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ADVANCING ENVIRONMENTAL JUSTICE THROUGH CLIMATE ACTION

HEARING

BEFORE THE

SELECT COMMITTEE ON THE CLIMATE CRISIS HOUSE OF REPRESENTATIVES

ONE HUNDRED SEVENTEENTH CONGRESS

FIRST SESSION

HEARING HELD
JULY 15, 2021

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CONTENTS

STATEMENTS OF MEMBERS OF CONGRESS

Page

Hon. Kathy Castor, a Representative in Congress from the State of Florida, and Chair, Select Committee on the Climate Crisis:
- Opening Statement 1
- Prepared Statement 3

Hon. Garret Graves, a Representative in Congress from the State of Louisiana, and Ranking Member, Select Committee on the Climate Crisis:
- Opening Statement 3

WITNESSES

Catherine Coleman Flowers, Founder and Director, Center for Rural Enterprise and Environmental Justice
- Oral Statement 6
- Prepared Statement 8

Nikki Cooley, Co-Manager, Tribes & Climate Change Program and Interim Assistant Director, Institute for Tribal Environmental Professionals (ITEP), Northern Arizona University
- Oral Statement 10
- Prepared Statement 11

Derrick Hollie, Founder and President, Reaching America
- Oral Statement 17
- Prepared Statement 18

Dr. R. Jisung Park, Assistant Professor of Public Policy, Luskin School of Public Affairs, University of California Los Angeles
- Oral Statement 19
- Prepared Statement 21

SUBMISSIONS FOR THE RECORD

Introduction to the Report from Center for Progressive Reform, Earthjustice, and the Union of Concerned Scientists *Preventing Double Disasters: How the U.S. Environmental Protection Agency Can Protect the Public from Hazardous Chemical Releases Worsened by Natural Disasters*, submitted for the record by Ms. Castor 48

Article from *Earth's Future*, "Widespread race and class disparities in surface urban heat extremes across the United States," submitted for the record by Ms. Castor 48

Republican Committee Staff Analysis of the average cost of electricity bills in California if the Louisiana electricity rate was applied, using April 2021 data from Saveonenergy.com, submitted for the record by Mr. Graves . 49

Letter from Matthew Jewell, St. Charles Parish President; Pete Dufresne, St. James Parish President; and Clint Cointment, Ascension Parish President, to President Biden regarding the industrial corridor that spans from Baton Rouge to New Orleans, Louisiana, submitted for the record by Mr. Graves 50

APPENDIX

Questions for the Record from Hon. Kathy Castor to Catherine Coleman Flowers 52

Questions for the Record from Hon. Kathy Castor to Nikki Cooley 53

Questions for the Record from Hon. Kathy Castor to R. Jisung Park 54

ADVANCING ENVIRONMENTAL JUSTICE THROUGH CLIMATE ACTION

THURSDAY, JULY 15, 2021

U.S. HOUSE OF REPRESENTATIVES,
SELECT COMMITTEE ON THE CLIMATE CRISIS,
Washington, DC.

The committee met, pursuant to call, at 2:34 p.m., via Zoom, Hon. Kathy Castor [chairwoman of the committee] presiding.

Present: Representatives Castor, Bonamici, Brownley, Huffman, McEachin, Levin, Casten, Graves, Palmer, Carter, Miller, and Gonzalez.

Ms. CASTOR. The committee will come to order.

Without objection, the chair is authorized to declare a recess of the committee at any time. As a reminder, members participating in the hearing remotely should be visible on camera throughout the hearing. As with in-person meetings, members are responsible for controlling their own microphones. Members can be muted by staff only to avoid inadvertent background noise.

In addition, statements, documents, or motions must be submitted to the electronic repository to SCCC.repository@mail.house.gov. Finally, members or witnesses experiencing technical problems should inform the committee staff immediately.

Well, good afternoon, everyone. Thank you for joining us at this remote hearing today. Today, we are looking at how we can advance environmental justice through climate action, and I recognize myself for 5 minutes for an opening statement.

Now, during our last committee hearing, the West faced an unprecedented heat wave, one that shattered temperature records. It melted power cables and tragically took the lives of nearly 200 Americans. The extreme heat capped the hottest June in our nation's history and scientists warn it would have been virtually impossible without the influence of human-caused climate change.

This week, unfortunately, a new and dangerous heat wave is threatening summer crops, sparking wildfires, straining power grids, and putting more lives in danger. And on the East Coast, commuters waded through waist-deep water to reach the New York City subway after heavy rains flooded underground stations across the city. There is no denying it: We are in a climate crisis, and we must act boldly to keep temperatures in check as we help our neighborhoods to adapt to threats that are already here.

From scorching heat waves to stronger storms, the climate crisis affects each community differently, but its worst effects are felt by Americans in environmental justice communities, which include communities of color, low-income communities, and indigenous

communities. That is why environmental justice must be at the center of climate action. It is why environmental justice is the cornerstone of our climate crisis action plan. And it is why today we will focus on advancing environmental justice through climate action. Throughout our history, Black, Brown, indigenous, and low-income Americans have been disproportionately harmed by pollution, and today they are more vulnerable to the effects of climate change. Black American children are five times likelier than White children to be admitted to the hospital for asthma. Latinos are twice as likely to live in areas threatened by wildfires. Communities that have few trees or places to cool off have deadlier outcomes when the weather hits triple digits. Tribes are watching their way of life disrupted by climate-fueled weather extremes, wildlife loss, and sea level rise. And in Puerto Rico, families are still living with blue plastic tarps over their homes nearly 4 years after Hurricane Maria blew away their roofs.

This is not a coincidence. Environmental justice communities have long been harmed by chronic under investment and systemic failures that make it harder for them to bounce back after disaster strikes. They have also been subject to racist zoning codes, mortgage lending discrimination, and disproportionate proximity to factories, waste sites, and other sources of pollution.

Climate change acts as a threat multiplier taking existing social and economic inequities and making them worse. That is why climate action must be centered in righting these wrongs, ensuring we do not repeat the mistakes and injustices of the past. Solving the climate crisis is about more than just reducing pollution; it is about boosting resilience in vulnerable communities, and it is about repairing the legacy of environmental racism.

And as we expand clean energy and rebuild our infrastructure, we have to be intentional about elevating environmental justice communities to make sure the benefits are reaching the most vulnerable Americans.

Thanks to the leadership of colleagues like Representative McEachin, we have made progress on this front as we listen to the priorities of environmental justice communities and translate them into solutions. We passed President Biden's American Rescue Plan, which included critical funding for environmental justice programs at EPA. We also passed the INVEST in America Act, which makes record investments in mass transit, expands funding for water infrastructure and resilience, and creates a groundbreaking program to reconnect environmental justice communities divided by highways.

This is going to be a very important hearing for all of us, and I look forward to hearing our outstanding witnesses.

At this time, I will turn it over to Ranking Member Graves for his 5 minute opening statement.

[The statement of Ms. Castor follows:]

Opening Statement of Chair Kathy Castor

Hearing on "Advancing Environmental Justice Through Climate Action"

Select Committee on the Climate Crisis

July 15, 2021

As prepared for delivery

During our last Committee hearing, the West faced an unprecedented heat wave—one that shattered temperature records, melted power cables, and tragically took the lives of nearly 200 Americans. The extreme heat capped the hottest June in our nation's history. And scientists warned it would have been "virtually impossible" without the influence of human-caused climate change. This week, unfortunately, a new and dangerous heat wave is threatening summer crops, sparking wildfires, straining power grids, and putting more lives in danger. And on the East Coast, commuters waded through waist-deep water to reach the New York City subway, after heavy rains flooded underground stations across the city. There is no denying it: we are in a climate crisis. And we must act boldly to keep temperatures in check, as we help our neighborhoods adapt to threats that are already here.

From scorching heat waves to stronger storms, the climate crisis affects each community differently. But its worst effects are felt by Americans in environmental justice communities, which include communities of color, low-income communities, and Indigenous communities. That's why environmental justice must be at the center of climate action. It's why environmental justice is a cornerstone of our Climate Crisis Action Plan. And it's why today we'll focus on advancing environmental justice through climate action.

Throughout our history, Black, Brown, Indigenous, and low-income Americans have been disproportionately harmed by pollution. And today, they're more vulnerable to the effects of climate change: Black American children are five times likelier than white children to be admitted to the hospital for asthma. Latinos are twice as likely to live in areas most threatened by wildfires. Communities that have few trees or places to cool off have deadlier outcomes when the weather hits triple digits. Tribes are watching their way of life disrupted by climate-fueled weather extremes, wildlife loss, and sea-level rise. And in Puerto Rico, families are still living with blue plastic tarps over their homes, nearly four years after a hurricane blew away their roofs.

This is not a coincidence. EJ communities have long been harmed by chronic underinvestment and systemic failures that make it harder for them to bounce back after disaster strikes. They've also been subject to racist zoning codes, mortgage lending discrimination, and a disproportionate proximity to factories, waste sites, and other sources of pollution. Climate change acts as a threat multiplier, taking existing social and economic inequities and making them worse. That's why climate action must be centered in righting these wrongs, ensuring we do not repeat the mistakes and injustices of the past. Solving the climate crisis is about more than just reducing pollution. It's about boosting resilience in vulnerable communities. And it's about repairing the legacy of environmental racism. As we expand clean energy and rebuild our infrastructure, we have to be intentional about elevating EJ communities, to make sure these benefits are reaching the most vulnerable Americans.

Thanks to the leadership of colleagues like Rep. McEachin, we've made progress on this front, as we listen to the priorities of EJ communities and translate them into solutions. We passed President Biden's American Rescue Plan, which included critical funding for EJ grant programs at the EPA. We also passed the Invest in America Act, which makes record investments in mass transit; expands funding for water infrastructure and resilience; and creates a groundbreaking program to reconnect EJ communities divided by highways.

