



# Global Climate Restoration Forum Highlights & Full Transcript

With support from the [United Nations Office for Partnerships](#) and in partnership with [Earth Day Network](#) and [Future Coalition](#), the [Foundation for Climate Restoration](#) hosted the first [Global Climate Restoration Forum](#) in partnership with Member States. The event was held Tuesday, September 17, 2019 at 2pm in the United Nations Trusteeship Council Chamber.

[Watch the two-and-a half hour video](#) at UN Web TV. Find a link to a PDF of the lightly-edited transcript at <https://foundationforclimaterestoration.org/climate-restoration-forum/>



[ClimateChangesEverything.org](#) has curated a selection of quotes from the speakers on Climate Restoration, followed by the full transcript. [Here's the PDF version.](#) This Google Doc can also be found at [bitly.com/climate-restoration-forum](https://bitly.com/climate-restoration-forum).

## SPEAKER IDs & QUOTES

00:21 | **Robert Skinner**, Executive Director, UN Office for Partnerships: ... I'd like to welcome you to the first Global Climate Restoration Forum. Thank you all for taking the time to be here, for being a part of this important conversation.

00:02:20 | **Rick Parnell**, CEO, Foundation for Climate Restoration: The Foundation for Climate Restoration, with the support of the United Nations Office for Partnerships, along with NGOs, corporations, individuals, climate youth leaders, and local governments, will highlight today just a few examples of viable solutions that are ready now for restoring the climate and ensuring the very survival of humanity.

00:08:20 | **Lana Wong**, Master of Ceremonies: Thought leaders...are here today to tell us why Climate Restoration is an essential part of the

framework for climate action... about how we can restore the climate and restore the planet for our children and for future generations.

00:12:36 | His Excellency, The Most Reverend **Bernardito C. Auza**, Titular Archbishop of Suacia, Permanent Observer of the Holy See to the United Nations and Permanent Observer of the Holy See to the Organization of American States: Climate Restoration seeks to return the earth's climate within one or two generations to its condition before the start of the Industrial Revolution. That is a much more ambitious objective than mitigation and adaptation.

00:22:54 | **Greg Kats**, Director, Blue Planet: A strategy that embraces the vision of Climate Restoration is one that also embraces the economy— that makes sense financially and delivers large net financial benefit... We can

embrace a future that's a positive one, not a less bad one.

00:32:11 | **David Cortese**, Board of Supervisors, Santa Clara County, California: If you are a city or county or province, declare a Climate Restoration Emergency now. In a single parliamentary vote, or a single executive action, you can pledge to use every resource, every tool available to you, regardless of your resources, to address this crisis. Santa Clara County has already done so, and I was told as I arrived here today, we are the first in the United States to do exactly that.

00:41:26 | **Dr. Erica Dodds**, Chief Operating Officer, the Foundation for Climate Restoration: We've heard a lot of speeches today about the role that we all have to play in restoring climate. I think one area that we all agree is a major obstacle to the climate right now is the lack of financing... [addressing Tom Baruch] It sounds like you see the innovator's mindset of Silicon Valley as central to Climate Restoration efforts and solutions. To what degree do you think Silicon Valley is set up to take on that challenge?

00:42:55 | **Tom Baruch**, Venture Capitalist: I think we're seeing now a transformation that is going to take place. I think we have no choice in the matter... I'm not saying Venture Capital is going to solve every problem, because it's going to take a movement of people... Everybody has to play.

01:06:39 | **Roxy Azari** and **Tahani Salah**, spoken word poets-activists: Steps are being taken to help better our climate. A mission of restoration has been placed in front of us... Now, there are solutions to help reduce the CO<sub>2</sub> in our atmosphere. We are looking deep into saving our Earth's oceans, to restore the polar ice caps, for today, tomorrow, and forever, so that our children can see the world the way it was meant to be seen: on land that is green, on ice that is cold, on soil that is watered... So all of us, and our future children's children, can have a future.

01:11:08 | **Satya Tripathi**, Assistant Secretary-General, United Nations Environmental Program (UNEP): When I look out to those of you present here today, I see a sea of champions: people that really care about the planet, people that are really interested in making a difference... And the

solution that I think has the biggest impact is going back to Mother Earth, going back to nature. Way back to working with nature, not working against nature... Solutions that are available, that are within our capacity to deliver— let's focus on that, while not losing sight of any advanced technologies that might become available.

01:18:36 | **Dr. Leslie Field**, Founder, CEO, Ice911: Restoring Arctic ice is absolutely necessary to keep the increase below two degrees Celsius and will help considerably with sea level rise as well... So we've been doing small-scale tests in order to develop and test a reversible and safe lever to mitigate climate devastation... And organizations like the UN can help develop the governance frameworks, the permitting procedures, the support, the funding for responsibly and openly exploring and testing, on a small scale, the most realistic and promising solutions to rebuild the stable climate and thriving ecosystems we all need... so that we can have a path forward in Climate Restoration, arbitrated by an international and fair-minded body such as the UN.

01:32:42 | **Dr. Margaret Klein Salamon**, Founder and Executive Director, The Climate Mobilization: How much catastrophic loss are we willing to tolerate and make our goal? What I love about the Global Climate Restoration Movement is the idea that no, we shouldn't aim for any warming— we need to restore a safe climate.

01:34:24 | **Kathleen Rogers**, President, Earth Day Network: The two things I worked on, mitigation and adaptation, were both super depressing... When I was introduced to this concept [of Climate Restoration], I viewed it as a critical third leg of the stool— not just because the technologies exist that will allow us to move forward on a lot of these things... it creates a sense of optimism, which has been sorely lacking... And so restoring the climate, for me, is something that I've already found because I've appropriated it, and I'm running with it. And we're global, we're in 192 countries, and it has been an incredibly positive experience. Whether I'm in India or Puerto Rico or anywhere that I'm working, I'm finding that people want hope. So I think it's really important.

01:36:00 | **Vanessa Wruble**, Founder, MarchOn: There's a sort of fine line we're trying to walk right

now... letting people know how dire the situation is on the one hand, and making sure that people still have hope so that they can remain activated on the other... When I first heard about Climate Restoration from Rick, he sort of just said a few words and it stuck in my mind and I found myself sort of repeating his talking points from then on — without actually knowing that much about it — because it does infuse it with optimism. It does say, 'We're not going to settle for this... We don't know if we can achieve better than what we've set out to achieve right now, so why would we try and limit ourselves?'

01:38:59 | **Lisa Russell**, Founder, Create 2030 and Emmy-winning filmmaker: I think that there needs to be a better communication between folks who work in the creative economy and people who drive policy and work in the UN or NGO sector and the climate action movement for us to be most effective... And I have to give a lot of credit to the Foundation [for Climate Restoration], and to Diana Walker in particular... Not only do we have artists and entertainers here tonight, which was fantastic, but she also allowed me to have a seat at the table and to discuss — you know, using my brain, not just my films, to contribute to this conversation.

02:06:19 | **Katie Eder**, Founder, Future Coalition. Our existence as we know it will not continue if we continue down the trajectory that we are on... The

solutions are out there; there is still time to do something. There is still time to restore our climate. There is still time to fix what we've broken. But we must act now... Our collective power is the only thing that is going to save us. And so it's up to each of us to make the choice — to choose to fight. Fight for us. Fight for the planet. Fight for the future. Because we want to be able to dream again.

02:14:10 | **Anousheh Ansari**, CEO, XPRIZE Foundation: We're asking people to come up with natural solutions, engineering solutions, hybrid solutions, and creating a way for these solutions to get to the market. But we want it to be at a very large scale. This will be the most ambitious carbon removal program in the world... We're actually going to use \$16 million of [the \$100 million] during the term of the prize to get the teams that demonstrate the most promising solutions and give them the support they need—the investment needs, seed funding, to get them out in the market.

02:22:09 | **Rick Parnell** (concluding remarks): I hope everyone both here at the United Nations today, and those of you watching us online, will make the commitment to become a Global Climate Restoration Coalition member. Together, we can, and we will, restore the climate for the future of humanity.

*[Felix Kramer](#) and [Anna Michel](#) of [ClimateChangesEverything.org](#)*

*lightly edited the transcript for clarity and selected the quotes. They are also highlighted below.*

## BEGIN FULL TRANSCRIPT

**00:00** Please welcome your hosts for this afternoon's forum, executive director of the UN Office for Partnerships, Robert Skinner, and Foundation for Climate Restoration CEO, Rick Parnell.

**00:00:21 ROBERT SKINNER:** Good afternoon and welcome. As you just heard, my name is Robert Skinner. I'm the executive director of the UN Office for Partnerships and on behalf of my office, I'd like to welcome you to the first Global Climate Restoration Forum. Thank you all for taking the time to be here, for being a part of this important conversation. Of course, I would like to recognize first the convening partners of the Forum: the

Foundation for Climate Restoration, Earth Day Network, and Future Coalition. Thank you all for bringing today's diverse audience together.

Our work reminds us daily that the sustainable development goals, or SDGs, cannot be achieved by one single sector. We need all sectors working together to move this 2030 agenda forward and my office is mandated to open doors to conversations and create opportunities to address the key challenges that the international community faces today, including SDG 13, of course, which is climate action.

We have a decade of action for delivery of the SDGs that needs to be undertaken, starting now, and we have a climate crisis upon us already. We can no

longer remain passive. We need to act and act boldly if we are to reduce carbon emissions and ensure that global warming peaks at or below 1.5 degrees. This effort is crucial for people and for the planet. But for this to happen, it is time to ramp up more ambitious climate mitigation and adaptation efforts as well as create a better understanding of the existing technologies and resources that can help us reduce the carbon dioxide levels that already exist.

And once again, as we kick off today's event, welcome to all of you and we look forward to conversations that lay ahead of us today and beyond. With that, it is my pleasure to welcome today's host, Rick Parnell, the CEO of the Foundation for Climate Restoration.

**00:02:20 RICK PARNELL:** Thanks Rob. Thank you everyone for being here. Good afternoon. Welcome to the first annual Global Climate Restoration Forum. You can tell we're extremely excited to be here. Thank you Rob for hosting us here in the UN's house, a place where so many important conversations, critical to the future of humanity, are happening.

We at the Foundation for Climate Restoration believe, as I know most of you, if not all of you -- I'm convinced all of you -- believe that humanity is at a crossroads for the very survival of our species. The Foundation for Climate Restoration, with the support of the United Nations Office for Partnerships, along with NGOs, corporations, individuals, climate youth leaders, and local governments, will highlight today just a few examples of viable solutions that are ready now for restoring the climate and ensuring the very survival of humanity.

Climate Restoration began for Peter and Sharon Fiekowsky almost five years ago when Peter and Sharon, lifetime philanthropists and activists, began to realize that all of their hard work to end poverty and promote global health would be undone by climate change. As Peter, a physicist, longtime Silicon Valley entrepreneur, began to research climate change, it became increasingly clear to him that mitigation and adaptation were permanently established as key strategies for meeting the climate crisis. Globally, we are working to mobilize to

reduce emissions and adapt to the changes we anticipate in the coming years.

However, carbon we have already put into the atmosphere in the last century will stay there for a thousand years if we leave it there. And we're already at over 415 parts per million in the atmosphere, higher than humans have ever seen before. What is missing is strategies to begin removing carbon from the atmosphere to bring it down to under 300 parts per million by the year 2050, an incredibly ambitious goal. But isn't the very survival of humanity worth it?

