Bill McKibben: It's been a good week for me. I've been working my way slowly down the California coast from UC Santa Barbara to Pepperdine. But I'm always very cognizant that I was going to end up here at UCSD and very much looking forward to it because of the importance of this place in this story. Not only are there some of the best activists in the world here, I was so pleased to see my old friend Masada Disenhouse, who's led San Diego 350 from pretty much the start and to meet new colleagues from the third act chapter here that I'll describe in a little while. Not only was I really pleased today to hear the story of Father Burke and of everyone else who's made this lectureship important over the years. But, of course, this is also, in many ways, the place that holds a central part in the story of our understanding of what is happening on this planet. Roger Revelle and Charles Keeling were absolutely crucial parts of that story. Without them, we would not have had the warning that we have had been granted to at least try and grapple with the most dangerous thing that humans have ever run into. It is extraordinary tribute now that at this university, every undergraduate takes a course in climate change comprehension. I think that that is unique for the moment, I hope not for long, in American higher education, and I think it's extraordinarily fitting and extraordinarily important. It may mean that I'm not particularly needed, since you already all know an awful lot of this, but I'll do my best, given Marco's introduction, to be a little hopeful. At the end. We're going to start first with a dose of reality because I'm not going to I'm not going to amaze you by saying that we are at the moment in this world in the grips of at least two very dark things. One of them is this story of the climate crisis and the rapid heating of the planet. Look, the things that we warned about in the 1980s, they've all pretty much happened now. We've watched the climate crisis play out more or less as we thought it would, in fact, a little faster and a little harder. We're now, well, well, well into the middle of this dilemma. I flew across the country a few days ago. I was sitting, as is my wont, by the window and looking out at the west. It was, of course, beautiful. We flew directly over the Grand Canyon, which always is a glimpse back into deep time. But really, what dominated the view was the extraordinary and very different look of the mountains of the West this year. As you know, this has been by far the hottest winter in the history of the American West, 14 states set new winter heat records over those three months. Then once winter was over, we had in March, one of the two or three most anomalous heat events that we've ever measured on the planet. Because it was still relatively early in the year, it didn't set record temperatures, but it set record temperatures for the month of March. In many places, we had temperatures that would have set their new record for June. I know those mountains, many of them pretty well and I was flying over places where I know that in the past, I've glissaded down snowfields in June, and now there's not a flake of snow on the ground. We flew over Lake Mead, and it looked like someone had pulled the plug on a bathtub. It was all sear brown and tawny and Scary because it means that you all are going to be looking over your shoulders for the next months, seeing if there's a puff of smoke on the horizon. Sad because this is one of the most beautiful landscapes on the entire planet, and it's now changing at unbelievable speed, and it's changing because of us. The last three years have been the hottest three years we've ever measured on this planet, but that record is not going to last very much longer. The meteorologists are now quite convinced that we are about to see the advent of an extraordinarily strong El Nino over the Pacific. When it comes. It will almost certainly guarantee that this year and more likely next will be the hottest year in human history. We'll see temperatures that no humans have witnessed before, and with it will come more of the chaos and upheaval that we are now, sadly, a little bit too used to. Used to enough that the fires that come no longer phase us quite perhaps in the way that we should. It's only 15 months since the largest city in this state, large portions of it burned to the ground in a firestorm of truly unparalleled proportion, but we've pretty much memory holed it by now. We don't obsess about it. Once that water has evaporated up into the air because warm air holds more water vapor than cold, it comes down, and in wet areas like the one I live in in Vermont, we now see epic flood more years than not. My town was cut off from the world for a few weeks last time because both the east and the West road out of town were washed away, my neighbors lost their homes in mudslides. But of course, California and Vermont are rich enough still, more or less, to be able to deal with this not true in the rest of the planet. When the rains stopped in Vermont last time, they picked

up in North Africa. The next week, they had the largest rains they'd ever had, the rains you can only have on a globally warmed world. So much rain fell in Libya that the main river burst through two dams, crashed into a coastal city, and washed 10,000 people out to sea where they drowned in the course of an hour or so. We didn't hear a lot about it because Libya, but it's a reminder that something like that is happening in the poorest parts of the world almost every day. It's a reminder of, among other things, the rank injustice of all of this. Forget Libya, all of Africa has produced about 3% of the greenhouse gases in the atmosphere. The 4% of us who call ourselves Americans have produced a quarter of all the greenhouse gases in the atmosphere. No country will ever catch up with us, not China. If there are 10,000 people drowned in an hour, then by some moral math, about 2,500 of them are on us. We are in a very difficult place and more difficult all the time because now the damage is extending past fires and floods in particular places to begin to attack the most basic systems of this planet. The jet stream draws its power from the temperature differential between the equator and the poles. As the pools have warmed and that temperature differential has shrunk, the jet stream has gotten stuck in high amplitude positions for long periods of time, with a siege of rain or drought on either side. In the Atlantic Ocean, the big currents like the Gulf Stream, which together are 100 times the flow of the Amazon and represent the largest heat distribution engine on planet Earth, they're beginning to flicker and falter as a melting Greenland pours freshwater into the North Atlantic. The density difference between that and the saline water that normally is there is beginning the process of shutting down that giant rotating current, which is driven by those differences in density. We used to think this was a problem that probably belonged to the next century, but we think that no longer. In fact, there was an important paper last week where the leading expert in the world on this topic said that there's now a 50% chance that it will collapse in the course of this century, and if it does, it will be a civilization shaking event. We have very little time to deal with any of this. The intergovernmental panel on climate change told us a few years ago that if we wanted to stay on anything like the timetable we laid out in Paris just a decade ago, we would need to cut emissions in half by 2030, which by my watch, is three years and seven months away. A very, very tall order. Dark thing number 2, we need to somehow do this work on a planet and in a country that is increasingly slipping into authoritarianism that we have not seen before and that makes it much harder to get rational action on almost anything. When we started Third Act, this attempt to organize older Americans like myself a few years ago, we took as our two goals, the protection of our climate and the protection of our democracy because we thought they were the things most under threat, and I fear that we were right. I've just been doing a series of videos with some of our oldest members, people in their 90s and their hundreds who are too old now to go out and join in the protests in the street and things, but want very much to play a role. The role that they've been playing in these videos is to try and remind other younger people just how abnormal the world, the country that we currently inhabit is. For all of us, whatever our politics, there have been presidents that we liked or didn't like in the course of our lives, but there has never been anything like the moment that we are in now. These interviews were exceptionally moving. Because as I pointed out, if you've reached the age we're on our 250th anniversary as a country this year. If you've reached the age of 83, you've been around for one third of the entire American story, which gives you a certain credibility in describing what a strange moment we live in. There's an interview with a woman who said, When I was four, I watched my sister die of polio. Can you imagine how mad I am to see them messing around with vaccinations and things now? There was a man who said, I took my naval commission not long after Pearl Harbor. Can you imagine how crazy it seems to me that we president now describes what fun it is to be bombing other countries, how ashamed that makes me feel? It's extraordinarily dark moment, and yet there are lots and lots of signs of resilience in our political system, anyway. I will say, since we're here at a lectureship in honor of a priest of the Paulist order, that one of the most healthy signs in the last few weeks has been the emergence of the Pope as a powerful commentator on life in America in the year 2026 [Applause] To finally have someone of stature just say, as he said, after our president threatened to wipe out an entire civilization, the word that he used was not hyperbolic but powerful, nonetheless. He said, "This is unacceptable". Indeed, it was, and indeed much else is, including