This summer, we have an opportunity to further advance justice by passing the American Jobs Plan, which would direct 40% of the benefits of infrastructure investments to EJ communities. The American Jobs Plan includes crucial programs to elevate communities of color. And it gives us a once-in-a-lifetime opportunity to build an economy that works for everyone.

With that, I'd like to thank our incredible panel of witnesses for being here, and I look forward to our conversation.

Mr. GRAVES. Thank you, Madam Chair. And I want to welcome Ms. Flowers, Ms. Cooley, Dr. Park, and Mr. Hollie. Thank you for joining us today. Looking forward to your testimony.

When we talk about environmental justice, I think it is important that we talk about disadvantaged communities. I think it is important that we look at policies that have been carried out and use evidence to inform our policies, our bills, our legislation, our strategies as we move forward to a clean energy future, a cleaner energy future in the United States.

And I know that my friends, Mr. Huffman and Mr. Levin, are going to be shocked to hear me cite California as an example today, but I do. I want to cite California because I think it is an example of how flawed policies can actually be regressive and can actually exacerbate challenges that some of our disadvantaged communities may be experiencing. It can cause disproportionate burdens to those communities.

In the State of California, a coalition of civil rights leaders have actually sued the state over the aggressive impact of climate policies on their disadvantaged communities. As a matter of fact, you can look right now and these programs, these policies have resulted in the State of California, Californians, paying 50 percent more, on average, for electricity costs and about 80 cents more per gallon to fuel their cars. And that is compared to the national average. As a matter of fact, in the lawsuit that was filed against the State of California, citing these regressive policies, they say: "California's climate change policies, and specifically those policies that increase the cost and delay or reduce the availability of housing, that increase the cost of transportation fuels and intentionally worsen highway congestion to lengthen commute times, and further increase electricity costs, have caused and will cause unconstitutional and unlawful disparate impacts to California's minority populations. . . .

California's climate policies guarantee that housing, transportation and electricity prices will continue to rise while "gateway" jobs to the middle class for those without college degrees, such as manufacturing and logistics, will continue to locate in other states."

And I think we have seen that. California's policies have resulted in some of actually the highest emissions growth in the United States, and it is a disturbing trend in that you are causing disproportionate impacts to disadvantaged communities and actually resulting in higher emissions.

And I remind you, the State of California is the only state with five severe nonattainment areas in the state. Therefore, as the chair talked about, cases of asthma and other health challenges that disproportionately impact our kids certainly are exacerbated in that state as a result of policies that are purported to help to address climate change and reduce emissions.

My home state of Louisiana if California rates applied, we would be paying approximately double the electricity bills that we currently pay in our state. And if we are going to talk about—if we are going to talk about disproportionate impact and environmental justice, I want to remind the committee, my home state of Louisiana, we have one of the highest African-American population percentages in the United States. We have one of the highest percentages of those impoverished.

Let's talk about environmental justice. The justice to our state, to our citizens whenever the U.S. Army Corps of Engineers levied

the rivers causing the greatest loss of wetlands in the continental United States constituting 90 percent of that loss and, unfortunately, many of my friends that are on this committee that talk about their willingness or their desire to restore the environment and protect disadvantaged communities are repeatedly fighting our efforts to restore our coastal ecosystem to protect these communities from dangerous storms, hurricanes, and floods.

And so it is especially concerning that, as we move forward, we move forward based on science, based on data, based on evidence, and building upon the success that the United States has had in reducing emissions more than the next 12 emissions-reducing countries combined.

So, Madam Chair, with that, I look forward to hearing from our witnesses.

And I yield back.

Ms. CASTOR. Without objection, the members who wish to enter opening statements into the record have 5 business days to do so. Now, I would like to welcome our witnesses. We will hear from prominent community leaders and researchers on why it is critical to invest in environmental justice. Catherine Coleman Flowers is the Founder of the Center For Rural Enterprise and Environmental Justice. She is an internationally recognized advocate for the human right to water and sanitation, and she works to improve access to clean air, water, and soil in marginalized rural communities. In 2020, Ms. Flowers received the prestigious MacArthur Fellowship.

Nikki Cooley is the Co-manager of the Tribes and Climate Change program, as well as the Interim Assistant Director of the Institute for Tribal Environmental Professionals at Northern Arizona University. Ms. Cooley leads a program to help Tribal Nations as they address and prepare for climate impacts. She works with Tribal and indigenous partners across the Continental United States and Alaska on climate change adaptation, mitigation, and resilience planning. Ms. Cooley is of the Dine Navajo Nation.

Derrick Hollie is the Founder and President of Reaching America, a nonprofit organization with the focus on African-American outreach. Mr. Hollie has over 25 years of experience in advertising and marketing.

Dr. Jisung Park is an Assistant Professor of Public Policy at UCLA's Luskin School of Public Affairs. Dr. Park is an expert in environmental economics, labor economics, and public finance. His research focuses on how climate change affects social and economic outcomes. In particular, Dr. Park studies the labor and human capital impacts of climate change, the prospects for long run climate adaptation, and environmental determinants of economic mobility.

Without objection, the witnesses' written statements will be made part of the record.

With that, Ms. Flowers, you are now recognized to give a 5-minute presentation of your testimony. Welcome.

STATEMENTS OF CATHERINE COLEMAN FLOWERS, FOUNDER AND DIRECTOR, CENTER FOR RURAL ENTERPRISE AND ENVIRONMENTAL JUSTICE; NIKKI COOLEY, CO-MANAGER, TRIBES & CLIMATE CHANGE PROGRAM, AND INTERIM ASSISTANT DIRECTOR, INSTITUTE FOR TRIBAL ENVIRONMENTAL PROFESSIONALS (ITEP), NORTHERN ARIZONA UNIVERSITY; DERRICK HOLLIE, FOUNDER AND PRESIDENT, REACHING AMERICA; AND R. JISUNG PARK, ASSISTANT PROFESSOR, UNIVERSITY OF CALIFORNIA, LOS ANGELES

STATEMENT OF CATHERINE COLEMAN FLOWERS

Ms. FLOWERS. Thank you. Thank you, Chair Castor, Ranking Member Graves, and all the members of the Select Committee for the opportunity to testify. Again, my name is Catherine Coleman Flowers. I am the Rural Development Manager for the Equal Justice Initiative and the Founding Director of the Center for Rural Enterprise and Environmental Justice in Montgomery, Alabama. I also serve as a Practitioner in Residence at Duke University, a member of the board of advisers for the Center for Earth Ethics at Union Theological Seminary, as well as the boards of the Natural Resource Defense Council, and the Climate Reality Project. As Chair Castor stated, in 2020, I was awarded the MacArthur Fellowship in environmental health, and I authored the book entitled "Waste: One Woman's Fight Against America's Dirty Secret." In this book, I uncovered the extent to which rural America has been denied access to sustainable and resilient sanitation infrastructure.

I am a proud native of Lowndes County, Alabama, a rural area located between Selma and Montgomery. Lowndes County, too, has as a proud history of fighting for equality and the right to vote. In addition, in the early 1900s, sharecroppers organized for jobs and justice. Many of its sons, and later its daughters, including my father, my three brothers, and myself, served in the United States military. We have a deep legacy of holding up core democratic values, even when they failed us. Most of all, I stand on the values I learned as a country girl that grew up with a healthy respect for nature, and I appreciate what our Creator has provided for us, which includes the knowledge to know when we are out of balance with Creation.

That failure is exemplified through fish kills, more powerful storms, higher groundwater tables in some areas, drought in other areas, floods, unsafe mobile homes, high electric bills, pollution, straight piping of raw sewage, or failing wastewater systems. I have often taken policymakers, philanthropists and people from both sides of the aisle, from Jeff Sessions to Doug Jones to Robert Woodson, to Lowndes County to see the infrastructure inequalities that exist and to hear from local people what is needed to address them. At the height of the pandemic, Lowndes County had the highest death and infection rate per capita for COVID in the State of Alabama. Sadly, as one travels through Lowndes County now, the fresh graves of the victims of COVID are a constant reminder of what happens when poverty, inequality, failing or no sanitation infrastructure, and climate change comes together.

The climate crisis impacts all of us, whether one is in Louisiana, which has been losing at least 25 square miles of land per year,

or in Alabama where more intense tropical storms can harm housing, roads, transportation arteries, or more valuable infrastructure. Throughout our nation, we are dealing with failing infrastructure, and it includes the most basic infrastructure, sanitation.

Because I am a country girl, I like to speak in plain English like I would if I was at home speaking to local people, my relatives. In the town of Hayneville, Alabama, the county seat of Lowndes, for more than 20 years, Ms. Charlie Mae Holcombe has been telling people about the sewage from a nearby lagoon that has been backing up into her home. Yet the failing infrastructure continues to fail, and she continues to cry for help. She is paying a wastewater treatment fee, yet all the town can provide is a pump truck to pump sewage out of her yard from time to time. The failure is more pronounced when there is a hard rain.

This is emblematic of failing wastewater infrastructure across the United States. It is something we need to address, and our rural communities should not be left to their own devices as they struggle to cope with the climate crisis and the lack of investment in sustainable infrastructure that goes back decades. Failure is repeating the same thing over and over again and expecting different results.

Despite being knowledgeable of the failures of the lagoon system, a similar design to the one in Hayneville is being planned in the town of White Hall along Highway 80. This sewage lagoon would sit next to an elementary school. The liability for failing septic tanks in this system would be transferred to homeowners. This does not consider the failures that already exist here and around the nation, nor does it account for a changing climate producing more rainfall in many areas nor does it consider the health and well-being of the residents or the nation. Yet it begs the question, how can Federal money be used to buy equipment that does not come with any service or performance warranties, especially when we know they fail not only in Lowndes County but throughout the nation?

This is indicative of the sanitation inequality that exists throughout the U.S., whether in Montgomery, Alabama, where older Black communities are on failing septic tanks or in Martin County, Kentucky, where poor White families are asking for environmental justice and good-paying jobs as well. The American Jobs Plan provides an opportunity to deal with the climate crisis head on and for guiding rural Black, Brown, and indigenous communities that are experiencing the most severe job losses, untimely deaths, poor living conditions, and health crises.