Peter and Sharon established the Foundation for Climate Restoration with the idea that if we work together across all sectors, we could restore the climate to a pre-industrial state to ensure the future of humanity. Working with the United Nations Office for Partnerships, Earth Day Network, Future Coalition, and many of our partners that you will hear from today, this Forum for Climate Restoration will promote the theme and message of restoring the planet.

There are many restoration solutions that are both ready to scale now, and quickly emerging. Some of these solutions include a market-driven approach to removing carbon from the atmosphere, restoring sufficient Arctic ice to prevent permafrost melt, restoring the ocean to a healthy state, among others. To learn more, I encourage each of you to download the foundation's White Paper, [Solutions to the Greatest Threat Facing Humanity and Nature Today](#). I think it's on screen. You can download it at F4CR.org. Please download it and learn more about the science and policy of Climate Restoration and more about innovative solutions that are emerging.

Today's Forum will kick off what is the beginning of a global conversation and the commitment to accelerate carbon removal and restore the climate. The Forum is also the launch of the [Coalition for Climate Restoration](#). The coalition brings together people from all sectors, public and private, to support the goal of restoring the climate to preindustrial levels by 2050. It is our hope that all of you will join the coalition, which you can do at the foundation's website, F4CR.org, and commit to restoring the climate, and that you will be with us now and you'll be with us in 2020 for the Global

Climate Restoration Forum, when we will take stock of our collective progress and explore new solutions that have been fostered and have been identified over this next year.

Working together, we will all ensure that 2020 to 2030 is the Decade of Climate Restoration. We hope that today's Forum will spark a robust dialogue about Climate Restoration and help identify opportunities for mutual collaboration on restoring the climate. We are all here to listen, to learn, and to join the Coalition for Climate Restoration. We are all responsible for the survival of humanity.

Now I'd like to introduce our MC for the afternoon, Lana Wong. We are so thrilled to have Lana here with us today. Lana is a true global citizen, having lived all over the world, from London, Nairobi, to Washington, DC. She is a former BBC presenter, creative director of the World Bank's Connect for Climate Program, an educator, a photographer, but most of all, she's a champion for Climate Restoration. Lana, thank you so much for being here today to steer this global discussion. Thank you.

**00:08:20 LANA WANG:** Welcome. Good afternoon. Welcome to the first ever Foundation for Climate Restoration Forum. I'd also like to welcome our online audience, so thank you for tuning in to this important conversation on global climate action and restoration. We'd love for you to add your voice to the conversation, so please use the hashtag, #RestoreTheClimate.

How many scientists do we have out here today? Could you all please join me in recognizing the scientists, here in the room and around the world, for all the important work they do in gathering the data and the evidence that should drive policy? In today's polarized world, climate scientists are actually one group that agrees on something. 97% of climate scientists say that human beings are to blame for global warming and climate change. And you know what? I'm with that 97%, because it is too darn hot. The last five years are the hottest years ever recorded in human history. And just this past July was the hottest month on record. Sea levels are rising and Arctic sea ice is melting at near record [rates]. Wildfires are burning in Alaska and Siberia, and these long-lasting fires are unseen from many years ever recorded of Arctic wildfires. And we are

in the midst of the sixth mass extinction. Up to a million species of plants and animals are under threat of extinction in the coming decades and we lose up to 200 species a day. So thanks to us, we're breaking a lot of records, but these are not the records we want to break.

I am a mother. I have two teenage boys, and I was talking to a friend of mine the other day who has a teenage girl. She's 15 and she's already decided that she doesn't want to have children. She says that she doesn't want to bring a child into this warming world. Let's think about that for a minute. We often say that children are our future. And if they're too scared to bring a child into this warming world, then we are absolutely in a climate emergency.

This gathering here today, the Global Climate Strike on Friday, and the UN Secretary General's Climate Action Summit next week are all efforts to spark the transformation that we so urgently need to galvanize a global movement. There'll be millions of people, young and old, from countries all over the world striking this Friday to demand climate action so that we have a future.

I don't mean to focus on all the gloom and doom, because there is hope. That's why we're here today: to focus on that hope and the solutions that exist to help us safely restore a healthy climate. Thought leaders from science, engineering, technology, economics, policy, finance, business, and advocacy are here today to tell us why **Climate Restoration is an essential part of the framework for climate action.** We need visionary leaders who will dare to break bad habits and reimagine a carbon-free future. Let's listen to what the folks here today have to say about **how we can restore the climate and restore the planet for our children and for future generations.**

It's my honor now to introduce our very first speaker. He's a prominent faith leader, who is the permanent observer of the Holy See for the United Nations. Please welcome his Excellency, Bernardito Auza, and he'll tell us about the Pope's mission on climate change.

**00:12:36 BERNARDITO C. AUZA:** My dear friends, good afternoon. I am very pleased to be with you this afternoon in this very important conversation. In the fight against climate change, we hear a lot about mitigation and adaptation, but not

much, or not even, about Climate Restoration. I have learned that Climate Restoration seeks to return the earth's climate within one or two generations to its condition before the start of the Industrial Revolution.

That is a much more ambitious objective than mitigation and adaptation, whose common objectives "is to achieve stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system." That is from the United Nations Framework Convention on Climate Change (UNFCCC).

Yet, in spite of the great promise that Climate Restoration proposes to us, the term Climate Restoration is not found either in the UNFCCC or in the Paris agreement. You could correct me if I'm wrong.

This lack of reference to Climate Restoration in the most important climate change documents leaves one to ask where Climate Restoration fits into the overall effort to fight climate change. I believe this is the primary task of our experts and panelists this afternoon. They will seek to help us understand what is Climate Restoration and convince the doubters why Climate Restoration should be considered as an important component in the fight against climate change or why, indeed, do we need to restore the earth's climate conditions to pre-industrial levels?

Climate restoration is a major challenge to technology. The innovation it could bring may contribute to more efficient mitigation and adaptation and therefore, besides its own promise, it promises also to be helpful to adaptation and mitigation measures. The pursuit of it, however, has also its detractors. There are those, for example, who claim that it could divert resources away from urgent mitigation and adaptation measures, or weaken ambitious plan goals (which is the main objective of the coming summit), or discourage decarbonization and the use of renewable energy. There are also those who caution that certain methods of extracting greenhouse gas emissions from the atmosphere could be more harmful than beneficial.

I believe that the relevance of this first annual Global Climate Restoration Forum at the United Nations lies in helping us to have a better

understanding of what Climate Restoration is all about.

And I'm sure all of us are interested to know more. But while trying to learn more about Climate Restoration approaches that are meant to complement mitigation and adaptation measures, let us turn our attention and our hearts to the greatest decarbonizing and oxygenizing mechanism of all: nature. All climate-related documents recognize the importance of forests in carbon reductions. Elementary school science tells us that forests and woodlands reduce carbon dioxide, and that's besides producing oxygen for us. They are great climate stabilizers. And that's why the continued degradation of the world's forests and woodlands is a threat that we must face without delay, because such degradation threatens the whole ecosystem.

The threats against the environment and the need to find solutions are amplified by the great necessity to act urgently, as the October 2018 Special Report of the Intergovernmental Panel on Climate Change stressed. The Report's conclusions are even more worrying when put side by side with the clear insufficiency of the current Nationally Determined Commitments to achieve the objectives set by the Paris Agreement. The Report says that it is still possible to limit global warming, but to do so will require much greater ambition and action now to limit and reduce greenhouse gas emissions. That is the overriding objective of the imminent Climate Action Summit.

And I'm pleased to announce that Pope Francis is sending a video message to the Climate Action Summit, which will be shown probably at the opening ceremony. I do not need to assure you that the environment is very high in the priorities of Pope Francis. The latest proof of it is, indeed, that he has accepted the invitation of the Secretary to deliver a message at this Action Summit. When Pope Francis spoke at the UN General Assembly in September 2015, one of the main themes of his address was the care for our common home and the care for our brothers and sisters in that common home. Between the two, there is interconnectedness. "To harm the environment," he said, "is to harm human beings". And we see this in how the misuse and abuse of the environment "are accompanied by a relentless exclusion of the weak and the disadvantaged." In

response to this, solemn commitments, he said, are not enough. We must act on our commitments.

The Holy See and the Catholic Church actively advocate for the reduction of greenhouse gas emissions. Pope Francis has emphasized time and again that the transition to our reduction of greenhouse emissions is a problem not only within the domain of technology, but even more primarily a question of human behavior, like consumption patterns and lifestyles, that, in turn, orient ways of production. What we want is what the manufacturers produce. Thus, finding innovative ways to promote sustainable production and consumption, and fostering lifestyles that leave the smallest carbon footprint possible, should be encouraged. In this regard, non-state actors are doing much to help policymakers to make eco-friendly decisions for the Catholic Church.

The care for the environment is primarily an ethical and religious endeavor. It is stewardship of God's creation. From this perspective, my friends, increasingly bringing into the climate debate, love and care for the environment could inspire and persuade maybe more people, especially climate doubters, than visions of apocalyptic catastrophes would. While science is fundamental in telling us the state of our environment, science, of course, is fundamental to how we see our environment and what actions to be taken. But it is the conviction to love and care for our common home that moves the heart. Thank you very much for your attention. ([officially released text](#))

**00:21:06 LANA WANG:** Thank you very much for that, Excellency. Our next speaker is Greg Kats, a board member of Blue Planet. He's a thought leader in the Green Economy sector and managed Good Energies, the first multi-billion dollar clean energy investment fund. He helped establish the leading Global Green Building Standard, as well as create the standards for the energy efficiency industry. He chairs the Congressionally-established advisory board that oversees the greening and energy efficiency of more than 430,000 federal buildings. And, not surprisingly, Greg's home and electric car are solar powered. Greg will tell us about Blue Planet's carbon negative concrete and the

entrepreneur movement around carbon restoration. Over to you, Greg.

**00:22:54 GREG KATS:** Thank you, Lana. What a pleasure it is to be here at an event that's optimistic. It's no longer about doing less bad. It's how do we return this planet to its sacred state, as Archbishop Bernardito said, "love for our common home". What an inspiration. Thank you for putting this on.

And now I'm going to shamelessly flog my book, called "Greening Our Built World." It demonstrates the benefit-cost ratio of doing green rather than conventional buildings. It's a ratio of about ten to one. In other words, the argument that you're trading off economy and environment is manifestly wrong. I'll just add, by the way, there are only 89 shopping days 'til Christmas. Not a book for the flat earth, climate denier crowd, but good for in-laws and so forth.

I'm going to talk about a particular company called Blue Planet, which does something remarkable. It takes the flue stack gas out of power plants and it turns it into usable aggregate. Flue stack gas out of power plants is about 30% of our CO<sub>2</sub> and it includes not just CO<sub>2</sub> but heavy metals, particulates, ozone precursors, the things that lodge in our children's lungs and cause respiratory problems through their lifetime.