maybe preeminently, the effort to destroy the American scientific system so exemplified by the work of Charles Keeling. That was our system at its very finest in the postwar years in that international geophysical year, when from San Diego, you sent forth a young post doc to build what became the most important scientific instrument in the history of our species on the slopes of Mauna Loa, one that continues in until the Trump administration succeeds in unplugging it in providing us with a daily update on just exactly where we stand. Today, I was informed by one of its custodians that we stand at 432 parts per million CO_2 in the atmosphere, much, much, much too high. That's the bad news. Now I'm going to switch registers and try and convince myself and you that there are yet some reasons for real and substantial hope or at least grounds on which to work. Against those two big, bad things, there's one big, very good thing happening this decade on the planet, and it's big enough and good enough that it might take a bite out of both the climate and the authoritarianism crisis. That thing is the very rapid, very sudden surge in clean energy around the planet, power from the sun and the wind, which is really all power from the sun. I mean, the sun heats the Earth differentially, producing the winds that turn those majestic turbines. We've had solar panels and wind turbines for many decades, but they've always been very marginal. We referred to them as alternative energy. As of about 36 months ago, they are the obvious, common sense, straightforward way to power the future. That's because earlier this decade, we crossed some invisible line where it became cheaper to produce power from the sun and the wind than from burning coal and gas and oil. That's an epochal moment, by the way, for human civilization. We've made our way for 700,000 years by setting stuff on fire. Darwin said language and fire were the two things that marked out our species. When we crossed that line, when it became cheaper, and really just for a minute, fixed on the fact that we live on an earth where the cheapest way to make energy is to point a sheet of glass at the sun, in that world, things began very rapidly to change. The center of that change has been in China, which has built about half the clean energy on the planet in the last three or four years. The pace at which they are doing it is nothing short of staggering. This time last spring, the Chinese were putting up 3 gigawatts of solar panels a day. A gigawatts the rough equivalent of a big coal fired power plant, they were building one of those out of solar panels every 8 hours. It's a mixed blessing in a way, because it means that they're going to own the future, and we are giving it to them. These technologies were invented in the United States. First solar cell, 1956 Bell Labs, Edison, New Jersey. It's possible that there's one or two people in this room old enough to have been dropping dimes in payphones in the 1950s. If you were, then you helped fund the first solar cells. First industrial wind turbine in the world, 1943, in the Green Mountains of Vermont. Our decision to hand them over to the Chinese, to stop doing them ourselves, represents the greatest act of national economic self sabotage, I think, in world history. But lay that aside for a moment. It's very good news in another sense, that the Chinese have perfected the art of producing very cheap solar panels, and you can see it happening the results in many places around the world, including California. Which really has done, it's doing some things wrong now, I think, but in a large sense, it's done some very powerful things. Most days now in the Golden State, you produce more than 100% of your electricity for long stretches of the day from renewable energy. Basically, from eight in the morning till six at night, California is mostly running on sunshine, and then at six, when the sun begins to go down, California now starts running mostly on electricity from batteries that spent the afternoon soaking up excess sunshine. Oh, that's a remarkable success story, and it's happened remarkably fast. What does it add up to? Well, remember I told you that we would need to cut emissions in half by 2030 to have some hope of even beginning to stay on the path we need to California is using 60% less natural gas to produce electricity than it was three years ago. That's an extraordinary change. It has much, much more to do, and it's barely begun to cut into the amount of oil and gas that it uses for other purposes and so on. Still, extraordinary. The most beautiful parts of this story are playing out in poor parts of the world. Pakistan has been hit harder by climate change, I would say, than any country on planet Earth. The summer time temperatures in rural and urban areas routinely top 125 degrees now. In 2010 and 2023, they had the two worst floods since Noah. The last one displaced something like 30 million people. But they have one geographic advantage, a border with China, and across that border in the