It is a chance to right some wrongs of all marginalized communities and make America a model of ingenuity where we have clean air, clean water, resilient infrastructure, and good-paying jobs for everyone. With this funding should come guardrails that would ensure that Ms. Charlie Mae will not get more sewage in her yard, lagoons are not built next to schools, and each onsite system or infrastructure placed in neglected communities should come with the same performance and parts warranties that we have come to expect from a car or hot water heater or a heating and cooling system.

These guardrails should include stringent enforcement so the people of Alabama, Louisiana, Texas, and wherever our great nation needs working infrastructure will get the relief and protection from the climate crisis. It would be neglectful not to mention cancer alley, which sits along the Mississippi River, where residents combat cancer rates due to pollution and are one climate crisis away from a catastrophic event that could overshadow Hurricane Katrina.

We can make a difference and do something now. As a child I learned in Sunday school that we all have the power to do good and change our communities for the better, and we should. Therefore, I implore our leaders and policymakers to recognize the areas outside of urban centers that do not have the privilege to flush and forget, and those who are losing their homes to sea level rise, roads that are being destroyed, and their homes do not provide safe haven from extreme heat or storms. Change the formula for disaster relief to enable all Americans to receive recovery aid and to include people that are renters, live on heirs' property, or rural communities that are not densely populated, invest in clean infrastructure for all, prioritize in communities that have been left behind, and most of all, we together should confront this climate crisis for our children, our grandchildren, and generations to come.

I thank you for the opportunity to speak before you today. It was an honor, and I look forward to continuing conversation about environmental and climate justice for all Americans. Thank you.

[The statement of Ms. Flowers follows:]

Testimony of Catherine Coleman Flowers

To the House Select Committee on the Climate Crisis

July 15, 2021

Thank you, Chair Castor, Ranking Member Graves, and all the members of the Select Committee for the opportunity to testify. My name is Catherine Coleman Flowers. I serve as the Rural Development Manager for the Equal Justice Initiative and the Founding Director of the Center for Rural Enterprise and Environmental Justice in Montgomery, Alabama. I also serve as a Practitioner in Residence at Duke University, a member of the Board of Advisors for the Center for Earth Ethics at Union Theological Seminary, as well as on the boards of the Natural Resource Defense Council and the Climate Reality Project. In 2020, I was awarded a MacArthur Fellowship in Environmental Health and I authored the book entitled *Waste: One Woman's Fight Against America's Dirty Secret*. In this book, I uncovered the extent to which rural America has been denied access to sustainable and resilient sanitation infrastructure.

I am a proud native of Lowndes County, Alabama, a rural area located between Selma and Montgomery. Lowndes County too has a proud history of fighting for equality and the right to vote. In addition, in the early 1900s, sharecroppers organized for jobs and justice. Many of its sons and later its daughters including my father, three brothers and myself served in the United States military. We have a deep legacy of holding up core democratic values, even when they failed us. Most of all, I stand on the values learned as a country girl that grew up with a healthy respect for nature and I appreciate what our Creator has provided for us which includes the knowledge to know when we are out of balance with creation.

That failure is exemplified through fish kills, more powerful storms, higher groundwater tables in some areas, drought in other areas, floods, unsafe mobile homes, high electric bills, pollution, straight-piping of raw sewage, or failing wastewater systems. I have often taken policymakers, philanthropists, and people from both sides of the aisle from Jeff Sessions to Doug Jones to Robert Woodson to Lowndes County to see the infrastructure inequalities that exist and to hear from local people what is needed to address them. At the height of the pandemic, Lowndes County had the highest death and infection rate per capita in the state of Alabama. Sadly, as one travels through Lowndes County now, the fresh graves

of victims of COVID are a constant reminder of what happens when poverty, inequality, failing or no sanitation infrastructure, and climate change come together.

The climate crisis impacts all of us. Whether one is in Louisiana which has been losing at least 25 square miles of land per year, or in Alabama where more intense tropical storms can harm housing, roads, transportation arteries, or other valuable infrastructure. Throughout our nation we are dealing with failing infrastructure, and it also includes the most basic infrastructure, sanitation. Because I am a country girl, I like to speak in plain English like I would if I were at home speaking to local people, my relatives. In the town of Hayneville, Alabama, the county seat of Lowndes, for more than twenty years, Mrs. Charlie Mae Holcombe has been telling people about the sewage from a nearby lagoon that is backing up into her home. Yet, the failing infrastructure continues to fail, and she continues to cry for help. She is paying a wastewater treatment fee. Yet all the town can provide is a pump truck to pump sewage out of her yard from time to time. The failure is more pronounced when there is a hard rain.

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Despite being knowledgeable of the failures of the lagoon system, a similar design to the one is Hayneville is being planned for the town of White Hall. This sewage lagoon will sit next to an elementary school. The liability for failing septic tanks in this system will be transferred to the homeowners. This does not consider the failures that already exist here and around the nation, nor does it account for a changing climate producing more rainfall in many areas, nor does it consider the health and wellbeing of the residents or the nation. Yet it begs the question, how can federal money be used to buy equipment that does not come with any service or performance warranties, especially when we know they fail not only in Lowndes County, but throughout the nation?

This is indicative of the sanitation inequity that exists throughout the US whether in Montgomery, Alabama where many older black communities are on failing septic tanks, or Martin County, Kentucky where poor white families are asking for environmental justice and good paying jobs as well.

The American Jobs Plan provides an opportunity to deal with the climate crisis head on in forgotten in rural, Black, Brown, and Indigenous communities that are experiencing the most severe job losses, untimely deaths, poor living conditions, and health crises. It is a chance to right some wrongs of all marginalized communities and make America a model of ingenuity where we have clean air, clean water, resilient infrastructure, and good paying jobs for everyone.

With this funding should come guardrails that will ensure that Mrs. Charlie Mae will not get more sewer in her yard and home, lagoons are not built next to schools, and each onsite system or any infrastructure placed in neglected communities should come with the same performance and parts warranty we have come to expect from a car, a hot water heater or a heating and cooling system. The guardrails should include stringent enforcement so the people of Alabama, Louisiana, Texas, and wherever in our great nation working infrastructure is needed will get relief and protection from the climate crisis.

It will be neglectful not to mention Cancer Alley which sits along the Mississippi River where residents combat high cancer rates due to pollution and are one climate crisis away from a catastrophic event could overshadow Hurricane Katrina. We can make a difference and do something now.

As a child, I learned in Sunday school that we all have the power to do good and change our communities for the better, and we should. Therefore, I implore our leaders and policymakers to recognize the areas outside of urban centers that do not have the privilege to "flush and forget," are losing their homes to sea level rise, roads are being destroyed and their homes do not provide safe haven from extreme heat or storms. Change the formula for disaster relief to enable all Americans to receive recovery aid to include people that are renters, live on heir's property or in rural communities that are not densely populated. Invest in clean infrastructure for all, prioritizing communities that have been left behind. And most of all, we together confront this climate crisis for our children, grandchildren, and the generations to come.

I thank you for this opportunity to speak before you today. It is an honor and I look forward to continuing conversation about environmental justice and climate justice for ALL Americans.

Ms. CASTOR. Thank you very much.

Ms. Cooley, you are recognized for 5 minutes.

STATEMENT OF NIKKI COOLEY

Ms. COOLEY. Ya'at'eeh. Chair Kathy Castor, Ranking Member Garret Graves, and members of the Select Committee, thank you for the opportunity to testify before you today to speak on the significant actions of Native Americans and Alaska Native communities in addressing the climate crisis. I acknowledge all of the Tribal and indigenous people on whose traditional lands we are working and living on. I acknowledge all of my relatives listening in on this important hearing.

I am of the Towering House Clan. I am born for the Reed People Clan. Maternal grandfathers are from the Water That Flows Together Clan. Paternal grandfathers are from the Manygoats Clan. I am from the Dine Navajo Nation, Shonto and Blue Gap, Arizona. I reside in Flagstaff, Arizona, where I co-manage the Tribes and Climate Change program housed under the Institute for Tribal Environmental Professionals.

A recent effort by ITEP was to convene the development of the inaugural Status of Tribes and Climate Change Report. Although, it has not been published, I will highlight 3 of the 12 chapters, including key messages and recommendations.

On the Dine Navajo Nation, we are seeing the drastic impacts of the extreme aridification of our lands. My people have to haul water for their families, their livestock, and their crops. That is getting harder due to low water levels. Our Nation has had to implement water rations, forcing families to make the hard decision to decrease or sell their livestock, which is devastating to those who depend on them for money and for food.

Our relatives on the coastline and in Alaska are experiencing the consequences of coastal erosion and water rising sea levels, forcing them to plan for relocation. In recent years, wildfires and winter storms have caused power outages, impacting those most vulnerable.

A key philosophy of Tribal Nations is "To ei iina," water is life. Water sustains our bodies, our environment, and our economies. Unfortunately, many Tribal Nations do not have reliable or adequate access to safe drinking water. The insufficient drinking water infrastructure combined with aridification, decrease in groundwater recharge contributes to the imbalance of health, of the health of the environment and people. The report recommends funding for not only the installation but operation and maintenance of water—drinking water infrastructure.

The climate resilient infrastructure could potentially decrease long-term costs and water ability to access safe and reliable drinking water is a privilege, but it is also a basic human right. I recall very vividly doing my college homework by kerosene lamps and later using a generator and head lamps. I recall the uncertainty of the mine shutting down because of job loss. Adding to that loss was the failed opportunity to train former mine workers in the reclamation process. There still is the opportunity for Tribes and local jobs—for Tribes to create local jobs and training opportunities for solar and wind facilities.