The process is to begin with a small granule of rock and then mix it with a slurry made from the emissions out of flue stacks. So if you look at the emissions coming out of the plant, it's about 12% CO<sub>2</sub> by volume; natural gas, about 4%. If you flow that into a treated liquid, it forms into a slurry. That slurry then gets bound at a molecular level and you end up with a piece of aggregate that's small, light in color, and meets all of the strength tests: 5,000 PSI. That product can sequester all of the flue stack gas coming out of our power plants. [On construction sites] at the San Francisco Airport, the material that is being poured in includes this aggregate which is carbon sequestering.

As the great philosopher Pogo once said, "if it exists, it must be possible." We're now scaling up production of this to the first commercial facility. What's exciting about it is that you can take a waste product and turn it into a commercial product. You turn it into lightweight aggregate. Those are located

at power plants near city centers, near transportation, and therefore, they are very attractive places to produce aggregate for distribution, for construction of roads and buildings. In the United States, in Europe, if we transition over the next 10 or 15 years away from fossil fuels, which is a great aspiration, it is clear that there are still going to be very large fleets of power plants, burning fossil fuels in Asia, Africa, and elsewhere. So this is a problem that we have to solve and this technology helps us do that.

I'm going to turn to a second good news story, which is the creation of the Smart Surfaces Coalition. As Lana alluded to, it's very hot. It's on average nine degrees hotter in cities, and that's because we've taken grass and trees and converted it into dark and impervious pavements. What a dumb strategy. Smart Surfaces is a name that we're giving to highly reflective, high albedo surfaces that bounce light back into space. It includes porous pavements, which capture the rain and put it back into groundwater. It includes trees and green roofs, and when you combine these technologies and put solar on a cool roof, you're reducing the temperature of those solar panels. Those solar panels now put out more electricity. The cost of installation goes down. The cost of operations and maintenance goes down.

There's a very compelling strategy for adopting Smart Surfaces citywide. We've worked with a set of partners like the American Institute of Architects, the National League of Cities, and the American Public Health Association. When you look at what happens nationwide from adopting Smart Surfaces across our cities and towns, you reduce, on average, temperature by about five to six degrees. You sequester about 10% of the greenhouse gases, at a net present value of about \$700 billion (about two thirds of a trillion dollars). In other words, a strategy that embraces the vision of Climate Restoration is one that also embraces the economy— that makes sense financially and delivers large net financial benefit. So don't let anyone ever tell you that it's environment versus jobs on climate.

The Carbon Star standard is interesting. You would think for a product like cement, which is five or six percent of the world's CO<sub>2</sub> that if I want to specify a low carbon concrete I could do so. You'd be wrong in assuming that. There is no single standard to say, "I'd like to have concrete with the following drying

and performance characteristics, and one of those is the carbon content." Fortunately, the Canadian government is funding this. It's a government that believes in science as the basis for policy (not very popular where I live in Washington, DC). So in six to eight months, you'll be able to specify the carbon intensity of the cement that goes into your buildings and roads. And again, some that is on the order of 5-6% of the world's CO<sub>2</sub>.

The future vision goes something like the following: you take flue stack gas out of the power plant, you put it in to aggregate, and that aggregate is used to reduce the CO<sub>2</sub> not just of the building, but of the city around it. You can sequester eight or nine hundred pounds of CO<sub>2</sub> per cubic yard of concrete. And as our buildings become more efficient, what matters more and more is the embodied carbon in those buildings. For an efficient building operating for 10 years, the CO<sub>2</sub> footprint is roughly equal to the embodied carbon in the cement in that building. So we have to move on from just looking at operations to see what goes into that building, how far is it transported, what are the components, and what are the CO<sub>2</sub> elements in that? In doing so, we can make our cities much more livable. I mentioned on average U.S. cities and globally are nine degrees warmer than the surrounding areas.

But when you look at a city map, you will find a range between three or four degrees, and 15 degrees. Surprise, surprise, the hottest areas are the lowest income areas, that have the fewest trees and the least pervious pavements. So we can restore equity to cities by adopting strategies which makes those cities more livable, more comfortable, or more productive. The Climate Restoration strategy is important. It's important to talk about the threat to species. It's important to talk about impact to future generations, or as Lana said, what it does to our children. But, it's also important that we say that these strategies pay for themselves, many times over, on a net present value basis. A green building on a net present value basis has ten times larger net financial return than the cost of doing so.

What we're finding is when you adopt citywide Smart Surfaces— that cool our cities, make them more equitable, more competitive, create more jobs— is that the benefit-cost ratio is around four to one. So it's important, as we go out and make our



cases, that we say this is a strategy that is not about giving up the economy. It's not about giving up jobs, it's not about giving up quality of life. On the contrary, it makes our corporations and cities more competitive, more resilient, is net job creating, and reduces the tax burden on citizens.

I want to thank you again for this speaking venue and the idea that **we can embrace a future that's a positive one, not a less bad one.** Thank you.

**00:31:15 LANA WANG:** Thank you, Greg, for that good news and for showing us that we can do this. So our next speaker who's in that vein is Santa Clara County Supervisor David Cortese. He's a visionary local government leader, who has a long record of public service and dedication to the environment and conservation efforts. He has proposed and successfully implemented far-reaching climate action goals in his county, including receiving 100% of the county's electrical needs from renewable resources by using the County surplus lands for solar power facilities. He has just passed a Resolution on Climate Restoration in Santa Clara County, and is encouraging local government leaders to follow his lead, and make their cities and towns carbon-negative. So, let's hear from Supervisor Cortese.

**00:32:11 DAVID CORTESE:** Thank you very much, honored dignitaries and guests. It's quite an honor for me to be here today, as I'm sure it is for many of you, as the United Nations itself begins to convene for the 74th time. I want to thank Rick Parnell for the invitation to be here, to represent the place where I come from, and hopefully to represent, beyond that, many of you. 55 years ago, John F. Kennedy, our 35th president of the United States, inspired a new generation of Americans by voicing the powerful challenge, "Ask not what your country can do for you; ask what you can do for your country." Today we face a new question for another new generation of Earth dwellers. As we recognize the undeniable climate destruction wreaked for more than 100 years, we must go further than any one country, city or region, as greenhouse gases do not respect political borders, nor political partisanship.

Today, the question for all of humanity across the world is: "Ask not what the planet can do for you, but ask what you can do for the planet, and humanity

itself". That is a question that must be examined not only by mature human beings, it is also a question thrust upon the next generation. Those who are children today are potentially the greatest victims of the greatest man-made existential threat to the planet in all of history. This is a generation that grew up with the climate crisis they will have to deal with the rest of their lives. It is this generation that is determined to help change our planet's fate, and they expect their local decision-makers to do the same. We have created for them a great debt and as the United Nations Declaration of Human Rights said so eloquently, we owe to the child the best that we have to give.

My government is a local province in California we call Santa Clara County. Globally, we are better known as Silicon Valley. In this area, I am elected to represent a community of two million people. Regionally, I represent the San Francisco Bay Area, a metropolis of eight million people, nested around the Pacific Ocean, threatened by sea level rise on our own shores. In Santa Clara County, we lead, not follow. We innovate, not replicate. That is true not only of our role in emerging technologies, but also of our role in public policy. We have changed the world by exporting the technology of the information age, beyond local and national borders. As I stand here today, I call to action all those who stand with us to reverse the destruction of our planet, especially local officials who are closest to those they represent. Unlike ordinary humanitarian efforts, we can't rescue our global neighbors. No airlift will suffice this time. No peace emissaries will save us from this destruction. No technology export from Silicon Valley will end this crisis, though some will help.

The global implementation to respond to this crisis will occur one individual at a time, one town at a time, one city at a time, one county or province at a time, until we have knit together a global movement that is unstoppable. We are at an important junction in our history. What can you do for your planet? Let me share what we have done within our own political and community borders, in my hometown, and ask you to do the same within your own local communities. **If you are a city or county or province, declare a Climate Restoration Emergency now. In a single parliamentary vote, or a single executive action, you can pledge to use every resource, every**

tool available to you, regardless of your resources, to address this crisis. Santa Clara County has already done so, and I was told as I arrived here today, we are the first in the United States to do exactly that.

- Push to make your own government 100% renewable. We have already done so.
- Shift your fleet procurement to green vehicles. We've already done so.
- Start a youth climate club in your community, empowering your children to change the world. We have already begun to do so.
- Create green energy utilities and enroll your local households and business customers, leading them away from fossil fuels. We have already done so. In fact, it's called Silicon Valley Clean Energy.
- Adopt policies that will reduce or eliminate vehicle miles traveled in vehicles idling on roadways. We have already done so.
- Adopt reach codes requiring carbon restoration in your own building codes and permitting processes in your cities. We have already done so.
- Invest in renewable energy storage as efficiently and as quickly as you can. We have done so.
- And protect your natural and urban forests. If you have farmland, preserve it. Yes, we have farmland in Silicon Valley. And last year we launched an effort to preserve 12,000 acres.

As a local government, call upon your local and global networks to expedite this critical work. That includes local Rotary Clubs, locally active NGOs, and local humanitarian peace and human rights organizations. Call upon the nonviolence networks in your own communities, some of those founded by the United Nations Session for Non-Violence, and other such grassroots movements inspired by the works of Gandhi and Dr. Martin Luther King and Cesar Chavez. Because, make no mistake, we're seeing climate change is violence on humanity, and it will increase the risk of conflict across the globe. Yes, this too, we have done Silicon Valley.

There are no excuses for inaction. You don't have to be a wealthy community. While some actions require capital investment, most require education, organizing, storytelling, community networking, political will, along with emotional and spiritual commitment. These are ancient forms of investment.

At the very least, each of us can do what our ancestors would've done. As Lilla Watson said, "If you've come here to help me, you're wasting your time, but if you've come here because your liberation is bound up with mine, then let us work together." There is no humanitarian rescue mission here. I'm not here to tell you what to do. I'm here because your liberation is bound up in mine, as we ask ourselves, what can we do for the survival of humanity?

Thank you very much, and thank you again for the opportunity to be here with you today.

**00:40:51: LANA WANG:** Thank you, Supervisor, for leading by example and having the political will on Climate Restoration. And now, we'll move onto a fireside chat, which will look at the financing needed, and the financing opportunities, around Climate Restoration. Dr. Erica Dodds will lead the conversation. She holds a PhD in interdisciplinary evaluation and an MA in international development administration. She also serves as the Chief Operating Officer for the Foundation for Climate Restoration.

**00:41:26 DR. ERICA DODDS (ED):** Joining me momentarily will be Tom Baruch. He originates startup companies focused on resource-scarce and climate-sensitive markets, including energy, air quality, water, food and agriculture, out of his family office in San Francisco, California. He's a senior advisor to Breakthrough Energy Ventures and has provided seed funds to more than 80 startups in the last five years. And he was a founding member of Obama's National Advisory Council on Innovation Entrepreneurship.

We've heard a lot of speeches today about the role that we all have to play in restoring climate. I think one area that we all agree is a major obstacle to the climate right now is the lack of financing. So I'm very excited to have Tom here as an investor and venture capitalist, to talk about the opportunities to engage with the financial sector to restore the climate. Can you speak a little bit about the scale of the opportunity that you see for investment in this area?