last 18 months, individual Pakistanis, not a government program, have imported staggering numbers of those cheap Chinese solar panels. They were burdened by unreliable and expensive electricity, and they wanted something different, and now they have it. Taking those panels and going on YouTube to figure out how to put them together, Pakistanis have built in 18 months the equivalent of half the national electric grid. It's really pretty staggering to see. Pakistani peasant farmers, their biggest budget item has long been the diesel needed to run the irrigation pumps to bring water up from those deep tube wells that are the legacy of the Green Revolution of the 1960s. They were early adopters of all of this. They're now using 30% less diesel than they were two years ago. They generally lack the money to build the steel scaffolding for this stuff that we're used to seeing, so they're just laying the solar panels on the ground and pointing them at the sun. Now that's happening across Africa. Last year was the part of the world where solar panels were increasing at the fastest rate, you can just sort of watch the Chinese trade routes and see what's happening, and as those panels go up, in the case of Africa, usually bringing people electricity for the very first time, there follows behind them all the other things that this miracle could afford us, things like induction cook tops, cheap electric, incredibly effective, they're what I use, that allow people to start replacing the firewood or the dung that they have had to gather to cook their meals. Often in Africa, not EVs, but the even more miraculous technology of our time, the eBike, which are growing in huge numbers now across the developing world. You can run 1-5 miles on a penny's worth of electricity. The bicycle itself was obviously an elegant invention, but now we've invented a bicycle without hills. Hills have dogged human beings pretty much from the beginning, and now they need not. I've described why this revolution is so important in climate terms. It won't be enough to stop global warming, it is too late for that, but it is not too late to start shaving tenths of a degree off how hot the planet eventually gets, and each tenth of a degree that we raise the temperature moves 100 million of our brothers and sisters from a relatively safe climate zone to a relatively dangerous one. This is the most important task yet that humans have ever undertaken. But climate's not the only reason to be trying to get off fossil fuel fast, 9 million people a year die on this planet from breathing the combustion byproducts of fossil fuel. That's one death in five. It's a staggering number but one that for at least older Californians, should be understandable. There may be people in here who can remember what the air was like in Southern California in the 1950s and 1960s. In New Delhi, there are 5 million school children, 2.5 million of them have irreversible lung damage from breathing the air. But it doesn't need to be that way. There's a list of cities with the dirtiest air on the planet, ten years ago, even seven or eight years ago, it was dominated by Chinese cities, none of which are on that list anymore, their air quality is now increasingly comparable to ours. That's because almost, well, more than half the vehicles sold in China now come with a plug hanging out the back, and that connects to this vast network of solar farms and wind turbines that they've begun to build out across the nation. It's not just that it's cleaner, by the way, I was talking to a friend in Shanghai not long ago, and he said, The thing you notice just as much is that our city is far, far quieter than it was just a year or two ago, because everybody's in electric vehicles. The third reason why it would be awfully nice to get out of fossil fuels is the part about authoritarianism. As long as we depend on a resource that is only available in a few places, then the people who control those few places will have more wealth and more power than they should, and they will abuse it. Vladimir Putin used his oil and gas winnings to launch a land war in Europe in the 21st century. The Koch Brothers were our biggest oil and gas barons, controlling more refinery and pipeline capacity than anyone else, they've used their winnings to systematically erode the foundations of our democracy over the last 30 years, one of the reasons it was so easy for the current administration to kick them over. The King of Saudi Arabia, on and on. I think, well, imagine how many wars, coups, assassinations we would have avoided over the last 100 years had oil been of trivial value during that period. We can imagine that pretty easily in the winter and spring of 2026, because 11 weeks ago, we took over Venezuela, give the president his due, he made not the slightest effort to pretend that it had anything to do with democracy or human rights, he said, You have oil, we would like the oil, and we took it. Venezuela had the second largest oil reserves on planet Earth. Iran has the third and now, obviously, we are at war there, a insane and

pointless effort that has served mostly to remind us what folly it is to rely on a substance that has to go through a 20 mile stretch of water someplace before it can reach the rest of the world. Human beings are very good at starting wars, all too good. But it will be a stretch to figure out how to fight one over sunshine. Sunlight has to travel 93 million miles to reach our planet, but none of those miles go through the Strait of Hormuz. On every count, this is good news unless you own an oil well, in which case, it's terrible news because it represents a threat to the riches that you have managed to exact by your ability to control the supply of energy that people need. If you had that control and the cash flow that's come with it, you might decide to divert some of that cash flow in an effort to game the political system so that you can slow down this transition that threatens to erode the value of your holdings. You might recall that candidate Trump said quite openly to big oil executives during his campaign that were they to contribute $1 billion to that campaign, he would give them whatever they wanted. They contributed between donations, lobbying, advertising, roughly half $1 billion to the Republicans in the last election cycle, and apparently that was enough because indeed, he has given them not just all that they wanted, but, I think, considerably more than they even expected. We have shut down wind farms that were 90% complete off the Atlantic coast. We have put federal land entirely off limits to solar panels. You may have missed this amidst all the other news of the last few weeks, but, last week, collectively, we taxpayers wrote $1 billion check to a foreign company that had won the rights to develop wind farms off the eastern seaboard. We wrote a check so that they would surrender those rights and that that wind would forever go untapped by human beings. Now, Donald Trump and his administration, Donald Trump can't slow down forever, can't stop forever this transition. It's not as if he's Jesus Christ or something, but he can and will slow it down with the collaboration of his friends like Vladimir Putin. At this point, slowing things down is pretty much the same as stopping them if what we're worried about is the climate crisis. The planet will run on sun and wind in 40 years because it's cheap but if it takes us anything like 40 years to get there, then the planet we run on sun and wind will be a broken planet. Our job is to figure out, I think, how to speed up this transition, how to force the pace, how to make it happen as fast as it possibly could. It could happen fast. The factory capacity to build solar panels in China is great enough that ten years of that production would produce solar panels sufficient to make as much energy as the world now uses. We do not face any technological impossibility here, we just face the need to push this, to make it happen. That's why I spend most of my time now not writing things or whatever, but as a volunteer organizer to try and figure out how to make that go faster. Right now, progress in DC is impossible. One of our jobs, I think, is to make sure that come November we make it a little easier to make progress in DC. I hope that you all are engaged in that task, and we're grateful to Californians, among other things, for recognizing the emergency that we're in and doing what you did with Prop 50 earlier in the year. That was important. Sad, but important. There's a lot of sad but important choices that we are now having to make. While we're doing that work, there's also a lot that we can do at the state and local level to make it much easier to do the stuff that needs to happen. Last September, we did this thing called SunDay, 500 events across the country that were a celebration of this renewable energy to spread the word that things have changed because it's hard to get old ideas out of our minds. We still think of, I think, clean energy as the whole foods of energy. Nice but pricey for special people. We needed to get across the idea that this is now the Costco of energy. Cheap, available in bulk, on the shelf, ready to go. We had beautiful days of action across the country, and it really was fun. But an important sequel of it is that we've moved on two big fronts to make it easier to do this. One is around permitting. Americans pay three to five times as much as Australians or Europeans to put solar panels on the roof. It's not because the panels are more expensive; the panels are a commodity now. People in Europe are increasingly using them instead of wood to make fences because they're cheaper than buying the wood to make fences. That's not the problem. The problem is excessive bureaucracy. There are 15,000 jurisdictions in this country. Each one has their own building code. They'd like you to trade drawings back and forth for months, send out teams of inspectors. The rest of the world, this is pretty much like buying a new refrigerator. You call somebody up on Monday, by Wednesday, they're up on the roof building, and by Friday, you're connected to the