Our people will not have to leave the reservation. Tribal Nations require the support in terms of financing, training, and access to the resources. My umbilical cord is buried at my family's home, and I am continually reminded of where I come from and what I have to protect. We are inherently bonded with the Earth through our prayers, our ceremonies, and ways of life. Due to climate change, many communities are facing the threat from rising sea levels, coastal erosion, permafrost melt. This not only threatens the land base, but the people's safety, emotional, and physical well-being.

The STACC Report highlights inadequate funding, agency coordination, local capacity, and technical capacity as significant barriers for Tribes. Current infrastructure is at risk and if we wait any longer to address these threats there will be significant long-term costs.

I am the daughter of someone who worked at the Peabody Coal Mine on the Navajo reservation for over 30 years. I know all too well the need for a just transition to a sustainable economy that not only focuses on cleaner energy, such as wind and solar, but building an adequate and sustainable infrastructure that will protect the people, the environment, but also promote economic security. I stress the importance of acknowledging the unique challenges Native Americans face.

Climate change impacts are becoming more frequent giving less time for recovery, preparation, and increasing costs. I implore the committee to recognize the STACC Report as an opportunity to learn more in-depth about what Tribal Nations are doing to protect themselves and their communities against the climate crisis while exploring significant ways to support them. I implore the committee to include and recognize the leadership of Tribes in addressing the climate crisis, which is and always will be at their doorstep.

And as an elder recently said, what we do today, we do for the next seven generations. Ahxehee. Thank you.

[The statement of Ms. Cooley follows:]

Testimony of Nikki Cooley

Co-Manager, Tribes & Climate Change Program and Interim Assistant Director, Institute for Tribal Environmental Professionals (ITEP), Northern Arizona University

Before the
U.S. House of Representatives, Select Committee on the Climate Crisis

Hearing Title:
Advancing Environmental Justice Through Climate Action

July 15, 2021

Chair Kathy Castor, Ranking Member Garret Graves, and members of the Select Committee, thank you for the opportunity to testify before you today to speak on the significant actions of Native American and Alaska Native communities in addressing the climate crisis.

My name is Nikki Cooley and I am Diné (Navajo) and of the Towering House Clan, born for the Reed People Clan, maternal grandfathers are from the Water that Flows Together Clan, and paternal grandfathers are from the Manygoats Clan. I am from Shonto and Blue Gap, Arizona and currently reside in Flagstaff, Arizona where I co-manage the Tribes and Climate Change Program (TCCP) housed under the Institute for Tribal Environmental Professionals (ITEP) at Northern Arizona University. ITEP was created in 1992 to provide services and tools for Tribal environmental professionals to assist in strengthening Tribal capacity and sovereignty in caring for their own lands, natural and cultural resources. The TCCP was initiated

in 2009 to provide regional and national trainings, national conference, technical assistance and support for Tribes seeking to address climate impacts in their respective communities. This support includes assisting Tribal Nations with developing their climate adaptation and mitigation plans. Since 2009, the TCCP has served and supported over 800 individuals including 600+ Tribal representatives and over 300 Tribal Nations.

I am from the Diné (Navajo) Nation where we have been seeing the drastic impacts of climate change and we are going through a prolonged dry spell. Most of my people have to haul water for themselves and families and their livestock and crops and that is getting harder due to low water levels. Our nation has had to implement water rations forcing families to make the hard decision to decrease or sell their livestock which is devastating to those who depend on them for food and money. Our relatives on the coastlines and in Alaska are experiencing the consequences of coastal erosion and rising sea levels forcing them to plan for relocating their communities. In recent years, wildfires and winter storms have caused power outages impacting those most vulnerable. These are just a few examples of what has and is happening across the country and specifically in Native American and Alaska Natives villages.

A recent effort by ITEP was to convene the development of the inaugural Status of Tribes and Climate Change (STACC) report with an author team of over 40 individuals coming from a variety of institutions. The report aims to acknowledge and celebrate the efforts of Tribal Nations who continue to find solutions using Traditional Knowledges (TK) and Western knowledge to address the increasing impacts of climate change. Included are the efforts of Tribal communities and their partners who come from Tribal Nations, academic institutions, federal and state agencies, and non-profits. Although the STACC report will not be published until the end of August, it contains 12 chapters that includes key messages and recommendations to assist and support Tribes as they work to protect their communities, non-human relatives and cultures from drastic climate impacts.

2021 STACC Report's Key Messages and Recommendations

Chapter 1: History of Indigenous Peoples in National Climate Assessments

Key Message

Indigenous peoples have been substantively involved in national and international climate assessments for decades, and this involvement has grown, including more Indigenous engagement and authorship on the third and fourth National Climate Assessments. There is still much work to be done to engage and include Indigenous perspectives, knowledge, and expertise in climate assessments.

Recommendation

Future reforms to make NCAs more inclusive should acknowledge, learn from, and build on Indigenous peoples involvement throughout the history of the US Global Change Research Program.

Chapter 2: Worldviews, Knowledges, & Social Impacts

Key Messages

Indigenous peoples have their own systems of governance that have norms of behavior for land use and land care.

A growing dialogue among some Indigenous peoples articulates Indigenous knowledge systems through an understanding that all things are interconnected.

Legacies left by colonialism in economic, social, environmental, and educational systems have altered lifeways, traditions, practices, customs, and values of Indigenous peoples, influencing their understanding of how climate change affects their daily lives and opportunities for adaptation.

Recommendation

Climate change policy and climate science fields should respect Indigenous self-determination in governance and knowledge exchange. Indigenous peoples should be consulted meaningfully from the earliest stages of policy and research development. Legal, policy, ethical, and cultural best practices and requirements should be followed to make consultation meaningful.

Chapter 3: Actionable Science & Collaborative Climate Planning

Key Messages

Tribes are investing efforts in adaptation planning and projects to keep their communities, ecosystems, and people healthy. In doing so, they are implementing the most cutting-edge work on climate. Tribal nations are actively creating climate vul-

nerability assessments, adaptation plans, and hazard mitigation plans. Protecting traditional knowledges is an important part of these processes. Locally relevant and regionally specific information is needed to understand local climate impacts and develop solutions that incorporate local, traditional, and western knowledge for holistic solutions. Actionable science co-produced in partnership with Indigenous peoples can support Tribal resource management decision-making.

Recommendation

Support Tribal sovereignty and self-determination through Tribally-led climate adaptation planning to allow Tribes to prepare for climate uncertainty and associated risks. Management decision making should involve consultation with Tribes early and often, co-production of actionable science, and the incorporation of local knowledge.

Chapter 4: Ecosystems & Biodiversity

Key Message

Indigenous peoples' worldviews are often explicit in their centering of relationality, responsibility, and reciprocity as critical concepts. These concepts may inform Indigenous responses to climate change impacts. Examples of these impacts include increases in destructive wildfires and invasive species, and decreases in ice cover due to warming temperatures. Indigenous actions to address climate change are vast but some specifics include cultural burning, protection of keystone species, and observation and evaluation of invasive species before deciding how to respond.

Recommendation

Indigenous peoples' self-determination as practitioners of biodiversity conservation and ecological protection should be respected and reinforced. This can be accomplished through collaboration across jurisdictions; consultation and consent in the first stages of land and water planning, research, and management processes; increasing support mechanisms for the exercise of Tribal sovereignty; and the removal of barriers to Indigenous peoples' rights to implementing land management practices. Special measures need to be taken to provide access to and management of off-reservation areas to promote the retention of culturally valued species to the maximum extent possible. This helps to ensure the promotion and maintenance of Indigenous economies, traditional knowledge systems, livelihoods, meanings, and identities. Where retention is not feasible, measures are needed to support Tribes in making new relationships with newly arriving living beings.

Chapter 4.1: Air

Key Messages

The federal government must uphold Tribal sovereignty, authority, and co-management rights for air quality management. Impediments to exercising sovereignty could be removed. For example, Tribes should be allowed to perform traditional fire prevention activities on their lands, such as cultural burning of the landscape to prevent wildland fires. Tribes experience disproportionate impacts from poor air quality, including smoke/fine particulates, heat, and humidity, all of which can be connected to climate change. These factors are believed to impact rates of mortality and morbidity from COVID–19.

Recommendation

Fully engage Tribes as co-regulators in the very first stages of air quality regulatory planning, development, implementation, and enforcement. Adequate funding of air quality programs for staffing, monitoring, and emergency response to air quality issues supports Tribal sovereignty, as does addressing underlying causes of environmental, social, and health inequalities and injustices with the full participation of Tribal peoples.

Chapter 4.2: Water

Key Messages

Climate change is negatively impacting water quality, increasing ocean acidification, leading to an increase in the frequency and duration of harmful algae and biotoxin events, increasing drought, negatively impacting water and food security, and increasing both coastal inundation and riverine flooding. Each of these impacts can threaten local economies, human and non-human health and wellbeing, and Indigenous lifeways. Tribes and Alaska Natives are responding to these threats by drawing on traditional knowledge, monitoring water sources, utilizing new tools, forming partnerships, and creating adaptation and contingency plans.

Recommendation

Emphasis should be on early, meaningful, and sustained engagement and consultation by federal and state regulatory and other agencies on both water quality and availability, and concerning the associated food and water security impacts of contamination, ocean acidification, hazardous algal and biotoxin events, and risks associated with both drought and flooding. Tribes and Alaska Natives should be supported in implementing Tribally-led planning and solutions, partnerships, and cooperative efforts.

Chapter 4.2.1: Drinking Water Infrastructure

Key Messages

Tens of thousands of Native Americans do not have access to safe drinking water. Climate change has the potential to exacerbate this lack in access. Operation and maintenance (O&M) of water systems is key to sustainability, cost effectiveness, and most importantly, the ability to supply safe and reliable drinking water. Proper O&M requires adequate funding, staffing, and technical, managerial, and financial training. Proper O&M may become even more critical with climate change as systems need to respond to increasingly extreme climate events and greater uncertainty with respect to water quantity and quality conditions. Water infrastructure deficiencies provide opportunities to install climate resilient infrastructure.

