as alternative energy as long as I've been alive, time to stop doing that. It's not alternative energy anymore. It's the obvious common sense, straightforward way forward. If we can make that case over and over again, it'll really help.

Dr. Leah Stokes ([40:09](#)):

So I think our listeners having heard this really quite remarkable conversation, they're going to want to get involved in Sun Day. It's coming up in a few weeks. So Bill, what can people do to get involved?

Bill McKibben ([40:21](#)):

Start by going to [sunday.earth](#). It's a beautiful website, and one of the things you can do is contribute one of the many, now tens of thousands of drawings of the sun that people have added to this gallery. But there you will find a map of all the events that are already scheduled to take place. If there's one in your community, then figure out how to join in. If there's not, then figure out how to make one, and it can be just small and beautiful, get 50 kids and people from the neighborhood together on e-bikes with streamers coming up behind them, and that's the kind of beautiful thing that the local newspaper will cover and that will help add to the momentum of the day. This is the first attempt at this, and I think it's going to be quite lovely. I'm going to be in New York City for the end of the day, and Jane Fonda is coming to help. So we have lots of good souls joining in the fight, and we'll do what we can to make a joyful noise.

Dr. Leah Stokes ([41:21](#)):

So this is like earth, obviously a celestial body, right? Earth Day, celebrating the earth. This is Sun Day celebrating the sun, right? And so what do you think the goal is coming out of this? If we can make this Sun Day the first of many Sun Days to come, the most successful, what's your vision?

Bill McKibben ([41:39](#)):

If people realize that this is not alternative energy, then it makes every step in the political process easier going forward. If we realize that this is at the heart of the energy future, then everything else gets much easier. And that's as important for progressives and environmentalists to recognize as anybody else, because when I go around and tell people these statistics, when I tell 'em that China's putting up the equivalent of three coal-fired power plants, a day worth of solar panels, environmentalists are just as likely to be amazed as anybody else by this. We've talked ourselves into the idea that this is alternative energy, and so we have to change our own minds a little bit here too. The first Earth Day in 1970, which was the high watermark in some ways of political organizing in American history, 20 million Americans in the street, 10% of the then population that drove political change in absolutely straightforward ways for the next decade.

([42:47](#)):

A corrupt Republican administration nonetheless gave us the EPA, the Clean Air Act, the Clean Water Act, whatever it is, a important step forward to make this part of the political dialogue everywhere. So that's what we're up to. And just in the same way that Earth Day 1970 was driven above all I think by the images that came back from Apollo 8, those first pictures of the earth as a whole. So this needs to be driven by a kind of image or a sense of the sun as the incredibly beautiful neighbor that it is. We're very lucky that our local star is as benign as she is, that she's at just the right distance to make our lives easy and now easy in this way too. Hopefully it'll be the start towards reorienting ourselves back towards the natural world in that way too.

Dr. Leah Stokes ([43:52](#)):

Well, I hope that you're right. We got to get people excited about our movement and bring people along, and I'm just so excited to see what happens on September 21st.

Bill McKibben ([44:01](#)):

Amen, friend, thank you both very much. What fun to get to talk about all this and with such good souls as you.

Dr. Katharine Wilkinson ([44:09](#)):

We adore you, Bill. Thank you for as ever steering the compass of this work in such an important direction.

Bill McKibben ([44:16](#)):

Back at you.

Dr. Katharine Wilkinson ([44:18](#)):

So I don't know, Leah, I was already excited about Sunday, but after talking to Bill, I am very fired up.

Dr. Leah Stokes ([44:27](#)):

It's going to be a great event that's coming up on Sunday, September 21st, just for clarity and confusion. The Sun Day day of the Sun will also be on the Sunday on the Autumnal Equinox when the day is just as long as the night, and it's happening really all across the country, right Katharine? You can look up an event in your community going to [sunday.earth](#)

Dr. Katharine Wilkinson ([44:46](#)):

It's really amazing to see just this blossoming of things that are planned for the day. And of course, you can also plant your vision for Sun Day in your community, add it to the website. You can design your own sun, which is very cool. Use that on social media, et cetera. And I think just in general, this feels to me like such a big invitation to shift some of our narratives, to shift some of our language and our framings. Bill really touched on at the end breaking through the idea that solar power and wind power is alternative energy. It's not. It's just abundantly awesome energy. It is excellent. It is breathtaking. It is miraculous. It is cheaper than ever. It is growing faster than ever. It is cleaner than ever, and it's just going to keep making the world better, but it needs all of us to boost it along.

Dr. Leah Stokes ([45:46](#)):

And in a time when the climate news can be so depressing, whether it's the endless wildfires or the endless Trump administration gutting of climate policy, it's easy to despair. And that's where I think Sun Day will be such an injection of hope and optimism and really connection for people. If you take part in

this event, you're going to meet some of your neighbors, or if you've already got a heat pump or an EV or a solar panel or a battery, you can show that off and maybe inspire a couple people to go ahead and use those federal incentives before they expire at the end of the year. Activism is the antidote for despair, right? If you do something, if you get involved, you're going to feel less alone and you're going to feel more hopeful about this big, bright, solar powered future that is really right on the horizon.

Dr. Katharine Wilkinson ([46:37](#)):

By here comes the sun, we mean us.

Dr. Leah Stokes ([46:50](#)):

In our next episode, we'll be talking to Dr. Kate Marvel, a good friend of Katharine and mine about her new book. It's called Human Nature: Nine Ways to Feel About Our Changing Planet, and it's really a story of climate science and all the emotions that can come up as we look at the climate crisis.

([47:11](#)):

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

Dr. Katharine Wilkinson ([47:14](#)):

and me, Dr. Katherine Wilkinson. We are a production made in partnership with the 2035 Initiative at UC Santa Barbara, and The All We Can Save Project.

([47:24](#)):

Thanks to our funders and supporters who make this show possible, including the 11th Hour Project and Fossil Free Media.

Dr. Leah Stokes ([47:30](#)):

Rose Wong designed our show art. Sean Marquand composed our theme song. Additional Music came from Blue Dot Sessions and Epidemic sound.

Dr. Katharine Wilkinson ([47:40](#)):

Script writing, fact checking, communication and production support are by Lucas Boyd, Quinn Lewis, Christin Palmstrom, and Anusha Singh. Sameer Sengupta is our editor and sound designer.

Dr. Leah Stokes ([47:51](#)):

And if you're digging the show, please hop on Apple Podcasts or Spotify and give us a five star rating or leave us a review.

Dr. Katharine Wilkinson ([48:00](#)):

If you'd like to help us make more episodes of A Matter of Degrees, get in touch.

Dr. Leah Stokes ([48:05](#)):

You can find us online at degreespod.com and on YouTube.

Dr. Katharine Wilkinson ([48:11](#)):

And stay tuned for more stories for the climate curious.