grid and good to go. Trust me, were there a plague of solar rooftop fires across Europe or Australia, Fox News would have told you about it. We can change this pretty easily. There's an app, the Solar App Plus, that allows for instant permitting. California and New Jersey have actually adopted it, but many municipalities, even in those states, have been slow to get the message and make it easier. It's important to keep doing. Even more beautiful, though not as numerically significant, is this stuff that we're calling balcony solar or plug-in solar. Those of you who've traveled to Europe in the last few years may have noticed that there are now millions upon millions of apartments across Europe where people have put solar panels off the railings of their balconies. You go to whatever you call Best Buy in Milan, and you come home for a few hundred euros with a panel that's designed not to be put on the roof, but just zip-tied to the balcony. On the back is a plug which you plug into the wall. No electrician required. These produce 20%, 25% of the power that an average apartment uses. Not everything, but not nothing either. Illegal in most of this country, all of this country, until a year ago, but we're changing that fast. We have bills now in 28 state legislatures this spring. So far, Utah, Virginia, Maine, and I haven't seen yet today, but Colorado is very close. I have put them into law. Several more have passed one house or another of the state legislature. Scott Wiener, the assemblyman or senator from the Bay Area, has introduced this bill in Sacramento. It costs nothing. It's merely a change in the regulations. It's the thing that it would be very nice if your state legislature did this year. Instead of doing the thing that state legislatures always do, which is say, let's have a year and think about this. The climate crisis is no longer giving us spare years to play around with. We can get this thing done. This is precisely the place where California, I gave you much credit before, is lagging now. The governor has made it very difficult to do rooftop solar in this state, even on schools and hospitals, mostly in response to pressure from utilities. I do not pretend to understand California's utility system, except that it's bad. This is a way around it. Let me just say two things as I end. I've been saying we need to do this work, and I want to be a little more specific about the we. I have the benefit of being able to look out at all of you so I can make some judgments about the demographics of this audience. I note that there are a few other people here who, like me, have reached a certain age. I think that older Americans have a really significant and vital role to play in this work. That's why we started Third Act. People told us that we were crazy to do it because no one had tried to organize older Americans for progressive change for a very long time, since the Grey Panthers in the 1970s. The reason is that political scientists kept saying people get more conservative as they age. That may have been true at some point, but not, I think, now. If you're in your 60s or 70s or 80s, your first act was in this period of political, social, cultural transformation of the apex of the civil rights movement, the moment we started taking women seriously in public life, the first Earth Day in 1970. I was in Santa Barbara the other night with people who had been out cleaning up after the oil spill and helping build that momentum. I met people here today who are out on the Quad at this university in 1970 at the first Earth Day protest, when 20 million Americans went into the street, 10% of the then population, by far the largest demonstration in American history and perhaps the most effective because within 18 months, we had the Clean Air Act and the Clean Water Act and the EPA all signed into law by Richard Nixon, no friend of the environment. Those of a certain age will recall the famous picture of Richard Milhous Nixon wandering the beach on San Clemente in his black wingtip Oxford. But he had no choice. People had demanded that change. One of the advantages that people of a certain age have is the understanding, which younger people do not have, sadly, that we can force change out of systems if we demand it. There are other advantages that we have, too, time and a lifetime of skills and connections, and older people strike fear into the heart of politicians because every single person in this room voted in the last election. There is no known way to stop old people from voting. It becomes a really important group, and it's been great fun to be mobilizing people this banner. To try and do it in the right spirit, our first day of action, first action that we took as a group, even before we really officially formed, came when a bunch of young people, because I've spent most of my life organizing young people with young people, so I know a lot of them. High school crew of the American offshoot of Greta's movement called up and said, we want to take on the big banks that fund fossil fuel, B of A, Wells Fargo, City Chase. We want to be protesting them, but we're in high

school. We don't have checking accounts. We don't have credit cards. They won't listen to us. Will you help? I said, if there's one thing we have, it's credit cards. Yes, we will help. I remember showing up at that first demonstration in Boston. There were 300 or 400 high school kids, and they're somewhat spryer. They were at the head of the march. But at the back of the march, there were a bunch of us from this nascent third act with a big banner that just said, fossils against fossil fuels I think it's pretty important that boomers lose a little bit of their self-righteousness from time to time in this work. It was good for the kids who were there. We hear a lot about how young people suffer from climate anxiety, and it's very true. But I think in most cases, that anxiety is less about the actual physical effects of climate change than the strong sense that they have been abandoned to deal with it on their own. We need to make sure that that is not true.