Recommendation

Climate change is making it more urgent to increase resources for Tribal drinking water infrastructure and for operation & maintenance to eliminate disparities in safe drinking water access and increase infrastructure resilience to climate-related disasters and impacts.

Chapter 5: Health & Wellbeing

Key messages

Indigenous peoples' health and wellbeing (HWB) is founded on mutually beneficial relationships among humans, nonhuman relatives, and the environment, therefore HWB is highly impacted by climate change. Social-emotional health, water security, first foods security (includes foods, medicines, and technologies) are key aspects of Indigenous peoples' health and wellbeing (HWB) that merit more attention at local scales due to Indigenous peoples' unique cultures and worldviews. Indigenous peoples' resilience is strong; supporting community-defined climate strategies and capacity building within Indigenous communities will augment resilience

Recommendation

Accelerate incorporating Tribal Health & Wellbeing evaluations, priorities, and action plans into government policy, laws, and decision-making.

Chapter 6: Economic Development: Renewables, Sustainable Economies, & Carbon Offsets

Key Message

Indigenous science, knowledges, philosophies, and heritages guide Tribal self-determination in rediscovering economic sovereignty through pursuing, among other sustainable enterprises, renewable energy development, carbon sequestration via carbon markets, water and food security, and subsistence-based enterprises.

Recommendations

Address complex land tenure, fractionation, and checkerboard jurisdictional boundary issues that persist on reservation lands and may constrain Tribal economic sovereignty. Invest in capacity-building that increases in-house legal, technical, vocational, and varied fields of research expertise to strengthen Tribal economic self-determination while mitigating the effects of and adapting to a changing climate.

Chapter 7: Energy & Just Transition

An Indigenous Just Transition is an Indigenous-led transition to an Indigenous-based, non-extractive, regenerative economy that transforms community planning and ecosystem restoration. Indigenous peoples have been deeply affected by extractive industries such as the fossil fuel and uranium mining industries. Tribal lands have tremendous renewable energy development potential which could help Tribes achieve energy and economic independence, sovereignty, and stability.

Recommendation

Remove barriers to renewable energy development, while supporting Indigenous people in a Just Transition, to reduce reliance on and negative impacts from fossil fuels and nuclear energy. The most significant barriers to the development of renewable energy on Tribal lands are a lack of financing, infrastructure, training in renewable energy careers, resources to access that training, and inadequately supported Tribal leadership and staff.

Chapter 8: Cultural Resources

Key Messages

Tribal cultural resources include intangible cultural beliefs, practices, and traditions as well as tangible physical sites, landscapes, plants, and animals. Tribal climate change mitigation strategies should include considerations of both tangible and intangible cultural resources.

Recommendation

Integrate the tangible and intangible cultural, spiritual, and traditional significance of plants, animals, ecosystems, and landscapes into analyses of the consequences of climate change.

Chapter 9: Emergency Management

Key Messages

It is estimated that currently less than 25% of all Tribal nations have an Office of Emergency Management, and less than 10% of those have full-time emergency managers. Without a Tribal emergency management program, it is deeply challenging to implement and adhere to a number of federal mandates and policies. Native Americans have a long and varied history of storytelling and culturally unique ways of communicating with one another and with other communities. When seeking to communicate with Tribes, this rich tradition of storytelling and oral histories should be incorporated.

Barriers such as a lack of effective leadership at local, state, federal, and Tribal levels of government have prevented Tribal emergency management programs from making greater progress on responding to and mitigating climate-driven hazards.

Recommendation

Increase resources and support at the state and federal levels to develop Tribal emergency management programs across Tribal nations. Increase coordination with state and federally recognized Tribal nations to respond to and prepare for climate driven hazards.

Chapter 10: Protection-In-Place, Managed Retreat, & Relocation

Key messages

Many Tribal communities are pursuing protection-in-place, managed retreat, and relocation responses to climate change impacts to infrastructure at increasing rates, which profoundly impacts the well-being and safety of Tribal communities and their lands, territories, and resources. Lack of a comprehensive policy and funding prevents most communities from protecting existing infrastructure.

Recommendation

Create an all-of-government coordination structure to support Tribes in addressing environmental threats and provide adequate funding for proactive adaptation projects that empowers and honors community decision-making, sovereignty, and self-determination, consistent with the federal government's trust and treaty responsibilities.

Chapter 11: Solid Waste

Key Messages

The component of Tribal solid waste systems that is most affected by climate change and has the farthest reaching implications is that of infrastructure. An infrastructure system that continues to be stressed has lasting impacts on the amount of illegal dumping on Tribal lands, the transportation of waste in and out of Tribal communities, and the supply and demand of local recycling markets.

The data gaps that exist in the world of Tribal solid waste management are extensive and cause a delay in responding to the demands of new conditions created by climate change.

Recommendation

Allocate funding through a streamlined federal funding process (perhaps an interagency clearing house or memorandums of understandings) to ensure Tribal infrastructure is prepared to withstand changes in climate and extreme weather events and collaborate with Tribes to develop an inventory and evaluation of infrastructure related to solid waste in Tribal communities. This should include roads, facilities, and equipment. Focus on regional coordination to allow for idea sharing around climate change impacts, adaptations, and resources already available to help eliminate data gaps.

Chapter 12: Emerging Topics

Key Messages

Integrating Tribal workforce development and supporting Tribal Colleges and Universities can lead to greater climate resiliency and Tribal sovereignty, and can create opportunities to educate and train future Indigenous generations in climate related fields if administered additional funding and resources.

There are many climate-related cultural cascades including, economic and social, Indigenous relationships with the natural world, and pandemics. Tribal Nations are sovereign and the US Federal government, in meeting its intent to address climate, environmental justice, and racial justice, should work collaboratively to support Tribes to engage in internal diplomatic relations. Other collaborations across jurisdictions and Tribal governments should be considered to enhance climate-planning efforts.

Recommendation

Recognizing that climate related cultural cascades, including economic and social, affect Indigenous relationships with the natural world, Tribes and Tribal partners should support collaborative climate planning efforts across jurisdictions and Tribal governments, including Tribal Colleges and Universities and other workforce development opportunities such as prioritizing Indigenous knowledge and labor. These practices will lead to stronger climate resiliency and sovereignty efforts.

Appendix A: Funding

Recommendation

Increase funding mechanisms that are reflective of the unique needs of Tribal nations, including resources for workforce development, overall capacity building, implementation of climate adaptation projects, and zero cost-share grants.

Conclusion:

I am daughter of someone who worked at the Peabody Coal Mine on the Navajo reservation for over 30 years. I know all too well the need for a just transition to a sustainable economy that not only focuses on clean energy such as solar and wind power, but on a building adequate and sustainable infrastructure that will protect the people and environment. **I stress the importance of acknowledging the unique challenges Native American and Alaska Native villages face when it comes to the climate crisis.** Many of our people live in rural and underserved areas where they have little to no access to water, food and emergency services. The lack of infrastructure on most Tribal communities is increasing the stress on the people, natural environment and the costs of maintaining. Additionally, Tribes have a unique relationship with the environment and is often closely intertwined with their languages, ceremonies, medicines and ways of life. For example, if seasonal subsistence practices are disrupted, a chain reaction occurs. People are stressed because the foods they consume and also store until the next season is not available. This may force people to spend even more funds to make trips to the grocery stores and for many rural residents, this means traveling more than 30+ plus miles or giving into high costs of shipping food to their villages. **Climate change impacts are becoming more frequent giving less time for recovery and preparation, and increasing costs**. The STACC report provides the opportunity to learn more in-depth about what Tribal Nations are doing to protect themselves and their communities against the climate crisis. I implore the Committee to include and recognize not only the impacts Tribes face but also their leadership in addressing the climate crisis which is and will always be at their doorstep. As an Elder said recently, what we do today, we do for the next seven generations. Ahxé'héé! Thank you.

Ms. CASTOR. Thank you very much.

Mr. Hollie, you are recognized for 5 minutes.

STATEMENT OF DERRICK HOLLIE

Mr. HOLLIE. Greetings Chair Castor, Ranking Member Graves, and members of the committee. Thank you for the opportunity in allowing me to speak today.

I am Derrick Hollie, President of Reaching America, an education and policy organization I have developed to address social issues impacting African-American communities. One of the issues I do the most work on is reducing energy poverty. Energy poverty occurs when low-income families or individuals are unable to afford basic heating, electric, and gas needs. Some of these Americans spend more than 25 percent or more of their total income on their electric bill.

Now, eliminating energy poverty is a goal, I think, we all should be interested in achieving. However, in working towards that goal, we need to be mindful of how policies will impact the same communities that you claim to protect with this kind of proposed legislation. We all know the communities around the country, particularly low-income, minority, rural, and senior citizen communities suffer from a lack of access to reliable energy sources and spend proportionally much more, much higher amounts on electricity costs.

Today's hearing, "Advancing Environmental Justice Through Climate Action," sounds great. However, it will be much more prudent and productive for everyone to include energy poverty in the conversation. Why? Because the same communities and people that you claim to protect through environmental justice are the same communities and people who are struggling with energy poverty.

For the record, I do think climate change exists. However, I do not believe there is a climate crisis. And the narrative is very misleading. Also the so-called solutions are misleading as well. They promote false hope and unrealistic outcomes for America. And here is why. There is not a poll, a survey, or any research that would suggest that climate change is a major issue or even a conversation in the Black community. Because it is not, and we have the media to blame for that. Most Black people think getting shot by a police officer is the biggest issue, and we know that is not true either.

My sister is a devoted Democrat and just waited 7 months for her new vehicle to be delivered because they couldn't get the various chips needed to complete her car. Earlier this week, I had to settle on a rental car because there is a shortage of cars due to the lack of chips. There are solar companies right now voicing their concerns because they can't get the materials either that they need.