**00:42:55 TOM BARUCH (TB):** I think we're seeing now a transformation that is going to take place. I think we have no choice in the matter. As previous speakers have emphasized, we clearly need

to fix the problem. And one of the blessings of our time over the last 50 years has been the opportunities to nurture innovations, where Silicon Valley has been a primary player, but there have been other regions in the world that have also participated. Beginning with the late 1960s mainframe computing, we got involved in the PC. The PC actually was a huge innovation, because it allowed connectivity. It allowed people to talk to each other digitally, and that created a power that we never had before, and it was led by a very brilliant entrepreneur named Steve Jobs.

From there we went on to the Internet, and we went on to mobile computing. And more recently, new technologies have arrived in the area of cloud computing and artificial intelligence. And all of these are being put to work. The availability of these technologies, per se, is not going to change anything. What will change things is the ability to put these technologies together in productive ways. This is an era that we're now entering, and this is an era which I would propose as being prime for addressing climate problems.

**ED:** It sounds like you see the innovator's mindset of Silicon Valley as central to Climate Restoration efforts and solutions. To what degree do you think Silicon Valley is set up to take on that challenge? You mentioned that we have the technology and the innovative mindset, but what else is missing, if anything?

**TB:** At this point, what's missing is the wealth. The fact is that there was a so-called cleantech debacle that took place the first 10 years of this century. A lot of people lost money. Nobody really stopped to try to understand why. It seems that when people lose money, they just want to forget about it. They don't try and go back and say, what did we do wrong, or what was wrong about our timing, or what are the themes that are operative now but were not operative then. You wash your hands clean of it. You've lost money, and you just go on. It's silly, but that's how people operate.

**ED:** What are your chief concerns when you're looking at a potential investment opportunity, and how do you assess whether it's worth pursuing?

**TB:** We always start with understanding the need. And most investors in early stage companies are

more concerned with glorifying technology. For us, it's: where is the pain? And we address the pain by assembling the very best people in the world with the very best ideas, and with cost-effective products that will, at the end of the day, enable the provider of those products to make money.

**ED:** So in the context of Climate Restoration, why don't you think that there's been much investment in this area yet, and what do you think has been holding us back?

**TB:** I think the thing that's held us back the most is the inability to recognize the power of multidisciplinary technologies. More specifically, the evolution of information technologies that I talked about earlier, but more importantly, an evolution of biology. We've seen an enormous upside, I think in exponential terms. The upside in biology is even greater than what we saw in technology. One measure of exponential biologics is the number of accessions to DNA banks, and that number is two times greater than the number we've seen in increasing computing power. So there's been a huge upside in biology.

It's ironic, sitting here in the United Nations today, to think that the two most important technologies that we have available today, to cure kinds of problems you're talking about, are number one, biology. Contemporary biology found its beginning with Watson and Crick, who in 1953 discovered DNA. And [number two], in information technology, with the semiconductor, 1948, and subsequently the integration of multiple semiconductors on the single chip, to create integrated processors, which was Intel. And from those two beginnings that took place immediately after the worst half century in the history of the world, I see in many ways those as gifts. And these gifts now can be used productively to address issues like climate, or they can be used destructively. We have this choice, and it's a choice we can talk about in a place that has the historical significance of the United Nations.

I believe that the availability of 25 years of biology, since the mid 1990s, or 65 since the discovery of DNA, plus discrete semiconductors— Peter [Fiekowsky], you probably remember discrete semiconductors— today there's lots and lots of

semiconductors on a single chip, and we figured out how to do that much to the credit of people like Peter. Now we take these, and we merge them, and we can create products that will benefit the climate in many ways, and resources in many ways, not just oil and gas. We're talking about air quality. We're talking about water.

**ED:** I'd like to dig in here a little bit more. You've been talking about how our increased knowledge of biology and technology have increased the connectivity between individuals and disciplines. Why do you see that connectivity as so critical in areas like the climate?

**TB:** Well, let's say the area people are most familiar with is in electricity, and it's the destructive aspects of generating electricity from oil and gas, and the innovations that have been made in the past number of years in solar. Solar today is available in certain parts of the world at a cost of about one and a half to two cents per kilowatt hour, which cannot be achieved any other way. The challenge with solar has been to enable the grid to deal with electricity that's produced from renewable resources. [Because of] the kinds of information technology that we've been talking about, we are now able to use renewable energy and get it to a customer without everything you have to do, starting with oil and gas, then treating it in some sort of thermal way that itself uses a lot of energy. The sun is free, and we're blessed to have it. We have a company we started, as a startup, and we've been able to increase the power efficiency of conventional polycrystalline silicon semiconductors by a substantial number for virtually no cost.

Another area that I was mentioning before was water. To the extent that climate is a problem of this era, the problem of the next era will be water. But the answers are all folded up in the same intersections of technology that I'm talking about. So magic is in the intersections. That's where the opportunities are going to be. And I can give you many samples. One company we're involved with is harvesting water from the atmosphere. And their cost today, at very low volume, is about two cents per liter. Relate that to how much you'd pay for a liter of water you'd buy in a convenience store: two

dollars? So this is an immensely promising technology.

The optimization has come about because the founders of the company were encouraged to really pay attention to who is the customer, and how are they going to get the water. They had a vision, which they call the democratization of water, which means that you can pull water off the roof of your home, instead of having to access the Sierras or the Adirondacks, cut and divide all the way up to the street in front of your house, and then through the water meter to your house. No more. It's gone. We've democratized water. So everybody will have access to water. And people will make money doing it. Isn't that great?

**ED:** Yeah, it sounds like there's a lot of connection between efficiency, equity, democratization, and the work that needs to be done in the climate sector. So that's amazing to see that that work is already in process in so many areas.

**TB:** Yeah, venture capitalists always get the bad rap, but there are some goodness in us. And the fact that we make money, that's good for everybody.

**ED:** So you mentioned earlier that you're more concerned with the market than with the product, and I think that's a really fascinating way to think of things. You said that you're interested in identifying pain points. Can you talk a little bit about how you go about that, and what does a pain point look like to the ordinary person?

**TB:** Yeah. Pain usually ends up costing people money. So the opposite of pain is value proposition. Can we create a value that is worth paying for? Generally you can, like with the water example. Currently, another company we're involved with, again at the intersection of biology and technology, is actually making protein from methane, which sounds totally illogical, but that's the era we're living in: a very illogical one. We can make it. We just raised a substantial amount of money from British Petroleum, and the company will be making it from natural gas that's currently being flared off in the Persian Gulf because there's no market for it. We're now turning it into very valuable protein, and got rid of all the cows who've been making that protein in

the past. So, the carbon opportunity we have is huge. And we can deliver on that.

**ED:** When you say it's huge, what kind of scale is the opportunity in climate investments?

**TB:** Our feeling is that when we take full advantage of solar and electrifying the grid, we can create new investment opportunities in the range of one and a half trillion to 10 trillion per year over the next 20 or 30 years. That's a huge amount of disruption, and consider that the gross national product for the world is \$86 trillion and we can move anywhere from \$1 trillion to \$12 trillion by the disruption that's going to take place in the energy industry. Now, the other question is who's going to deliver that disruption? Is it going to be Exxon, all the other names [of fossil fuel companies]? Or is it going to be some new entities? And are these new entities going to take advantage of this disruption and create huge market value? And that means investment opportunities for everybody.

**ED:** So I know for myself, and I'm sure for other people, when you start saying names like Exxon, I get a little tense and I know that a lot of people in my generation are pretty quick to put the blame on the oil companies, on the corporations, and get really concerned when any of them are involved in Climate Restoration efforts. Can you speak to the opportunity there is an involving everyone in this type of effort?

**TB:** Yeah. Okay, well I think that things have changed in the world in the past 50 years. So we were globally, a very resource-driven economy. Resources were king. Anybody that owned resources— oil, gas, iron, nickel, et cetera— that's where wealth tended to be concentrated. With the advent of new technologies that is changing. It will be new businesses, new methods of delivering products to customers. The water example I gave you earlier, that product is delivered through cloud computing. That's how it gets to the customer and that's one of the reasons why we can save the customer a lot of money; we don't have to run it through pipes all the way from the Catskill mountains. So this is an enormous opportunity to make people's lives better, because it will be cheaper.

**ED:** Given how huge the scale of the problem is and how much opportunity there is, you said something

really striking to me earlier which was, "Think big and start small." How do you deal with that urgency of the climate crisis when you have to start small in so many different areas?

**TB:** Because you have to do it right. It's as simple as that. One of the big problems we had 20 years ago during the previous run-up of so-called cleantech, was that people didn't think before they acted. It was more about, build it and they will come. Build me a big plant for converting biological waste to fuel and somebody will buy it. Well, it didn't turn out that way because during that same period, the price of oil dropped from a hundred dollars to \$50 a barrel. You had, in that situation, risk around scaling the technology, and risk about whether the customer would buy it or not. And the people that invested all that money really got nothing out of it, because they didn't think about it. They didn't think about who's going to buy the product? How much are they going to pay for? How much is it going to cost me to make it? And who are the various participants in the market channel? Who's going to touch the product from the time it comes out of the ground or wherever, to the time it ends up at the gas station pump? How many people are going to touch that and how much economic value are they going to add? That's easy to figure out. It doesn't cost any money.

So you can think big and say, "I'm going to get rid of all those service stations and have nothing but electric vehicles." That's fine; great idea! But now you have to think about where's the solar farm going to be that's going to provide the electricity, and all the different factors related to that. If you spent that money in the beginning, which again is minimal, you will save a lot of money in the end. The money that you invest very, very early is the most expensive money you'll ever raise, so you should raise as little as possible.

**ED:** Yeah. So it sounds like the shift of thinking that we've seen, as people are starting to invest more in climate, is going from a product-oriented, "push the product out" mindset, to a more people-oriented, context-oriented mindset of looking at where something is needed and how to fill that gap efficiently. That's great. My last question for you is, as an investor, how do you think about the legacy

that you want to leave for humanity and future generations?

**TB:** I want to leave the world a better place than where it was when I started, which won't be too difficult given the time I was born... The fact is, we have lots to do, but we have an engine that can help. I'm not saying Venture Capital is going to solve every problem, because it's going to take a movement of people, like you people out there, the UN, banks, regulatory authorities, County of Santa Clara. Everybody has to play. This is not trivial. This is big. Don't think somebody's going to fall out of the sky and fix it. It's not going to happen that way.

**ED:** Great. Thank you so much. It's been fantastic insight into the financing industry, so everyone please join me in thanking Tom Baruch.

**01:06:39 ROXY AZARI AND TAHANI SALAH**

*Mother Earth: I see you. I see how you hold your belly, how the current winds have you bent with worry.*

*Mother Earth, as grim as the world may seem, a movement of hope is brewing. Steps are being taken to help better our climate. A mission of restoration has been placed in front of us. It's time to take CO<sub>2</sub> off the back burner, fill our air with a healthier tomorrow.*

*Now, there are solutions to help reduce the CO<sub>2</sub> in our atmosphere. We are looking deep into saving our Earth's oceans, to restore the polar ice caps, for today, tomorrow, and forever, so that our children can see the world the way it was meant to be seen: on land that is green, on ice that is cold, on soil that is watered.*

*We have this image of our daughters playing in fields that are fresh, in air that lifts them into infinite possibilities. And we are at a time where we can give our children that life.*

*We have the capabilities to create change and make efforts towards reducing our own carbon footprints, from skipping the taxi, to having virtual international meetings, reducing what we don't consume and what we do consume, ending our dependence on fossil fuels, skipping energy sources, making sure people in power understand the*

*urgency of this movement-building, making a change one step at a time.*

*Now is the time, say it with me. Now is the time*

**AUDIENCE:** *Now is the time.*

*Say it again. Let mamas hear it in Brooklyn.*

**AUDIENCE:** *Now is the time.*

*So all of us, and our future children's children, can have a future. It's more than the facts we have to put in front of the world. It's putting our differences aside. We spend our days and nights trying to prove who we are. Obsessing about the impact of our legacy's dents.*

*But in the end, what will we leave behind? What will be the make of your carbon footprint?*

**01:09:27 LANA WONG:** Thank you, Roxy and Tahani. I am a big believer in the power of the arts for advocacy and development, so I am thrilled that we have these young creative voices here today from Create 2030.