Speaker 1: Please mention the nuclear trap.

Bill McKibben: We'll have time for conversation in a little while, but don't don't knock me off my stride here. I might never recover. What I really want to say is something quite different here. The thing, maybe the most important tool that we have. I've been talking about scientific necessity and economic pragmatism here, and those are very important. But the other ace up one's sleeve here is that there's something extraordinarily beautiful about this possibility. Let's face it. Why do you all live in San Diego? Because you like the sun. Humans have always liked the sun. We don't know exactly how prehistoric people thought about things being prehistoric, they failed to write it down. But every pile of rocks that they left behind them, things like Stonehenge, all point to the equinox or the solstice. The minute that humans had to develop mythologies to explain the world to each other, the very first challenge that they faced was explaining how this thing rises over here in the morning, sets over here in the afternoon, and gets back over here the next morning. The world is replete with wonderful stories about giant emus that swallow up the sun and vomit it forth each dawn, and so on. I took the title of this last book of mine, Here Comes the Sun. I obviously stole it from George Harrison. It turns out that Here Comes the Sun is by far the most-streamed song in the Beatles' vast catalog. Twice as many people a day listen to it as Hey Jude, or Let It Be, or whatever, which is actually a funny joke on Lennon and McCartney, it must be said. But it's because it's a beautiful song, but also because it links us up to the most charismatic object in our corner of the universe, our local star. We put together a playlist for this SunDay thing, and there were hundreds of songs on it. Marco, you can probably think of 20 off the top of your head. Every artist worth their salt has written a song about that. Stevie Wonder wrote three great songs about the sun. A longer list, by the way, than the great songs about fracking. Since we're doing this lecture in honor of Father Berg, let me end by describing the trip I took to Rome last fall. The new Pope had summoned a bunch of us over for a conference to mark the 10th anniversary of Laudato Si, Francis's remarkable and cyclical about global warming that has turned the Catholic Church into a real force in the environmental fight. I will tell you, as a Methodist and things. If you had told me 20 years ago that one of the more important progressive forces on the globe would turn out to be the Roman Catholic Church, I would have probably not believed you. But the Holy Spirit works in mysterious ways, and here we are. Pope Leo, who, by the way, is a bizarrely normal American Midwestern male. You would just recognize him immediately. He said, we are going forward with all the work that Francis said in train around the environment. It remains a big priority. We're going to do this right. Then he said, sometime later this year, we're flipping the switch on the big new solar farm that we built in the suburbs of Rome. When we do, Vatican City will become the first fully solar-powered nation on planet Earth. When it was my turn to get up and talk, I said, "Thank you very much, Your Holiness. That's very good news indeed." It suggests to us what our slogan should be going forward in this work, the banner under which we should rally. That's how I will end tonight. I think that what we're talking about here is energy from heaven, not from hell. That's what we need to keep at the forefront. Thank you all very much.

Marco Werman: This being the Burke lecture, I think we should pick up on where you stopped. How much optimism can be found in faith, do you think, in terms of fighting climate change? Laudato Si

said so much.

Bill McKibben: Depends on how willing faith is to fight. I was just writing about this this week, a piece that'll be in the Guardian, I think, on Sunday. The tradition that I come from, the mainline Protestant tradition that 70 years ago was the dominant religious force in America, did not fight back as strange right-wing evangelicalism claimed possession of the cross and the Bible, which I think was as serious a mistake as progressives letting the right wing claim the flag for their own. I grew up in Lexington, Massachusetts, giving tours of the battle green, where the American Revolution began. I am very clear on the fact that we come from a revolutionary tradition in this country where the rights of people to look, Lexington and Concord were the first no-king demonstrations that we had in this country. I'm very, I think Methodists and Lutherans and Presbyterians and Episcopalians have not only done themselves no favors, but done their tradition and the country no favors by meekly walking away from this fight, and I'm very glad to see that changing in lots of ways and in many places. I think the most interesting thing that's happening in the country in some ways right now is the rise again of at least an attempt at a progressive Christian witness. You could see it this winter in Minneapolis, which was one of the most beautiful, as important, a display of nonviolent resoluteness as the Montgomery bus boycott 70 years ago this winter or the salt March in India 95 years ago this year. It was no accident, I think, that Minneapolis I mean, there were many, many, many wonderful forces there. But the bedrock Lutheran tradition of Minnesota played a big role in that. I think it's remarkable to watch James Tallericko running for Senate in Texas with some chance of winning in a campaign that's essentially a Sunday school lesson about what the Gospel means and does. I think it's been remarkable to see Pope Leo giving that Sunday school lesson in the last few weeks to Donald Trump and Pete Hegseth. It's not a fight between two it's not like he's taking on the president. He is laying out the fact that the gospel is a radical document that demands that whenever humanly possible, abjure war in order to protect and safeguard poor people I think that it has shown up the extraordinary shallowness of what's passed for Christian theology in this country in recent years. The fact that Pete Hegseth unknowingly was reduced to quoting from the gospel of Quentin Terratino is a powerful reminder of just how thin this is. If faith traditions start to play a serious role, then they will be an important part of the climate fight among other fights because you can't avoid it. I mean, the Bible is one of those books where the first page may get read more than some of the other pages. The very first thing that we are told to do is safeguard this creation that we have been given. God makes everything, says, it's very good, and then says, Take care of it. He does not say, Cook it, which is what we have decided to do instead. This should and can and Pope Leo, who followed really in the footsteps of the patriarch Bartholomew of the Orthodox Church in this work, and Pope Francis have made a very powerful start in this way, and I hope that it's a big part of what happens going forward.