This is a supply chain issue for precious minerals like cobalt. Cobalt is needed for every solar panel, lithium battery, cell phone, and radiation treatment. Over 60 percent of the world's cobalt comes from the Congo being mined, in most cases, by little Black kids. We have a cobalt mine right here in Minnesota that is trying to be shut down by environmental groups, and to me, this is very racist and a glaring example of the hypocrisy that exists.

Why is it okay for little Black kids to mine for cobalt in Africa? Shouldn't environmental justice be a global issue, or is it just for us here in America? Right now, we see electric charging stations going up everywhere, even in communities where they are not being used. Studies show that an estimated 90 percent of electric vehicle owners earn over $100,000 a year, and then you get your

little tax credit. Most people living in these vulnerable communities do not make that kind of income and are not interested in an electric vehicle. It is very easy to see how these environmental justice policies will do more harm than good to these individuals.

In closing, my grandfather was a Black coal miner in southwest Virginia, and I had the opportunity to visit that area. The poverty that exists in rural America is different, much different from urban cities, and these people have never recovered from the mines that closed decades ago. My fear, Madam Chair, is the same will happen to healthy, thriving communities that relied on good-paying oil and gas jobs for generations.

I know plenty of folks in Houston, Dallas, Louisiana who work in the industry, and they are not in agreement with any policies, new policies or regulations, that will ultimately destroy their lifestyles. I am a licensed captain. I have fished in the Atlantic and in the Gulf, and as an environmental steward, I recognize we have to protect our planet. However, the bottom line is we need to do it sensibly.

I think we all would agree that the American people have gone through enough with the uncertainty that still exists from the global pandemic of COVID–19. The last thing we need to do is take away good-paying jobs, disrupt people's lifestyle more than it already has, and destroy an industry that we have relied on for centuries, the same industry that has allowed us to create Americans the lifestyle that we have grown to appreciate it. From petrolchemicals, including plastics, fibers, pharmaceuticals, even your yoga mat comes from fossil fuels. Roughly 80 percent of our energy mix comes from fossil fuels; that is oil, natural gas, and coal.

It was that way at the turn of the century. It was that way when my grandfather was a Black coal miner. It is that way today, and we are not going to get there by a flip of a switch. We need market-oriented policy that will allow America to keep exploring and developing our own natural resources safely while we transition to much cleaner energy and still allow us to maintain our energy and supply chain independence.

Thank you.

[The statement of Mr. Hollie follows:]

House Select Committee on The Climate Crisis Hearing

Testimony for Derrick Hollie, President, Reaching America

July 15, 2021

Greetings Chair Castor, Ranking Member Graves and Members of the Committee. Thank you for the opportunity and allowing me to speak today.

I'm Derrick Hollie president of Reaching America, an education and policy organization I developed to address complex social issues impacting African American communities. One of the issues, I do the most work on is reducing energy poverty. Energy Poverty occurs when low-income families or individuals are unable to afford basic heating, electric and gas needs. Some of these Americans spend more than twenty five percent or more of their total income on their electric bill.

Eliminating energy poverty is a goal we all should be interested in achieving. However, in working towards that goal we need to be mindful of how policies will impact the same communities that you claim to protect with this kind of proposed legislation. We all know that communities around the country, particularly low-income, minority, rural, and senior citizen communities, suffer from a lack of access to reliable energy sources and spend proportionately much higher amounts on electricity costs.

Today's hearing "Advancing Environmental Justice Through Climate Action" sounds great, however it would be much more prudent and productive for everyone to include energy poverty in the conversation. Why—because the same communities and people that you claim to protect through environmental justice are the same communities and people who are struggling with energy poverty.

For the record I do think climate change exist however I do not believe there is a climate crisis, and that narrative is very misleading. Also, your so-called solutions are misleading, they promote false hope and unrealistic outcome for America. Here's why, there is not a poll, survey or research that suggest climate change is a major issue or conversation in the black community—because it is not, and we have the media to blame for that. Most black people think getting shot by a police officer is the biggest issue and we all know that is not true either.

My sister Dana is a devoted Democrat and just waited seven months for her new vehicle to be delivered because they could not get the various chips needed to complete her car. Earlier this week I had to settle on a rental because there is a shortage of cars due to the lack of chips. There are solar companies also voicing concerns because they are not able to get the materials either.

This a of supply chain issue for precious minerals like cobalt. Cobalt is needed for every solar panel, lithium battery, cell phone and radiation treatment. Over sixty percent of the world's cobalt comes from the Congo being mined in most cases by little black kids. We have cobalt mine in Minnesota right now trying to be shut down by environmental groups. To me that is very racist and a glaring example of the hypocrisy that exist. Why is it okay for little black kids in Africa to mine for cobalt—shouldn't environmental justice be a global issue or is it just for us in America?

Right now, we see electric charging stations going up everywhere—even in communities where they are not being used. Studies show an estimated 90% of EV owners earn over 100k a year and you get your little tax credit. Most people living in vulnerable communities do not make that kind of money and are not interested in an electric vehicle. It is very easy to see how your environmental justice policies will do more harm than good to individuals

In closing, my grandfather was a black coal miner in southwest Virginia, and I had the opportunity to visit that area. The poverty that exists in rural America is different and these areas have never recovered from the mines that were shut down decades ago. My fear Madam Chair is the same will happen to healthy thriving communities that have relied on good paying oil and gas jobs for generations. I know plenty of black folks in Houston, Dallas and Louisiana who work in the industry, and they are not in agreement with new policies and regulations that will ultimately destroy their lifestyle.

I'm a licensed captain and have fished the Atlantic and the Gulf, and as an environmental steward, I recognize—we have to protect our planet, however the bottom line is to do it sensibly

I think we all would agree, the American people have gone through enough and with the uncertainty that still exists from the global pandemic of COVID 19, the last thing we need to do is take away good paying jobs, disrupt people's lifestyle more than it already has—and destroy an industry that we have relied on for centuries. The same industry that has allowed us to create a life that Americans have grown to appreciate from petrochemicals, including plastics, fibers, pharmaceuticals and your yoga mat.

We need market-oriented energy policy that will allow America to keep exploring and developing our own natural resources safely and will allow us to maintain our energy and supply chain independence.

Ms. CASTOR. Okay. Next, Dr. Park, you are recognized for 5 minutes.

STATEMENT OF R. JISUNG PARK

Mr. PARK. Great. So thank you, Chair Castor, Ranking Member Graves, and members of the Select Committee for giving me the opportunity to speak today.

My name is Jisung Park, and I am an Assistant Professor at UCLA. My training is as a Ph.D. economist, and given this training, I see my job primarily as to help us learn from data and economic statistics, not so much to make political statements, but in this case, the data seems to tell an increasingly robust and compel-

ling story regarding the interactions between climate change, extreme heat, in particular, and economic opportunity and inequality.

So, with my time, I would like to focus on three main points. The first is that we are only beginning to learn the full economic consequences of hotter temperature in part because the effects of hotter temperature are often quite subtle and may evade traditional tools of measurement. I will tell you what I mean by that in a moment.

Second, in the research that is available, it appears to be the case that heat has highly unequal consequences, not only across rich and poor countries, but also within countries, within states, and even, perhaps, within individual congressional districts, which would suggest that climate change, without remedial investments, could actually exacerbate recent trends in economic inequality.

And, third, the findings from this research, much of which has really just come online the last 4 or 5 years, suggests that not only should we be engaging in aggressive climate mitigation, that is, transitioning away from fossil fuels, but that policymakers may also want to think proactively about climate adaptation.

So, in the time that I have remaining, I would like to try to illustrate these points in the context of the effects of heat on workers. So my colleagues at UCLA and Stanford and I were able to analyze over 11 million worker's compensation claims, and what we find is that hotter temperatures significantly increases the risk of workplace injury. For example, if you are working on a day above 90 degrees Fahrenheit, this increases injuries by up to 15 percent on that day such that, in California alone, we estimate that heat may be causing tens of thousands of workplace injuries per year, many of which lead to permanent disabilities and wage loss.

Now, what is important to note here is that the vast majority of these cases are not officially recognized as being heat related because they mainly pertain to things like falling off of a ladder, being hit by a moving crane, getting your hand caught in manufacturing machinery.

Moreover, we find that heat is not only a problem for outdoor workers in construction or agriculture, but also for many indoor workers. Think of industries like manufacturing, warehousing, and wholesale.

So we think this is important, given the nearly exclusive policy attention at least to date on heat illnesses, as opposed to injuries, and also on outdoor workers. And, again, here is where the details really seem to matter when it comes to climate inequality. How much heat hurts is very much a function of individual and local factors like income, occupation, or which neighborhood you live in.

For example, we find that the effective heat on injuries appears to be at least five times larger for workers in the bottom quintile of the income distribution relative to the top, in part because they are just that much more likely to work in dangerous occupations and industries and to live and work in more extreme climates.

And these patterns of highly local climate inequality appear to persist across a number of research settings whether that is the effect of heat on learning, which is something that I have worked on, heat on violent crime, or even maternal and all-cause mortality. And, again, it is worth underscoring how this is not an issue a hun-

dred years from now. These effects are occurring right now and are likely to become much more acute, particularly given the amount of warming we have baked into the system.

Just as an example, right, Chair Castor, voters in your district, they can expect to experience over 60 additional days per year above 90 degrees Fahrenheit within their lifetimes even with aggressive climate mitigation. So the upshot to conclude, in my opinion, is that, as policymakers, we may want to use this opportunity to think carefully about how to build smart adaptation mechanisms into whatever climate policies are put in place, and at least when it comes to heat, it appears that doing so may have inequality reducing benefits as well.

So, in my written testimony, I outline some important data gaps and additional policy implications at the Federal level around infrastructure, racial achievement gaps, and air pollution, which hopefully we can speak to in more detail during the Q&A.

Thank you very much, and I look forward to our discussion.