Our next two speakers will focus on solutions for forests and Arctic ice. First, we'll start with the UN Environment Program's Assistant Secretary General, Mr. Satya Tripathi, a development economist and lawyer with over 35 years of experience. He's worked with the UN since 1998 in Europe, Asia, and Africa, on a variety of issues including climate change, human rights, democratic governments and legal affairs. He was instrumental in establishing the Tropical Landscapes Finance Facility in Indonesia and also the Sustainable India Finance Facility to leverage private finance for public good at mega-scale for transformative impact in developing countries.

Mr. Tripathi will tell us about UNEP's policies and action on climate and reforestation. Then we'll move on to Arctic ice with Dr. Leslie Field, the founder and CEO of Ice911 Research, a non-profit dedicated to restoring the Arctic ice and polar habitat. Before working on the ice, she did high-impact research and development work on micro electromechanical systems at HP labs and labs. She is an inventor with 54 issued patents and also teaches a class at Stanford every year called Engineering, Entrepreneurship and Climate Change. Dr. Field will tell us about Ice911's work restoring Arctic ice and their solution to save

our Arctic, which will in turn help us save the planet. Please welcome first UNEP's Mr. Satya Tripathi.

**01:11:08 SATYA TRIPATHI:** Thank you, thanks a lot. Good afternoon ladies and gentlemen. When I look out to those of you present here today, I see a sea of champions: people that really care about the planet, people that are really interested in making a difference, and without whom the planet is truly doomed. I'm not a doom and gloom person because I believe in the power of possibilities. But allow me to preface the situation we are in before I go on to talk about forests and forest landscapes.

We're at a time when we have roughly eight to nine years. People often talk about the Paris Agreement in glowing terms and they should because it the first time that we have something universal, everybody coming together and agreeing on something, even if it was voluntary. But if the Paris agreement is implemented in full, if everybody keeps to their promises, we're talking about 3.2 degrees C of global warming. Not 2 degrees, not 1.5 degrees. That's a fact.

Then IPCC told us that we really need to stay to two degrees for a variety of reasons. Then comes, of course, more science, more evidence that the unraveling of the web of life is happening at a pace that even the brightest of scientists didn't visualize before, because it's all interconnected. The IPCC report tells us that we have almost lost a million out of 8 million species. We haven't even figured out the interlinkages between all these species, how they exist in a fine balance. We have anecdotal evidence of bees falling prey to the colony collapse disorder, and that you have to put them in big trucks and transport them 2,000 miles to get pollination done. That's when we wake up to the reality that bees are beneficial to our existence. And one could go on about so many species that we haven't even figured out how they have benefited our existence on this planet and our growth as the predominant species at the apex of the pyramid.

That's the challenge we are dealing with. If we have to stay at 1.5 degrees, we cannot pick and choose. Every solution that comes our way, we must grab it with both hands. And the solution that I think has the biggest impact is going back to Mother Earth, going

back to nature. Way back to working with nature, not working against nature.

I'll cite an example. It was mentioned that I had a role in setting up something called the Sustainable India Finance Facility. We started two and a half years ago working with the farmers in the Andhra Pradesh state of India. It's a state with about 50 million people on the East coast of India with a coastline of about 1,000 kilometers. They have 6 million farmers, smallholders, working on 8 million hectares of cropland. From 40,000 to today they have converted 750,000 farmers to zero chemical farming. And so much so that the Prime Minister of India, who's responsible for developing 120 million farmers and 160 million hectares of cropland in India, announced recently at the UNCCD in Delhi that India will use zero budget natural farming going forward.

That's scaling on a transformative level, at a system scale. So the solutions are there. And what does it do, by the way? Let me go back to Andhra Pradesh. Andhra Pradesh currently uses 3 million tonnes of chemical fertilizers every year, that go into the landscapes, into the water bodies, into the aquifers, into the ocean. When that gets taken away, ecosystems will come back with a vengeance. We have seen that happening in the last three to four years in independent site verifications that we have done. From five to ten earthworms per cubic meter of soil (the global healthy soil metric is about 70 per cubic meter), we're finding 120 plus, without exception, in the 1,400 sites. That's how fast nature heals and forgives. So we need to find the humility in us to go back to nature.

We talk about advanced technologies like carbon dioxide removal, solar radiation modification; there's a lot of ideas. I just came from the decarbonization forum hosted by the president of Columbia University, and I was with some of the brightest professors and we had a great conversation there. And my question was yes, we have a lot of technologies that could potentially work, but the point is, this is about people and species. We still need to regenerate our water systems. We still need to get our air back.

The carbon is a problem, fully understood, but every professor in the room, the brightest of the minds— I

was so full of respect for them— they're talking about increasing material efficiency, not carbon efficiency anymore. Let's say you want to produce methanol, a biogas, there's a lot of talk about that. Do you want to produce it from the air by taking carbon and electricity that is not being used in remote locations? That's an idea in play. But you could also let the sugar cane or the trees or the plants fix the biomass, which is half the job, and instead of burning it and putting it all in the atmosphere for poison for people to breathe, can we just put the resources there and change it into bioethanol or methanol?

My point is that there are [technical] solutions, but let's focus on nature. That's what the Secretary General's Climate Summit focuses on: solutions that are available, that are within our capacity to deliver. Let's focus on that, while not losing sight of any advanced technologies that might become available. I'm not someone who's blind to the possibilities of science. I actually greatly welcome it. But let's not lose sight of what we have and look for things that are way out on the horizon, because we have only eight years to solve these massive problems. People talk about, "Let's let's find a place for us on Mars." Let's make planet Earth habitable for human beings again, before we talk about far-off planets. Thank you so much.

**01:18:36 DR. LESLIE FIELD:** That's going to be a hard act to follow. Thank you very much for your insightful comments. As you've heard a couple of minutes ago, I'm Dr. Leslie Field, and I am so thankful that I was invited to be here. This is a deep, deep honor for me to be here speaking to all of you. Everyone in this room is bringing everything that we have to the table to work on helping the world's climate situation. What I bring to the table, especially, is my concern as a citizen; my concern as a mother of two children, whom I love dearly; as well as my skills and perseverance as a technical problem solver and inventor and an engineer. I'm here today to talk about an issue that's of concern to us all, is impacting every person on Earth, and is central to every sustainable development goal that we have. And that problem is, the Arctic is melting.

For 700,000 years, over the entire course of human evolution, our Arctic Ocean's sea ice shield has reflected most of the summertime sun, keeping the

Northern Ocean and atmosphere cool, the Northern Hemisphere stable, cool, livable. The jet stream has recently become a chaotic, looping set of winds, devastating the world's historic weather patterns. Heat waves, extreme cold, severe storms, droughts, floods, and fires are widespread, tragic, and ever-increasing.

I'd like to show a two minute [video from NASA](#) on sea ice loss over the last several decades. It starts out slow, but pay attention because one of the points is this accelerates. You can see Greenland here, you can see ice. The more reflective the ice is, the brighter it is, the older it is, the more effective at reflecting sunlight. This video will make clear to you that under current conditions on Earth, there is no natural way back, no way that bright ice in the Arctic is going to somehow reappear by itself anytime soon. Between Alaska and Russia, the Beaufort Gyre has been our historic ice shield, but is lessening in its ability to do that over time. What's happening every winter is we're regrowing ice, but what's happening every winter increasingly is we're growing less reflective, multi-year ice because so much ice has melted that most of it comes back as first-year ice, not as reflective, doesn't last as long into the summer. Until recently, very few people realized this was happening... That our historic heat shield in the Arctic is gone.

The risks from this situation are profound and they're increasing. As the exposed Arctic ocean is absorbing solar heat, the ice melt that was once primarily a consequence of the warming world has become a driver. And this driver— the loss of reflective ice in the summer— is now multiplying by a factor of one and a half the global temperature rise that the world is seeing. It's adding another 50% to the impact of the greenhouse gases in the atmosphere. It is a crisis. We're absorbing this energy, instead of reflecting it, into an ever-warming ocean and into melting the less and less amount of ice that's left.

Everyone in this room, I can hear it, we all know it, is worrying that we're going to exceed the temperature targets of the Paris Accords. Restoring Arctic ice is absolutely necessary to keep the increase below two degrees Celsius and will help considerably with sea level rise as well. If we do nothing, how much will temperature increase above



one and a half or two degrees C or even much more, as we've just heard, with ever increasing dire consequences? Every degree matters and every degree is fighting for.

The particular work that we have undertaken here at Ice911 Research is to rebuild the reflectivity of Arctic sea ice, a natural system, in the place where it's been— so I agree with following nature— using a surface coating of a simple and safe material: hollow glass microspheres, mostly silica, a material that all life on Earth has evolved with, prevalent in all our ecosystems. So we've been doing small-scale tests in order to develop and test a reversible and safe lever to mitigate climate devastation.

Open ocean reflects very little incoming summer solar radiation. 35% more gets reflected by young ice, still more by multi-year ice with snow. But with an extremely thin layer of this material in strategic areas of the Arctic like the Fram Strait, expert climate modelers we're working with show we can rebuild ice Arctic-wide by treating as little as half a percent of the area of the Arctic. We want the minimal intervention to reboot the maximum effect... We're turning young ice into something more effective with hair's widths of this material, [and] we're rebooting it's ability to turn into multi-year ice by making it last longer.

We're doing as natural an intervention as we can. We do all our work with a commitment to first do no harm. Because I'm doing this for my kids, I have no interest in making the world worse, and we are looking very, very diligently for any untoward side effects as we go. So far, we haven't found any, but we're going to keep looking because it's our duty. The years of small scale laboratory and field testing that we've done have always been with appropriate permissions, [and] transparency. We are 501(c)(3) non-profit. We're accountable.

We have the potential to rebuild ice throughout much of the Arctic, but speaking to the UN gives me the opportunity to say that... there are no easy answers, but there's prudent insurance that we can put in place. And organizations like the UN can help develop the governance frameworks, the permitting procedures, the support, the funding for responsibly and openly exploring and testing, on a small scale, the most realistic and promising solutions to rebuild

the stable climate and thriving ecosystems we all need. The relatively small costs of building this urgently needed decision-making and funding framework and doing this small scale rigorous testing, and then the climate modeling of these solutions, will allow us to establish what the pluses and minuses are, what the risks and benefits and costs are, so that we can have a path forward in Climate Restoration, arbitrated by an international and fair-minded body such as the UN.