Marco Werman: Yeah, it is really powerful. I was really stoked to hear you say that they're going to turn the Vatican into the first all solar powered nation in the world. As I was researching the spread of Laudato si and what's contained within it, it seemed it's more people picking it up and speechifying, and saying what's in it and saying, more needs to be done. What more can it do on the ground?

Bill McKibben: Well, I mean, I write books, too, when I wrote The End of Nature at 27, my theory of change was people will read my book and then they will change. That turns out to be exactly how it works. All of that needs to be translated into political change, so that's why we set up things like three fifty.org and Third Act. That's the transmission gear because there's plenty of people here tonight who are thinking, I really want to do something about this. But absent vehicles like that, they will leave and not really be able to do anything. The American default towards individualism at all costs means, when we think about something like climate change, our first thought is, what's on my roof, what's in my garage? Those are important, but we're not going to solve climate change 1EV at a time. The most important thing an individual can do is be less of an individual and join together with others in movements large enough to change the ground rules. That's why I've spent as much time setting up organizations as I have and others the same. There's now a handful of really powerful, good vehicles

to get things done. Sometimes it means protests or going to jail or whatever, and sometimes it means winning elections, and sometimes it means lots of lobbying and whatever. That's what they're there for.

Marco Werman: You've been arrested before, and I think of your own embrace of nonviolent resistance that dovetails with Buddhism, with the teachings of Jesus. Islam believes that humanity is the stewards of the Earth, the Halifax of the Earth. I mean, are you seeing in other faith, Judaism, Islam, this same outreach that we saw with Francis and Laudato si and Leo's carrying through.

Bill McKibben: Sure.

Marco Werman: Where does that happen?

Bill McKibben: I'm on the board of a wonderful group called Dinu, which is the sort of Jewish climate movement. I'm the what you would call the Shabbos goy on the on the board. We do wonderful work in that community. Yes, there are plenty of things happening in all of these faith traditions and it's crucial that it do. But it's also, of course, extremely crucial that it I mean, let's let's be clear. All the polling indicates that that in our country at the moment, that if you wanted America to operate in a way that paid real tribute to the fundamentals of all our religious traditions, the thing you would do would be elect atheists to run everything because those are the people who have done the good job of upholding the humanist values that theoretically mark our tradition. There's a lot of work that needs to be done within them to make this work. But, yes, there's beautiful shoots all over the place, as you would expect because this is one of the wellsprings of human understanding. When we face a crisis as deep and powerful as the one we now face, it's one of the places you would expect to see this start to rise.

Marco Werman: I've got a few questions here, but I just want to ask you one more thing. Actually, it's a personal thing. We met the first time in the Adirondacks. I think it was 1992, and the station that I was working at decided to do a recreation of the Adirondack Philosophers camp. So Ralph Waldo Emerson, Louis Agassi, biologist from Cambridge, Massachusetts, decided they didn't have REI back at the time, but they kid it out and went to the Adirondacks 1880 something, I want to say.

Bill McKibben: No, early early 25.

Marco Werman: Basically to play in the woods, to think, to look at plants, to go canoeing in phones be pond. These were the transcendentalists, and I feel like they're I was going to start by talking about that and just this whole discussion of wilderness that took place around this great camp in the Adirondacks for a week. It was really food for the soul, and it's where I met you. But the discussion around wilderness, which was the big topic and why it's important, I feel like there is from the transcendentalist through you to today, that there is a connection.

Bill McKibben: Well, wildness, I mean, you know, the End of Nature, when I wrote it, is a meditation in many ways on wildness. The title is it's partly a book, the first book of reporting on this thing, climate change, but the other half is a attempt at amateur philosophy, lay theology. It's a reflection on the fact that we've grown so big in our effects that it no longer really quite makes sense to talk about any place as wild anymore because we're changing the temperature of it and hence everything about it. But that doesn't reduce the value of wildness relative, though it may be. It increases it, all the more. Truthfully, it has it impinges deeply on these questions of faith that we're talking about. Many years ago, I wrote, though I'm not a preacher, merely an occasional Sunday school teacher, I wrote a book about my favorite book in the Bible, the Book of Job and the Hebrew Bible, I which is the culmination of which is the longest speech that God gives anywhere in the Bible, Old Testament or new. He's speaking from a whirlwind, a tornado to explain to Job, who has demanded an answer as to why he's suffering all these things though he has been a good man. God's answer essentially is a tour of the natural universe, just showing the beauty of everything around all of creation and saying in effect, I