[The statement of Mr. Park follows:]

Written Testimony of Dr. R. Jisung Park

Assistant Professor of Public Policy, University of California, Los Angeles

Before the
U.S. House of Representatives, Select Committee on the Climate Crisis

Hearing Title:
"Advancing Environmental Justice Through Climate Action"

July 15, 2021

Chair Castor, Ranking Member Graves, and members of the Select Committee, thank you for the opportunity to testify today on this important issue.

My name is Jisung Park, and I am a professor at the University of California Los Angeles. Given my training as a PhD economist, my job is mainly to describe economic data and its implications for our understanding of the issue, not to make political statements. Indeed, the bulk of my testimony will focus on what we can learn about the intersection of climate, environmental justice, and economic inequality by looking carefully at economic data.

Summary

The country has just seen two record heat waves in the West, with a third in progress now. We are just now beginning to learn the full extent of the costs of heat: in human lives, diminished livelihoods, and increased instability. What my research shows in particular is how the costs and burdens of heat fall unequally, in ways that have not been previously measured.

New work by my colleagues and me shows heat to be a much more serious problem than previously understood. Using data from over 11 million worker's compensation claims, we find that heat increases workplace injuries significantly, likely causing tens of thousands of workplace injuries per year in California alone.

Because many of these injuries are not officially tagged as being caused by heat, official statistics may significantly under-estimate the magnitude of heat's effects. We find that hotter temperature increases injuries even in many indoor environments, including manufacturing and warehousing, implying that many more workers might be exposed to climate risk than previously understood.

The effects of heat fall disproportionately on low-income workers, who are more likely to work in more dangerous industries and to live and work in already hotter places. Heat also reduces the rate of learning and human capital formation more for under-represented racial minorities and low income communities, which means climate change may exacerbate recent trends in economic inequality.

These and other often hidden impacts suggest that the distribution of heat burdens needs policy attention, alongside continued efforts to reduce greenhouse gas emissions and the ongoing rise of global temperatures. While many important data gaps remain, acting to reduce emissions now may have inequality reducing benefits

previously unappreciated. However, even if we are successful at reducing emissions, there is likely an urgent need for more coordinated adaptation and resilience policy.

1. The Economic Costs of Climate Change

Numerous studies show that climate change could cost the US economy several trillions of dollars in damages within the next 2 to 3 decades, and possibly tens of trillions by the end of this century.[1] Given the interconnectedness of global supply chains and financial markets, climate shocks may already be affecting companies' profits and putting individual wealth at risk in ways that markets have not fully accounted for.[2]

My understanding is that the committee has heard from my economist colleague Professor Michael Greenstone in a previous hearing regarding the aggregate economic costs of climate inaction and the social cost of carbon. In my testimony, I'd like to focus on the aspects of climate impacts that may be less familiar or front of mind, and which may inform our understanding of the interactions between climate policy and environmental justice.

2. Extreme Heat: A Thousand Tiny Cuts

Despite the public's greater familiarity with more visibly salient climate risks such as wildfires, hurricanes, and drought, recent research suggests that the stealthier and somewhat routine setbacks of a hotter climate may exact some of the largest costs, especially in the near term. My research provides new evidence that hotter temperature is already affecting the economy in profound and highly unequal ways, including direct physical injuries to workers and long-term effects on student achievement and learning.

Heat and Labor

For instance, consider the effect of heat on labor. We may all be familiar with the way hotter temperature—particularly in settings without adequate air conditioning—can affect our ability to concentrate and get our jobs done. But how often do those of us in this room think about the consequences of hotter temperature for our own health and safety?

New evidence suggests that extreme temperatures increase workplace safety risks significantly, especially for workers in baseline dangerous—often manual labor-intensive—occupations and industries. In research done by myself and colleagues at UCLA and Stanford, which will be published as a working paper next week, we find using data from over 11 million worker's compensation claims in California that hotter temperature increases workplace accidents and injuries substantially.[3] Working on a day with temperatures above 90°F leads to a 5 to 9 percent increase in same-day injury claims: a day above 100°F leads to a 10 to 15 percent increase.

Perhaps surprisingly, the vast majority of these excess claims are for injuries that are ostensibly unrelated to temperature: things like falling off a ladder or mishandling dangerous machinery. Also notable is the fact that, in addition to large effects in predominantly outdoor industries like construction, agriculture, and mining, heat leads to significant increases in injuries even in some indoor industries, including manufacturing, warehousing, and wholesale. This is important because over 24 million Americans work in manufacturing, wholesale, and transportation and warehousing, which is over twice as many as work in agriculture, construction, and mining.[4]

These patterns are consistent with a recent study of Texas workers which finds that a day above 100°F increases injuries by over 8 percent[5], and with research that

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[1] Burke, Marshall, Solomon M. Hsiang, and Edward Miguel. "Global non-linear effect of temperature on economic production." *Nature* 527.7577 (2015): 235–239. Hsiang, Solomon, et al. "Estimating economic damage from climate change in the United States." *Science* 356.6345 (2017): 1362–1369. Burke, Marshall, W. Matthew Davis, and Noah S. Diffenbaugh. "Large potential reduction in economic damages under UN mitigation targets." *Nature* 557.7706 (2018): 549–553.

[2] Pankratz, Nora MC, and Christoph M. Schiller. "Climate change and adaptation in global supply-chain networks." *Available at SSRN* 3475416 (2019). Bakkensen, Laura A., and Lint Barrage. *Flood risk belief heterogeneity and coastal home price dynamics: Going under water?*. No. w23854. National Bureau of Economic Research, 2017. Global Financial Stability Report: Markets in the Time of COVID–19 (imf.org)

[3] Park, R. Jisung, Pankratz, Nora, and A. Patrick Behrer. "Temperature, Workplace Safety, and Labor Market Inequality" IZA Discussion Paper (2021).

[4] https://www.bls.gov/bls/industry.htm

[5] Dillender, Marcus. "Climate Change and Occupational Health Are There Limits to Our Ability to Adapt?." *Journal of Human Resources* 56.1 (2021): 184–224.

finds hotter temperature to adversely affect cognitive performance and decision-making in both outdoor and indoor environments.[6]

All told, we estimate hotter temperature currently causes upwards of 15,000 injuries per year in California alone. This compares to official estimates of workplace heat illnesses/injuries nationally on the order of 4,000 or fewer per year.[7] Official statistics rely on medical diagnoses, but it is often difficult to determine on a case-by-case basis whether heat was a contributing cause. The National Institute of Occupational Safety and Health (NIOSH) therefore notes that official statistics are likely to under-state true heat-related risks.[8] Our estimates utilize empirical methods that measure excess injuries caused by hotter temperature within a given zip code, and all worker compensation claims regardless of whether they are officially recognized as being heat-related, and are therefore likely paint a more comprehensive picture of heat-related workplace safety burdens than many previous studies.

In part because lower income workers tend to work in more dangerous occupations, and to live and work in places that experience more dangerous heat, they are at least 5 times more likely to be hurt on the job due to heat than high income (top quintile) workers.[9] Many of these workers have relatively low levels of formal education, and have seen stagnant or declining wage prospects in recent decades.

Workplace injuries not only have large direct health care costs, but lead to persistent wage impacts that affect injured workers' entire subsequent earnings trajectories. For instance, research shows workers injured on the job face a subsequent earnings penalty of 8% on average, and 30% for permanent disability. Serious injuries that require hospitalization can also raise recruiting, training, and insurance costs for employers, and can have ripple effects for society at large in the form of increased disability payments and greater risk of personal bankruptcies. Including both the direct medical costs and indirect costs such as time away from work, increased risk of layoff, future chronic health issues, and productivity spillovers, each workplace injury serious enough to be reported to worker's comp costs society nearly $50,000, which means that the total societal costs of injuries caused by heat is approximately $750 million per year in California alone.[10]

Heat and Learning

Another example of heat's hidden impacts is on learning and human capital formation. When we think of weather-related disruptions to schooling, we may typically think of snow days; "heat days" are certainly less common, or at least they have been historically.[11]

Work that I have done shows that students' cognitive performance declines significantly on hotter days. In a study of over 4 million high school exam records, I find that students taking an exam on a 90°F day are nearly 10 percent less likely to pass the exam, and subsequently less likely to graduate with a high school diploma.[12]

Hotter temperature may also reduce the rate of learning over time. In a study of approximately 12,000 schools across the U.S., colleagues at BU, Georgia State, and College Board and I find that a 2° Celsius (3.6°F) hotter-than-average year re-

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[6] Graff Zivin, Joshua, Solomon M. Hsiang, and Matthew Neidell. "Temperature and human capital in the short and long run." *Journal of the Association of Environmental and Resource Economists* 5.1 (2018): 77–105. Heyes, Anthony, and Soodeh Saberian. "Temperature and decisions: evidence from 207,000 court cases." *American Economic Journal: Applied Economics* 11.2 (2019): 238–65.

[7] For instance, the BLS reports 2,830 nonfatal occupational injuries and illnesses involving days away from work in 2015:
https://www.bls.gov/opub/ted/2017/work-injuries-in-the-heat-in-2015.htm.

[8] For instance, in Jacklitsch et al. (2016): "Estimating the public health impact of extreme heat is difficult because hospitals and health care providers are not required to report heat-related illnesses, such as heat stroke and heat exhaustion, to public health agencies. In addition, heat-related deaths are often misclassified or unrecognized." Jacklitsch, Brenda L, W Jon Williams, Kristin Musolin, Aitor Coca, Jung-Hyun Kim, and Nina Turner (2016), "Occupational exposure to heat and hot environments: revised criteria 2016."

[9] Park, R. Jisung, Pankratz, Nora, and A. Patrick Behrer. "Temperature, Workplace Safety, and Labor Market Inequality" IZA Discussion Paper (2021). Dillender, Marcus. "Climate Change and Occupational Health Are There Limits to Our Ability to Adapt?." *Journal of Human Resources* 56.1 (2021): 184–224.

[10] Leigh, J Paul (2011), "Economic burden of occupational injury and illness in the united states." *The Milbank Quarterly*, 89, 728–772.