The cost of this framework and technical development work and adoption will be repaid manyfold in the prevention of tragic and widespread climate impacts worldwide: trillions of dollars of impact and so much tragedy. Saving Arctic sea ice appears to be the task that humanity must take on first, to stop the acceleration of warming and instability, to give the world time to adopt the rest of the measures needed to stabilize climate, such as decarbonizing the economy and atmosphere. Decarbonization will take more time to fully implement because of the widespread infrastructure and economic changes it will require. In the meantime, we can work to save lives, property, and ecosystems by saving and restoring Arctic ice first, giving needed time for the rest of the hard work on decarbonization to together get us on track for a sustainable future.

By urgently prioritizing such Arctic restoration work, we can lay the groundwork to avert a future that otherwise may include an ice-free Arctic, global temperature rise of five degrees C or more, the risks of increasing Arctic methane releases, and the tragedies that would come from collapsing ecosystems, leading untold numbers of climate refugees, life and death battles over necessary resources to survive, and perhaps even endless war. The transitions we need to make in the world's economy and ecosystems will include balancing short term benefits— such as using resources that the Arctic melt is now uncovering, and enjoying a temporarily increased prosperity— balancing these against the longer term devastation on our future if we do so and if we continue as we have.

As a concerned citizen and mother, I ask your help, every single one of you in this room and more, to develop governance, permitting and funding frameworks to make these important decisions and

priorities, including to start as soon as possible the urgent work needed to restore Arctic sea ice and the work on decarbonization, to move us toward this sustainable future humanity needs, for the sake of every living being on Earth. Thank you.

**01:31:38 LANA WONG:** Bravo. She got a standing ovation. Now, let's talk about people power—mobilizing millions and creating movements like the Global Climate Strike that's happening on Friday. We're moving to a panel now with Dr. Margaret Klein Salamon, the founder and director of the Climate Mobilization, who will lead the discussion. The Climate Mobilization is a volunteer-powered organization that has helped catalyze a burgeoning Climate Emergency movement. Over 1,000 cities and counties around the world have now passed Climate Emergency Declarations based on the climate emergency policy framework that The Climate Mobilization has developed. Please welcome Dr. Salamon and the Mobilizing Movements panel.

**01:32:42 MARGARET KLEIN SALAMON (MKS):** I'd like to introduce a really distinguished panel of movement builders, and that's Vanessa Wruble of March On, also very active in the climate strikes, which I look forward to hearing about; Lisa Russell of Create 2030; and Kathleen Rogers of The Earth Day Network. In between these panelists, I think we have something like 40 to 50 years of experience in the climate movement and in doing this work. But from my perspective, I think everything has changed in the last year, basically with the rise of Extinction Rebellion, the school strikes, the Green New Deal in the United States and the thousand global cities declaring a Climate Emergency.

My question to start, to the three of you, is first of all, how do you see this historical moment? In what ways is your experience and what you have learned relevant? What do you want to tell this new and burgeoning movement? And in what ways is it not relevant? Is it like a whole new ballgame?

**01:34:24 KATHLEEN ROGERS (KR):** Thanks everyone. It's a great question. I started at Earth Day Network 16 years ago and I came with a prejudice about my own movement, which was that we weren't diverse enough, not talking to more people other

than ourselves. And so the mission of my organization became to diversify and activate the environmental movement worldwide. We're 192 countries and, of course, we do Earth Day, which has about a billion people, but our goal is to build a giant sustainable movement. It's critical that we do that right now, and it's also quite rewarding to see what's going on with the youth activism, and they're very young.

This is also built, like every movement, on the backs and history of movement-building generally, and then specifically within the environmental movement, the long history and science that went behind that first Earth Day. That remains still the largest civic engagement event in human history: 20 million people on the streets. However, I have deep faith in the youth and other communities now, and I see it as a very different, brand new time. I was hoping that, at least for the 50th anniversary, if not a couple of days from now, we might see more than that on the streets.

**MKS:** Can you talk about your involvement in the climate strikes?

**VANESSA WRUBLE (VW):** Sure. For those of you who have not yet gone, go to [strikewithus.org](http://strikewithus.org). Once you're on the site, you will see that there are over 800 climate youth climate strikes planned for the 20th, this Friday. You can find a strike near you, you can start a strike, you can get guidance to plan a strike, and all the information you need. We don't know how many people to expect out on the streets because it really varies widely from place to place. But we do know that there will be over 800 across the country, and I can almost guarantee, I would put money on, over a thousand youth climate strikes. The youth climate strikes are being organized by a very diverse coalition. The youth piece of that is being sort of more centrally organized by the Future Coalition, which is the youth arm of the organization I run, March On.

**MKS:** You've been working on March On for several years now. And I'm wondering in what ways is it similar to the March On work, and in what ways is it a new beast?

**VW:** So just to take it back a little bit, I was one of the founders and one the primary organizers for the Women's March on Washington. I organized the one

in DC. I think what those marches in 2017 taught us was the strength of distributed organizing— the strength of organizing that didn't rest in centralized power, but that was all over. That's how we got so many people out into the streets. In every city, town, state, there were a bunch of women who were actively working to get all the women out into the streets. And so we use that model at March On to do our work moving forward.

For example, in the 2018 midterms we did something called March On the Polls, in which we marched people to the polls to go vote. We did that in a distributed way. It is never guided by us— we do have a central staff— but what we do is support what other activists around the country want to do and how they want to do it because they know how best to do it in their communities. Organizing this way is the exact way that, for the most part, that youth climate strikes have been organized— giving people the tools, letting people know that it's possible and doing outreach, but letting youth, wherever they are, decide how and what they want to do and being there to help them, to support them.

**MKS:** Thank you. Lisa?

**01:38:59 LISA RUSSELL (LR):** So I work in a very interesting crossroads here at the UN, at the intersection of arts, social justice, and global development. And people are like, "well, how does that all work?" And I like to joke that it's because I'm multilingual— I speak the UN language and I also speak the artists' language. And they are very, very different languages and very different cultures. But for me, I'm not surprised at the role of the creative community to affect change. Throughout history, if you look at most major social movements, artists have been very critical in sparking conversation about moving people towards movements. But I think what's interesting for me now is that artists are no longer being seen as sort of the 'starving artist' that does, like, fluffy work and 'let's save the planet' anymore.

If you're actually following trends in global economies, the creative economy is one of the fastest growing economies in the world. And I actually have now hard statistics to talk about how powerful the creative economy is, because the SDG fund stated that the creative economy has generated

250 billion US dollars in the economy and has generated over 29 million jobs. So in terms of the power of the creative economy, I think we're just starting to recognize [it]. I also read this incredible book called "The Rise of the Creative Class" by Richard Florida and he basically states that the reason why creatives are going to be so powerful is because you can't really automate creativity. So where I stand, I feel very optimistic. I'm very hopeful. I'm very involved in the intersection of creativity and arts and storytelling and UN and social justice. But I feel like because these languages are so very different and the cultures are so very different, there needs to be more work in helping us speak better, having artists understand more about global diplomacy and what's happening at the UN, because I think it's very confusing to a lot of people, and likewise, training the UN on how to work effectively with artists.

And before I wrap up, I just want to say that artists will come here if they're invited. I think they just don't know how to get there, and I just want the people, the artists who are in the room, who I invited or who came because of social media posts, to raise their hand and let's just recognize who's here. We have musicians, we have poets, we have dancers, we have DJs. They will come. But I think that there needs to be a better communication between folks who work in the creative economy and people who drive policy and work in the UN or NGO sector and the climate action movement for us to be most effective.

**MKS:** Thank you. My next question is about framing and how it's impacted the movement. There's two parts of this question. One is the emergency framing— the idea that this is not a problem that needs to be solved gradually, but that this is an emergency that needs to be solved right now. That's a frame that is close to my heart and has really grown in prominence. I was very pleased to see a lot of the speakers referencing the climate emergency. So that's one issue that I'd love to hear your thoughts on and how that's affecting the movement.

The other is about restoring a safe climate— this is the idea of, you know, what should our climate goals be? Should it be to limit warming to two degrees of warming or 1.5 degrees of warming? How much

catastrophic loss are we willing to tolerate and make our goal? What I love about the global Climate Restoration movement is the idea that no, we shouldn't aim for any warming— we need to restore a safe climate.

I'm wondering about your thoughts on those two frames and how they work together or how they're in tension with each other. One thing we talk about at The Climate Mobilization is maximum fear, maximum hope— that these two things can and should coexist in our hearts. Who would like to start that one?

**KR:** Thanks, and by the way [referring to Lisa] I want to talk to you after, because we really view this as true about art— if you want to change culture, you have to use culture. That's a large part of what we do at Earth Day, and for our 50th anniversary, which is coming up, with a giant Arts for the Earth program. So I'll have to talk to all of you. I got involved with Climate Restoration through Peter and Rick, two of the organizers, because I've been in the climate business a long time, as a lawyer and litigator and policymaker, but I had also found that the two things I worked on, mitigation and adaptation, were both super depressing. They were, because it's a cave, and I'm not saying it's not incredibly necessary [to mitigate] for climate. We're sandbagging Manhattan. We really have to look at ways we can mitigate and adapt to this, particularly for low-income communities worldwide because they're the ones, as we know, who suffer.

But when I was introduced to this concept [of Climate Restoration], I viewed it as a critical third leg of the stool, not just because the technologies exist that will allow us to move forward on a lot of these things— not that some aren't problematic; you know, the great vacuum cleaner in the sky and injecting CO<sub>2</sub> into the earth, I don't want to throw us off our wobble, neither of those things— but I really believe that restoration projects are abounding. There's investment in it.

People are super interested in solving the problem, but more important for me, somebody who's been in this movement a long time, is it creates a sense of optimism, which has been sorely lacking. I mean, I've been part of the movement where we had little children standing on train tracks— a little girl, if any

of you remember, with this giant locomotive coming down the tracks. It was one of the first really moving climate change ads, I think Environmental Defense did. But in the end, I think we all agree that the super negativity alone, without that sense of optimism, isn't going to work.

And so restoring the climate, for me, is something that I've already found because I've appropriated it, and I'm running with it. And we're global, we're in 192 countries, and it has been an incredibly positive experience. Whether I'm in India or Puerto Rico or anywhere that I'm working, I'm finding that people want hope. So I think it's really important. Thank you.

**MKS:** Thank you. So, two new narratives arising in the kind of larger climate conversation: climate emergency and Climate Restoration, and how those fit into the movement. Are they inspiring the movement?

**VW:** Sure. I think that there's a sort of fine line we're trying to walk right now, in terms of, as you were mentioning, letting people know how dire the situation is on the one hand, and making sure that people still have hope so that they can remain activated on the other. And I find that the work that I do, and I feel like I'm very lucky in what I do, is that I am able to sort of get out from under the possible heaviness of, you know, 'we're doomed', because I work every single day on making sure that we do everything in our power we can do, and mostly for me that's by activating the masses and applying political pressure in the streets.

I feel like it has been useful for me to have both frameworks... I remember when I first heard about Climate Restoration from Rick, he sort of just said a few words and it stuck in my mind and I found myself sort of repeating his talking points from then on— without actually knowing that much about it— because it does infuse it with optimism. It does say, "We're not going to settle for this."

A lot of times when I'm thinking about mass movements, my whole thing is go big or go home. I want millions of people out in the streets or we're not even doing this. And I like that same framework of Climate Restoration. Like we actually don't know what's possible. We don't know if we can achieve better than what we've set out to achieve right now,

so why would we try and limit ourselves? So I like that framing of it. I think it's worthwhile.