think, you're a small part of something very big and mysterious and buzzing and cruel and mysterious. For Job, that's enough. I mean, at the end of three chapters, Job basically says, Sorry, I asked, can I sit down? He says that in part because God has been very sarcastic in this beautiful tour. God appears to have been annoyed at being bothered by Job and says, If you're so smart, you tell me, where do I keep the wind? Can you whistle up a blizzard? Can you tell the proud waves here you shall break and no further? Job says, No, I can't. That's your department. Really every human being had that same response until about 100 years ago when we started getting very big. The first intimation of that really was the explosion of the first atomic weapon. It was Oppenheimer watching it, quoting from the Geta, saying, We have become God's destroyers of worlds. We have so far, avoided repeating Hiroshima and Nagasaki, I think, because we could visualize what those mushroom clouds meant. But we were unable to visualize the idea that the explosion of pistons in billions of cylinders every second of every day would produce the same effect. The amount of carbon that we have put in the atmosphere traps the heat equivalent of 400,000 Hiroshima sized explosions daily. That's why we've been able to melt most of the sea ice in the Arctic continent wide meters thick eons old sheet of ice. I mean, Job had to say, look, you're in charge of that. But we can if God taunted us, we could taunt right back. No, we set how high the waves are going to go now. I mean, look, whether or not there are beaches in San Diego in 50 years from now will entirely depend on the decisions that we make in the next few years about how hot we let it get. If we let it get very hot, all the modeling is extremely clear. The ocean will rise enough to make sure that no one's ever going to surf a beach in this part of the world again because there won't be one. We're in a very different place, and I think that the religious the correct response to this, both scientifically and religiously, is to figure out how to make ourselves a little smaller again. I think that solar panels and wind turbines are a very good starting way of reducing our size a little, knocking ourselves down to size a little bit. I think that it's probably no accident that the same forces that are so contemptuous of that, that the same president who insists that climate change is a hoax is the first president to decide that it might be a nice idea to picture himself as Jesus Christ an act of let's be clear. An act of pure blasphemy that no other leader in the history of America would even have, for a moment considered might be a good idea. Truly one of the most astonishing moments in the altogether astonishing period through which we are living.

Marco Werman: But you gave a really good point there about responsibility and what is on each of us if we want to avoid the worst. From the Catholic Diocese of San Diego, where over 55% of churches have solarized and have divested of all fossil fuels, how can faith help us stretch across partisan divide to bring more Americans over?

Bill McKibben: Stretching across partisan divide is going to be very important here, and solar power is actually one of the places where it's most possible to do that. The polling data indicates that people of all political persuasions are a almost as committed to the idea of solar energy and in fact, of government support for it. It's anomaly in the polling where we've managed to have a partisan divide on everything else. Because I've lived my life in rural America at the end of dirt roads, In both red state when you visited me in the Adirondacks, we were in Elise Stefanik Congressional District.

Marco Werman: New York is just a city. Everything else is red.

Bill McKibben: In purple states like Vermont, it means that I've always had lots of neighbors who have, say, Trump flags on the mailbox and solar panels on the roof. When I talk to them at fire company, at church, at whatever, it's clear that it's not for the same reasons I do, I mean, I put mine up 25 years ago because I was worried about climate change. What they would be more likely to say is, my home is my castle. It's a better castle with an independent power supply. I am cantankerous American enough to feel that way, too. It's not my main motivation, but I don't like utilities. I like running the meter backwards. It appeals to me. I was telling you about the balcony solar thing that we're doing. The first state to legalize this was that progressive bast in the state of Utah. It was entirely because they passed unanimously in their legislature, and it was because the Republican state senator, and it's basically the only flavor of state senator they have, who introduced it, Libertarian, whom I've

talked to a number of times and the like. His basic argument was, if this is good enough for the people of Stuttgart, it's good enough for the people of Stall Lake City, so it is. Free the Rooftop is a slogan that should appeal at least as much to conservatives as to liberals. It's one of the places where we can really get a lot of work done, I think.

Marco Werman: Any thoughts on how states like California can't support China deploy its capacity to decarbonize/electricity the world's economy without yielding to them strategically? How can we cooperate with China?

Bill McKibben: I know that there are great engineers here who are working hard on lots of things. I think that China's lead in this is probably now unmatchable. I think our last real shot to do something about it was the IRA, and that was what Biden was trying to do with government support for batteries and solar panels and so on and so forth. At the behest of the oil industry, the Republican Congress immediately shut it down. I think that'll be remembered, as I said before, as an act of national self-sabotage that will baffle people trying to understand what happened to our country at this period of time. But I think that there remain lots of ways that we can participate in this and lots of room for continued innovation and continued deployment. The one place we're not inescapably far behind may be battery technology because it's now developing. If the last three or four years were about solar panels and wind turbines, this year and the next two or three years are going to be about batteries. They're the last piece of this puzzle. The thing that people always said about solar power was, Oh, the sun goes down. But it doesn't really anymore because you capture its essence in a battery, and then you run the battery at night. Those batteries have gotten very good, very fast. There are some innovative, interesting American things that are happening in the places that we're deploying them, California. Now, Texas has surpassed California as the place that's building clean energy the fastest. But the whole world is going to, in one sense, really benefit from this Chinese ability to do low-cost solar manufacturing. Yes, people are going to have to pay them to get some of this technology, but they're going to have to pay them once. You buy the stuff, you set it up, and then the sun delivers the energy for free, which is a good deal. It's like buying your house instead of renting it. By the way, that's the answer to the mystery, the question that people often pose to me, and students did today. Why doesn't Exxon decide to own the solar industry? They could have. We now know that they knew everything about climate change back in the 1980s when I was writing this book, and Jim Hansen was doing. Exxon was studying it, too, and they came to the same conclusions, but they didn't tell the rest of us about it. They lied about it, the entire industry for decades, costing us valuable time. The reason is because you can't make as much money doing this. That's because the sun will deliver the energy for free, which, from Exxon's point of view, is the dumbest business model of all time. If there were some mechanism by which Exxon and Chevron could own the sun, we would have had solar power decades ago.

Marco Werman: A follow-up to that. I'm curious to know because China did it when they did it under an authoritarian system. Does that matter to you?

Bill McKibben: It does. You can definitely use this stuff in an authoritarian way, but I think, in general, it at least holds a more liberating potential than fossil fuel. Simply because it's available everywhere, and it allows communities, and it really helps if you can come up with smart ways to deploy it. One of the reasons it went first in Germany and Scandinavia was because they quickly developed a system that allowed ownership by unions and churches, and things like that. That very much helped, with the nobody was saying, Oh, the windmill is going to give me cancer or I don't want to look at the solar panel because they were in on the take from the beginning.