At the same time, I don't think that they contradict each other. I think that the framing of climate emergency— you know, how many people here have been screaming it from the heights for the last 10, 15, 20 years. I'm amazed that the world's finally starting to wake up. And, honestly you've done a great job with that. I think what you've done is a service to the entire world, in creating that sense of urgency. So I think you need both things. You need to say, we can do better and we can aim for better—we can imagine a world that is not just livable, but amazing and beautiful. And, if we don't do it right now, there's the doom.

**MKS:** Thanks. So Lisa, I'd like to add onto this question for you. I'd be really interested in hearing specifically how these two frames, climate emergency and Climate Restoration, are resonating with your two groups, with artists and with the UN.

**LR:** Yeah. So I primarily work with young artists and artists of color. So a lot of them come from disadvantaged communities. And so to frame climate as sort of this climate emergency— is it more of an emergency than police brutality or poverty or unemployment? It's really not. So for me, I think what resonated most in that— I think the platform that would work in the artists community— is this idea of a climate apartheid. The Secretary General has brought about this idea that the rich and the privileged and the powered are going to be able to pay their way out of the suffering that the poor are going to inhabit.

So again, the two languages— like, for me, climate emergency isn't maybe as effective as calling it a climate apartheid. And in that way you can do more intersectionality work between patriarchy and racism and looking at systems of oppression when it deals with these critical topics.

I also like to bring up that it's really great that there are more artists and creatives being welcomed into the UN and this development thing in general, but I feel like there's a lot of tokenism. It's like, "great, you're entertainers..." And Tahani and Roxy, I've known since they were 16, they are great entertainers. But what I would argue is that if you can survive as a working artist in New York City—

a professional working artist, not somebody who plays guitar when you go home from your nine to five, but actually surviving in New York City or a major urban area— the incredible critical thinking and problem-solving skills you have to have to put food in your mouth is incredible. So why would policymakers talking about Climate Restoration, climate action, not want those brains in a room talking about combating climate change, right?

I feel like there is a message of hope. I just got back from Italy. I was a juror for a youth film festival that uses cinema to link youth with sustainability, and while we were there, I got the opportunity to showcase this really incredible technology that uses renewable energy. It was founded [by] a musician who was basically trying to do his shows, couldn't get booked in venues, and so created this renewable energy way of doing his shows. He uses a mobile sound system and setup to use both human powered [energy and] renewable energy. So he has fans of his in front of his show powering his show. As a filmmaker I was like, we could have filmmakers powering film festivals. And I just want to shout him out because he's here, his name is AY-MusiK. He has figured out this technology and I was like, let's join forces and create sustainable solutions for the creative economy and become the first industry that is using renewable energy so that we are energy independent.

In my field, I use tripods, I use cameras, I use batteries. We create a lot of e-waste. We use a lot of energy. So we need to come up with solutions for our industry to help us do our work more sustainably. And I think we have the capacity to do it. It's just that, you know, we need to take artists' waste a little bit more seriously in terms of policy and programs and finance and economics and all of these other worlds. Even today I was noticing— and this is no pointing fingers on anybody, because it happens all the time— whenever somebody rattles off all the sectors that should be involved as partners— academia, private sector, government— creatives are never mentioned, ever. I think we need to change the idea, the narrative, about our role in this movement.

**MKS:** Thank you. Given this, in my mind, truly unique historical moment— I mean, the presidential candidates in the United States are now competing

with each other on who has the strongest climate platform; they're having climate-specific events; there's the climate strikes and the Extinction Rebellion global rebellion— I mean, this is all happening right now. What do you see as the greatest opportunities in this historical moment?

**LR:** I really feel from my perspective that building institutional credibility of artists and all these other sectors is necessary. So we need friendlier artists policies here at the United Nations. We need corporations to sit down with us and ask us about how we can contribute to this better. We policy makers to invite us to have a seat at the table.

And I have to give a lot of credit to the Foundation [for Climate Restoration], and to Diana Walker in particular, because I was throwing ideas at her left and right. She was like, 'wait a minute, you want to do what?' And then she was like, 'well, we need this.' And we worked together really, really well. But not only do we have artists and entertainers here tonight, which was fantastic, but she also allowed me to have a seat at the table and to discuss— you know, using my brain, not just my films, to contribute to this conversation. So I would say, and I have been saying, to build institutional credibility for artists and all other sectors, government, private sector, the UN, et cetera.

**MKS:** I just want to add to that. I think it's particularly important in the realm of climate, which has been kind of classed as a science issue— a rational, let's say masculine, approach. Science, yes. Engineering, absolutely. But that's not it.

**LR:** So I'll just make a quick anecdote. I made this film called "Mother's Cry," a [poetry video](#) on climate change and it was released on Slate Magazine online during the SDG Summit in 2015. We made that in two days in my kitchen and I spent \$72 on archival stock footage and music. It screened at the UN twice. It had the best title on Slate Magazine ever, it said, "The Deeply Moving Video that Every World Leader Should See," right during the SDG Summit, and it got accepted in over 35 international film festivals.

You don't need a lot to do a lot, but we were helping to reframe the conversation about climate change, particularly among young people of color. And I think you're right, I think we have the ability to

change the narrative. I think more artists need to be able to access this space so they can learn the UN language, and likewise, I would invite NGO people to come out into our space and our culture so that you can learn how to better communicate ideas to the gatekeepers of culture, basically.

**MKS:** Thank you. Vanessa, what is the greatest opportunity this month, this year?

**LR:** For?

**MKS:** Saving the world.

**VW:** Well, there's a small thing going on Friday, you might've heard about it— over 800 strikes across the country, actually probably more now, as I mentioned earlier. I think that is a great opportunity. I hope that everyone will get out into the streets. I hope that you will see the infectious hope of the youth, and their drive and their determination to make that happen. And I think that that is really just the beginning. I think that is really going to be the launch of a massive youth climate movement, that I actually think is growing into the new phase of an adult or older people climate movement, that you'll see roll out between now and 2020. I think that one thing that everyone has taken to heart is the idea that we have, what, 10.5 years— that's ingrained into our heads. But then— [for] anyone who read that BBC piece, and certainly everyone in this room who know far more than I do— we have 18 months in order to make that 10.5 years true. So I think that there's going to be an enormous pressure from here to 2020, and I really invite everyone in this room to join the movement.

**MKS:** Can I just follow up with the idea of strikes? Obviously, school strikes— Greta Thunberg really popularized this idea. I know the Sunrise Movement is planning on an escalating strike campaign. What is the particular value of strikes?

**VW:** I think this is something that the youth could better speak to, but I will try and paraphrase on their behalf. I think the idea is to stop business as usual— to say, we need everyone's attention and what is the use in us pretending that we have a normal future ahead of us given what's happening. So we're going to stop business as usual to make people focus on it.

**MKS:** Yeah, as Extinction Rebellion says, 'Tell the truth and act like that truth is real.' So don't just keep going to school and keep doing what you're doing.

**VW:** Right. If this is a climate emergency, then what does that mean? How do you conduct your life in that world?

**MKS:** It's a very challenging question.

**VW:** We could have lots of late-night talks.

**MKS:** Yeah. But the strikes are a great answer.

**VW:** I agree. Everyone come strike on Friday.

**KR:** Couldn't agree more. By the way, we have four parallel programs— just to keep going back to the arts. One of them is EarthRise, which will be a youth-led global strike on Earth Day in 2020. We have others that make Earth Day accessible— the Great Global Cleanup, the giant global citizen science project that's really critical. And Arts for the Earth. So we couldn't agree more. We've engaged poets and orchestras and dance and music. It's a fabulous program and I can't wait to talk to everybody in this room.

With respect to the strikes, I do think it's critically important that this be— it's not exactly the beginning because this has been going on for a while— but it is a new, giant beginning, a new era. I'm super steeped in movements. I study them. I look at them. I emulate them, or try to. 2019's critically important, but 2020 is a bumper crop year. We have 60 plus countries that are holding national elections, including this country. Some of the sustainable development goals are due, the climate reporting is due, the biodiversity summit in China is coming in 2020. There's a list that's as long as my arm, day after day after day of monumental moments in time that will benefit incredibly from the youth movement standing behind it, in front of it, in the middle of it.

I do think, above all, that because the youth have been doing this and because now they've embraced, let's call them older people, that you will see their parents or their school friends or universities really bumping it up. And finally, to everybody, we're hoping that 2020, including Earth Day, will really change things. Sometimes I think I can change the world 180 degrees, but then I fall back and say all

we need is five, six, seven degrees of change and then we'll catch the wave. And so I'm super excited about this week. We had a big press conference in DC with the youth groups yesterday. It was really amazing and well-attended by mainstream press, which was exciting. But they all got up and said the same thing 'We're open, ready to do this. We'll do it without you, but we hope you'll be with us.' So I think everybody will be.

**MKS:** How can we, as adults, best support the youth movement?

**KR:** Well, first of all, not swamp them. I think that's really important. There are a lot of environmental groups and other groups that are edging a little too close, wanting to just capitalize on it, not in a bad way. But let them lead. They're so smart and they're so committed and they're super anxious. I talked to these kids. One of the questions was about their anxiety. So we've got to be there. I watched all the kids, every one of them had a parent there— calm, steady, picking up the pieces, looking for their clothes, making sure they don't leave anything behind. And that's our role. Eventually we'll be behind them and helping them along, but we have to support them and we have to let them lead.

**MKS:** Thanks.

**VW:** Yeah, I fully agree with that. I've been put in my place many times when I imagined myself to have good ideas and it turns out that youth have much better. But I would be remiss if I didn't say the thing that the youth most need, which will shock no one in this room, is money. They need funding. The youth can change the world, but they need the resources that adults have. So that would be my wish for the room.

**LR:** And I would, of course, say, work through the arts because you can attract young people in all sorts of activities or ideas. Engage them in music and film and poetry. If you do creative workshops, there's a lot of teaching artists in this room that will engage young people. It's like, 'Come learn teaching. Oh, by the way, we're going to talk about SDG number 12 about responsible consumption and production.' And on that note, we are writing an Artist Declaration, where a lot of young people have provided comment and feedback, and we're going to get that Artist Declaration into the hands of young artists, who are

going to be out around in different places reading the declaration to try to get our voices into the climate action movement from an artistic voice. Thank you.

**MKS:** Okay, so I'll see everybody on Friday.

**LANA WONG:** What a fantastic panel. Thank you, thank you for bringing the voice of the arts here. I have a background as a teaching artist, so I definitely want to put that plug in. I love what Kathleen said about letting them lead.

And our next speaker has done exactly that in her 19 years on this planet. I'm so thrilled that Katie Eder, the co-founder and executive director of Future Coalition is with us today. Future Coalition is built by youth activists for youth activists. It's a national network that fosters community and collaboration among youth leaders and youth led organizations, and gives them the tools, resources, and support to power their ideas and amplify their impact. So since launching in 2018, Future Coalition has organized young people around climate change, voting, and gun violence prevention. The coalition has grown to over 40 youth-led organizations and thousands of youth leaders around the country. They coordinated over 500 student walkouts for the Walkout to Vote that contributed to a record youth turnout during the 2018 US midterm elections. And in Katie's hometown in Wisconsin, that led to a whopping 91% of the town voting. So it is my honor to introduce this inspiring youth leader, Katie Eder.