Marco Werman: Two more questions, and I think we're going to have to wrap up.

Bill McKibben: That's how we wrap.

Marco Werman: This came up earlier in the crowd. What solution have we for nuclear waste? I think this can return to nuclear.

Bill McKibben: We don't have a solution for nuclear waste, and who knows if we ever will. I will say, the obvious risks that come with nuclear power do not scare me anywhere near as much as the guarantee of destruction that comes with fossil fuel. Something has to go wrong for a nuclear plant to cause trouble. A gas-fired power plant operating exactly according to spec destroys our planet. That said, I don't think that it's going to be a huge part of the answer going forward. We put up something like 80 or 90 times more renewable energy from the sun and the wind last year than we did nuclear or new nuclear power. The reason is dollars. Nuclear power is an extraordinarily expensive way of generating electricity. Its main competitive advantage was this idea that you could run it around the clock, but batteries are eroding that advantage very quickly. The thing that makes it so hard for nuclear engineers and things is they have to not only match the price of solar power now, but the price goes down and down and down and down. Every time we double the amount of solar panels on the number of solar panels on the planet, we decrease the cost. Another 25%. Because we get better and better and better at making them. It's very hard to do that so far anyway with nuclear power. For people who really like nuclear power, and there are people who really do. I try always to console them with the thought that a solar panel could be understood as your local connection to the largest nuclear reactor that we know about.

Marco Werman: There is one problem, though, and that is this business with the Bolgarchy and their big designs on AI and the need for massive amounts of power. Down here in South San Diego County, a developer wants to put up a data center got chased out of the community meeting. People are upset they want to put up these many nuclear reactors now so that they can power.

Bill McKibben: I will be very surprised if that happens anytime soon. Theoretically, and I think it's very theoretical at this point, how useful this technology is and how much of it we're going to build. So far, though, there have been huge numbers of data centers announced; the number that have actually been built is quite small. It's because the business case for building more of them at the cost that they are is elusive still. But let's say you decided that you needed, for some reason, to build it out at the speed that we're talking about. The only way to do that is with by building solar and wind because you can do it so fast compared to anything else. The Chinese have clearly demonstrated that you can build vast solar farms in a matter of weeks. The technology is dead simple, plug-and-play, ready to go. As I said, has worked with many others on a temporary, at least moratorium on data center construction while we figure out what on earth is going on. But for people who are desperate to build data centers, at the very least, the mnemonic to remember is BYONCE. Bring your own new clean energy. Don't overwhelm, don't drive up everybody else's rates, and don't pour carbon into the air.

Marco Werman: A little comment at the bottom. Thank you for being brilliant and funny as hell. The final question, the ringer for everybody in the room, are you endorsing anyone for governor of California?

Bill McKibben: Fair question, and in fact, I wrote about it a couple of weeks ago. Both I, and I believe the third act chapters that cover the state of California have endorsed Mr. Steyer. The reason is I think he would be the most climate-concerned public official that America ever put in high office and by a wide margin. I'll tell you quickly the story. I was sitting in my house in Vermont 12 or 15 years ago, and the phone rang. On the other end was this guy who said his name was Tom Steyer. I had never heard of him. I did what people do now. As we were talking, I Googled him and learned that he was a hedge fund billionaire. That was the thing that popped right up. At which point, I began trying as politely as I could to get off the phone because my basic position on billionaires is that they should be made millionaires [Laughter] But he kept me on the phone, and eventually, out of sheer Methodist politeness. What I said was, I'll go for a hike with you because I figured at least the day would not be a total loss. I would go on a hike. As it turned out, he had gone to camp in the Adirondacks as a boy. He

came, and we hiked a beautiful peak, Rocky Peak Ridge, up to Giant Mountain in northern New York. It turned out, A, that he could hike as fast as I could, which was in my book of virtue, and that he was actually turned out to be a delightful guy, very interesting, very smart, and very concerned about the climate. Within the next year or two, he left that hedge fund because his partners wouldn't divest from fossil fuel, as it were. Since then, he's devoted his time mostly to some combination of nonprofit investing around climate technology and working on climate stuff. He is a climate nerd, it must be said. There is no other public official in America who could not only tell you what the keeling curve is, but calls up every couple of weeks to discuss what it has hit. Yes, we have many conversations about climate science. He's concerned. I guess it's okay to add this. I've never written it, but I'll say it since we're here discussing faith, among other things. First time we were ever doing a talk together, and it was in an effort to get some colleges to divest from fossil fuels. This vast drive we've run that's now gotten about 40 trillion in endowments and portfolios and pension funds to divest from fossil fuel. He was extraordinarily helpful because it turns out that people who manage large sums of money do actually listen to billionaires. It's a world where the number of zeros following your name adds enormously to your credibility. We were giving a talk together, and I noticed he would glance down every now and again at his wrist. On Sharpie, he'd drawn four or five crosses on his wrist. He's a serious Episcopalian. I asked him, and he said it's to remind me that it is not about me and not to let my ego get in the way, that it's about something larger than me. You have to obviously have an ego to run for governor. It wouldn't work otherwise, and it's required. But it did strike me as a good sign that at least he acknowledged that there might be some problem with that and was taking some steps to try and keep it in check. I have decided to reserve my worries about billionaires a little. I will note two things. One, I think maybe the most effective governor in America right now is the other billionaire, JB Pritzker in Illinois, who's been remarkable, including on energy, and in a place that's harder than California because it lacks a desert to make it a little simpler. I will also note that the most patrician president we ever elected in this country, FDR, was also the greatest friend of the working man that we ever managed to elect in this country. This is a way to get back to the beginning and say that the Holy Spirit does work in mysterious ways, and who knows? But you guys will make whatever decision you make, and that will be that. But this is an interesting moment for them. Thank you all very much [Applause]