**02:06:19 KATIE EDER:** Good afternoon everyone. My name is Katie Eder. I'm 19 years old, I am from Wisconsin, and I am the executive director of Future Coalition. This Friday, on September 20th, millions of young people and adults across the US and around the world will strike from school and work to demand that world leaders take action to address the climate crisis. On Friday, we will launch a new era of the climate movement that will bring us to the solutions to save our futures. I first learned about climate change when I was in sixth grade. I had taken a class where we read "An Inconvenient Truth" by Al Gore, and my perspective on the world and humanity competed shifted. I thought, 'No one must know about climate change. If people knew about it, they would be doing something.'

I remember going home after school one day and telling my dad what I have learned. And I remember

him telling me not to worry, because climate change wasn't going to be something that would affect me in my lifetime. He said it would be an issue that people would feel in a couple of centuries, and by that point, we would have solutions to fix the problem. That was almost eight years ago, and now the problem has worsened more than anyone would ever imagined. We have just over 10 years to take action before we see irreversible effects of the climate crisis, and that action must begin in the next 18 months, or we will see climate catastrophe that we can't even begin to understand.

Climate change is real. I live in Los Angeles and for two weeks last year, the sky was filled with smoke from the Woolsey Fire that wiped out nearly 100,000 acres of land. There are still 1,300 people missing in the Bahamas from Hurricane Dorian. Farms in the Midwest were destroyed from flooding this spring. This is climate change, and it still can get so much worse. **Our existence as we know it will not continue if we continue down the trajectory that we are on.** Something has to be done. Elected officials and world leaders have shown us that they do not have the courage to take the action necessary to save our planet. And so we must tell them, we must show them why it's important.

Climate change can be overwhelming. It can be scary to the point that all you want to do is block it out, but we can't, because if we do, who will stand up for us? Who will protect us?

Over the last year, young people in the US and around the world have found a voice in a way our generation never has before. We are leading the largest coordinated global social movement of our time and it's because that's the only thing left to do. We don't get the privilege, the opportunity to sit around and dream about the future because frankly, we don't know if we're going to have one. We're scared. We're afraid. But that doesn't mean we give up. That doesn't mean we stop trying. It means we dream bigger. It means we dream louder. It means we take action now. We're not going to sit around and watch our futures be destroyed before our eyes.

My organization, Future Coalition, our goal is to provide connective tissue between youth-led organizations working to create change in their communities. For the September 20th climate strikes



we brought together the leading youth-led climate organizations in the US, as part of the climate strike coalition, to ensure that collaboration was happening on every level, and that we were unified in our vision and message for the strike. Our collective power is what is going to save us. Coming together, putting our differences aside, and uniting over our common goal is the only thing that is going to save us.

September 20th will also be the first global climate strike where young people have asked adults to join in, to unite with us. In the US, it's the first time that the energy of the new wave of young climate activists has been brought together with the foundation and infrastructure of adults that have been working in the climate movement for the last many decades. Together, we've been able to plan what will be the largest climate mobilization in US history. And more than that, by working together, we've been able to ensure that Friday is only the beginning. Friday is not a culmination of the work already done, but rather a launch of a new era of the climate movement and the work that will come before us. And everyone is invited to join us.

This movement is a movement from the grass roots. It's being led by young people in hundreds, thousands of cities across the country and across the world. This is a people's movement. It means something that young people globally are united behind this movement. It means something that Palestinian and Israeli kids are striking side by side. It means something that young people are skipping school to stand up for the right to have a future. The solutions are out there; there is still time to do something. There is still time to restore our climate. There is still time to fix what we've broken. But we must act now.

Eight years ago, my dad was wrong when we first talked about climate change. He didn't know— most people didn't know— but now he does and so do you. And so there aren't any excuses anymore. My dad will be striking this Friday for me and my siblings because he knows he has no other choice. And now it's time for adults across the world to follow in that example. Strike for your kids. Strike for your grandkids. Strike for the kids that live down the street from you. Because we need you. We need each of you. Our collective power is the only thing

that is going to save us. And so it's up to each of us to make the choice— to choose to fight. Fight for us. Fight for the planet. Fight for the future. Because we want to be able to dream again. Thank you all so much, and I hope to see you out in the streets on Friday. [Standing ovation.]

**02:12:49: LANA WONG:** Katie, I want to let you know, I'm going to be out on the streets with you, so thank you. Thank you for that energy, and that is why you let young people lead. Especially 19-year-olds like Katie.

Our next speaker, Anousheh Ansari, captured headlines around the world when she embarked on an 11-day space exploration, fulfilling her childhood dream to become the first female private space explorer, the first astronaut of Iranian descent, and the first Muslim woman in space. She's also the CEO of the XPRIZE Foundation, the world's leading designer of incentive competitions that tackle humanity's grand challenges. She and her family sponsored the first XPRIZE, a \$10 million competition that ignited a new era of commercial space flight.

Ms. Ansari is a UNESCO Goodwill Ambassador and also co-founded the billion-dollar Fund for Women, with the goal of investing \$1 billion in women-founded companies by 2020. She will tell us about XPRIZE's Carbon Removal competition and their climate work. So please welcome our final speaker, our moonshot speaker, Ms. Ansari.

**02:14:10 ANOUSHEH ANSARI:** Hello everyone. It's a real great privilege to be here and I had to jump through a lot of hoops— I just landed, literally— but it was worth it just to hear Katie speak. And that's why we're here, that's why we're doing what we're doing at XPRIZE Foundation.

So as you heard, I had the amazing privilege of being one of the very few who has been able to see our planet from space. And I have to tell you, the first time I saw Earth from space, it left a lasting impression on me. And it was this transformational moment where I saw our planet as the only home we have as humanity. I'm enamored with space flight— I would go to Mars, the Moon, anywhere— and I'm a proponent of having habitation on Mars or the Moon. But I can tell you none of them will come even close to the beautiful planet we have and no

one would be happy living anywhere else but our planet Earth.

So we need to make sure we keep it that way. And that's why we have created this amazing moonshot at XPRIZE. So the Carbon Removal XPRIZE is one of the biggest challenges that we as a team, and all of us as humanity, are facing. And we've been working in this area for a long time. We had an active XPRIZE right now, which is removal of carbon from output of the coal plant or a natural gas plant and turning it into a valuable product to create the circular carbon economy. [There are] different probabilities of how we can deal with the problem we're facing. But none of the probabilities that do not include carbon removal actually get us to where we need to be. Even if we all became vegans and drove electric cars and tried to reduce putting carbon in the atmosphere, it will not be enough to keep us below the danger levels that we need to be.

So with that, we are launching one of the largest challenges, which will be the first private incentivized prize, that's at \$100 million. The hope of this prize is to accelerate innovation. At XPRIZE Foundation, we believe that innovation can come from anywhere. And we don't prescribe any solutions. We know the answers are out there and we have to all work together to bring those answers and those solutions to the market. It can be a young student like Katie who comes up with a solution. It can be a retired artist, or it can be a scientist, or it can be any one of us sitting in this room. But it requires shining a light on the problem and putting it in a framework, which is what we do at XPRIZE. We are launching this prize and we're asking people to come up with natural solutions, engineering solutions, hybrid solutions, and creating a way for these solutions to get to the market. But we want it to be at a very large scale. This will be the most ambitious carbon removal program in the world. We're asking for teams to actually remove about a ton of carbon from the atmosphere each day and turn it into a valuable product.

We're going to be judging these solutions on five criteria. We're looking at the most cost-effective and most scalable solution, and we will look at the costs of deployment, land use, energy use, net sequestration, and also the revenue models that will be deployed by the solution. And our judges will

look at this and try to find the best solutions out there. But the most important thing about this is also that this \$100 million will not be just money at the end. It won't be the pot of gold at the end of the rainbow. We're actually going to use \$16 million of it during the term of the prize to get the teams that demonstrate the most promising solutions and give them the support they need—the investment needs, seed funding, to get them out in the market.

The solutions themselves are not enough. We've been working with entrepreneurs solving grand challenges for a long time, and our experience shows that we need to do more, especially when it comes to technologies like what we're talking about here. So we're asking a group to come together to create accelerators. There is no accelerator out there that focuses on innovators in the carbon space. So we'd like to create a carbon accelerator to help these innovators to bring their solutions to life and create businesses around it. That requires money, so an investment network of impact investors, angel investors, individual investors, funds, to help seek this in addition to the prize money is also very important. We are also looking for business alliances. If we have these solutions out there, we need to make sure that they get deployed and we need collaboration from governments and also maybe advanced market commitment—things that would enable us to make sure these solutions get into the market.

Lastly, we're going to focus our efforts with people like yourselves in this room to create policy changes which will support these technologies and these innovators out there. So we'd like to create this coalition with all of you. We're looking for sponsorship. We're hoping that we have actually people from each one of these sectors, who have, in one way or another over time—maybe not even deliberately—contributed to the problem, and this is their opportunity to become part of the solution. So we're hoping that everyone in these types of industries joins forces with us and helps us with a sponsorship of this prize that we hope to launch in 2020 and that would be the start of something big that we can all be part of and work together to implement these solutions. And as everyone, I'm sure, throughout the day has talked about, and Katie talked about, very intense collaboration and action is required immediately. So I hope this is just the

beginning and I hope that you will all join us on this journey. My contact information will be available and I appreciate Rick Parnell to join us. But it is time for action and the time for talk has passed. So anyone who wants to do something about this, I'd love for you to join us at XPRIZE and help us with the carbon removal XPRIZE.

**02:22:09 RICK PARNELL:** What an afternoon. I hope you're as inspired as I am, it was beyond my dreams. Thank you all so much for coming. I'm inspired. I will strike on a Friday, I will welcome the creative community into the Forum. It was an oversight on my part, so I learned something today. I hope all of us did. I want to sincerely thank all of our speakers and our moderator for being here and for inspiring all of us with your own stories and your own ideas. Thank you to our partners Earth Day Network and Future Coalition. Thank you Lana for being such a great MC. Thank you Diana Walker, who is always quietly in the background, for leading the Coalition for Climate Restoration.

Thank you to the entire Foundation for Climate Restoration team for the incredible work you did every day this past year to make this Forum a reality. Thank you, Rob and Lucie. Without Lucie, this would not have happened. So thank you, Lucie Brigham, from United Nations Office for Partnerships, for putting all this together.

I said at the beginning it is truly an honor and a privilege to be here at the United Nations, a place where history is being made and humanity's greatest challenges are faced. Finally, if you'll bear with me, I'd like to say a very special thank you to two incredible individuals that made all of this possible: Peter and Sharon Fiekowsky, who I'm going to ask to stand, the founders of the Foundation for Climate Restoration. It is their vision, boldness, and commitment that made the Global Coalition for Climate Restoration. Thank you, Peter and Sharon. They inspire me every single day. I hope everyone both here at the United Nations today, and those of you watching us online, will make the commitment to become a Global Climate Restoration Coalition member. Together, we can, and we will, restore the climate for the future of humanity. Thank you all for coming, enjoy the rest of your and stay tuned. And join the Coalition!

**02:24:58 END OF VIDEO**