[11] This may be changing.
https://www.nytimes.com/2018/09/06/nyregion/heat-day-schools-extreme-climate-change.html

[12] Park, R. Jisung. "Hot temperature and high stakes performance." *Journal of Human Resources* (2020).

duces learning by approximately 3 percent, with far larger effects for Black and Hispanic students, and which accumulate over time.[13]

Despite the fact that the US is among the most highly air-conditioned countries, a significant fraction of students appear to attend schools without working AC. Publicly available data on school AC is lacking nationally, but recent surveys suggest that many large urban districts do not have universal air conditioning. For instance, only 60 percent of classrooms in Philadelphia, 55 percent in Baltimore, and 17 percent in Milwaukee public schools are fully equipped with AC.[14] Importantly, in what was one of the first nationwide surveys of school air conditioning, we found that the quality of school infrastructure is highly correlated with income and race: schools with more under-represented minorities are less likely to have AC, even controlling for average climate.[15]

A growing body of evidence suggests that it may be these subtler impacts of climate change that cumulatively comprise the lion's share of economic costs. For instance, the mortality costs of heat alone may be larger than the combined costs of agricultural losses and sea-level rise. Even in the case of wildfires, evidence suggests that it may be the smoke that causes more collective suffering, simply spread more thinly across a wider base of individuals.[16]

3. Climate Change May Exacerbate Inequality

It is worth taking a step back to review the broader economic context in which these damages are occurring. Climate change hits us as a time of growing wage inequality, stagnant upward economic mobility, and longstanding racial gaps in wealth and the means to accumulate it: including notable gaps in educational achievement. Economic inequality between those with and without access to higher education has grown enormously, particularly since the 1990's. And while the promise of America is that every individual has a fair chance at success, persistent educational achievement gaps hamper upward economic mobility for many racial minorities. Even today, the average Black student scores three quarters of a standard deviation below the average White student on measures of standardized achievement, roughly equivalent to 3 years of formal schooling.[17]

Emerging evidence suggests that the hidden costs of heat in particular may exacerbate underlying inequalities by race and income within the US. Not only will climate change exacerbate regional inequalities,[18] differences in risks due to occupation or housing characteristics may lead to divergent impacts across individuals within districts, cities, and even households. For instance, we find that heat-related risks on the job are far greater for lower income workers within California, particularly younger men without a bachelor's degree. Similarly, in the case of students, we find that the effect of heat on learning is far more negative for Black and Hispanic minorities and students in lower income school districts. The effect of a day above 80°F is 2 to 3 times larger for Black and Hispanic students than whites.[19]

This has important implications for racial inequality and environmental justice. The hidden consequences of heat for workplace safety and health may imply that headline wage statistics understate the extent of total compensation inequality, which may be further exacerbated by climate change.[20] In the context of student achievement, we estimate that differences in the thermal environment in which

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[13] Park RJ, Goodman J, Hurwitz M, Smith J. Heat and learning. American Economic Journal: Economic Policy. 2020 May;12(2):306–9.

[14] https://www.the74million.org/article/exclusive-too-hot-to-learn-records-show-nearly-a-dozen-of-the-biggest-school-districts-lack-air-conditioning/

[15] Park RJ, Goodman J, Hurwitz M, Smith J. Heat and learning. American Economic Journal: Economic Policy. 2020 May;12(2):306–9.

[16] Carleton, Tamma A., et al. *Valuing the global mortality consequences of climate change accounting for adaptation costs and benefits*. No. w27599. National Bureau of Economic Research, 2020. Burke, Marshall, et al. "The changing risk and burden of wildfire in the United States." *Proceedings of the National Academy of Sciences* 118.2 (2021).

[17] Autor, David H. "Skills, education, and the rise of earnings inequality among the "other 99 percent"." *Science* 344.6186 (2014): 843–851. Goldin, Claudia, and Lawrence F. Katz. "Extending the race between education and technology." *AEA Papers and Proceedings*. Vol. 110. 2020. Reardon, Sean F., et al. "Patterns and trends in racial academic achievement gaps among states, 1999–2011." *Unpublished Working Paper. Center for Education Policy Analysis, Stanford University* (2013).

[18] Hsiang, Solomon, et al. "Estimating economic damage from climate change in the United States." *Science* 356.6345 (2017): 1362–1369.

[19] Park, R. Jisung, A. Patrick Behrer, and Joshua Goodman. "Learning is inhibited by heat exposure, both internationally and within the United States." *Nature human behaviour* 5.1 (2021): 19–27. Park RJ, Goodman J, Hurwitz M, Smith J. Heat and learning. American Economic Journal: Economic Policy. 2020 May;12(2):306–9.

[20] Park, R. Jisung, Pankratz, Nora, and A. Patrick Behrer. "Temperature, Workplace Safety, and Labor Market Inequality" IZA Discussion Paper (2021).

learning occurs—including school and home air conditioning—contribute up to 7 percent of racial achievement gaps. The implication is that leveling the environmental playing field may close racial achievement gaps by a quarter of the total gains achieved over the previous 4 decades.

These are just two examples. Recent research shows that hotter temperature also increases violent crime at far higher rates in lower income neighborhoods,[21] and that it also increases the likelihood of violence among the prison population,[22] who often do not have access to air conditioning. Similarly, heat waves have been shown to significantly increase birth complications, at far greater rates for Black mothers than whites.[23]

Without remedial investments in climate mitigation and resiliency-enhancing infrastructure, climate change may further widen economic inequality and exacerbate racial gaps in health, learning, earnings, and wealth. The effects of climate on human capital inequality is particularly concerning given the growing importance of cognitive skills in the labor market, and the well-documented correlation between hotter local temperatures, income, and race.[24]

4. Policy-Relevant Data Gaps Remain

The data I've presented here provide some early clues regarding the potential consequences of climate change for economic inequality and environmental justice: specifically, what economists refer to as the (progressive or regressive) distribution of climate damages. But research on the economics of climate inequality is still nascent, and many important data gaps remain. To start, better data collection on workplace climate risks seems critical.

However, beyond heat, it is still not generally known how climate risk from hurricanes, windstorms, or wildfires is distributed across individuals by income, race, or national origin within the US. Available cross-country evidence suggests that tornado exposure is actually more concentrated in rich countries, whereas hurricane and cyclone impacts are roughly evenly distributed across rich and poor countries.[25]

Even in cases where researchers have uncovered evidence of regressive damages, there are still important knowledge gaps regarding why these inequalities arise, and what can be done about them from a policy perspective. Not only is this potentially important for modeling future climate damages, is it arguably critical for designing effective adaptation policy.

Consider the effect of temperature on workers. It matters whether, in the face of repeated climate shocks, workers are able to effectively adapt: for instance, by switching industries, moving to cooler environments, or by communicating with employers about workplace risks and how best to reduce them. At the moment, there are more questions than answers. Are low income workers constrained in their job-switching or relocation decisions by limited access to credit? Does imperfect competition in the labor market—what economists call monopsony[26]—make it harder for workers to bargain for safer workplaces? How does the presence of unions affect workplace climate adaptation?

Having a better understanding of the causes of inequality in climate impacts will help policymakers understand where and how to target policy efforts—whether it involves addressing clear market failures like credit or information asymmetries, or simply providing targeted, means-tested transfers to lower income populations.

A related information gap relates to the effectiveness of existing social safety net programs in buffering climate shocks, particularly for vulnerable populations. While there is some evidence that automatic stabilizers such as unemployment insurance

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[21] Heilmann, Kilian, Matthew E. Kahn, and Cheng Keat Tang. "The urban crime and heat gradient in high and low poverty areas." *Journal of Public Economics* 197 (2021): 104408. Behrer, A. Patrick, and Valentin Bolotnyy. "Heat, Crime, and Punishment." Stanford Hoover Working paper (2021).

[22] Mukherjee, Anita, and Nicholas Sanders. "The Causal Effect of Heat on Violence: Social Implications of Unmitigated Heat Among the Incarcerated." *NBER Working Paper* w28987 (2021).

[23] Kim, Jiyoon, Ajin Lee, and Maya Rossin-Slater. "What to Expect When It Gets Hotter: The Impacts of Prenatal Exposure to Extreme Temperature on Maternal Health." *American Journal of Health Economics* 7.3 (2021): 000–000.

[24] Albouy, David, et al. "Climate amenities, climate change, and American quality of life." *Journal of the Association of Environmental and Resource Economists* 3.1 (2016): 205–246. Hsu, Angel, et al. "Disproportionate exposure to urban heat island intensity across major US cities." *Nature communications* 12.1 (2021): 1–11.

[25] Hsiang, Solomon, Paulina Oliva, and Reed Walker. "The distribution of environmental damages." *Review of Environmental Economics and Policy* 13.1 (2019): 83–103.

[26] https://
obamawhitehouse.archives.gov/sites/default/files/page/files/20161025_monopsony_labor_mrkt_cea.pdf

are effective in the wake of more salient disasters such as hurricanes,[27] and that programs like means-tested home energy subsidies may be effective at blunting the harmful effects of heat waves for the poor,[28] it is as yet unclear whether and how existing social safety net programs perform in the context of less salient shocks such as hotter temperature or smoke from wildfires. There is still much we do not yet know regarding the climate resilience benefits of existing or proposed programs, and how best to strike the delicate balance between building resilience while creating the right incentives for individuals, communities, and companies to adjust their behavior in ways that minimizes personal and economic harm.

5. The Potential for Inequality-Reducing Co-Benefits

I've provided preliminary evidence that, in the US, damages from hotter temperature are disproportionately felt by lower income communities and racial minorities. To the extent that such patterns hold generally, the implication would be that the benefits from climate mitigation—reducing greenhouse gases—may be progressive. That is, reducing emissions may be inequality-reducing, or at least lean against further widening of inequality due to climate change.

As noted above, it is worth being clear that there is much we do not yet know about the distribution of climate damages, and I caution against blanket statements about climate inequality as if it is a foregone conclusion. It's important that policymakers get this right. One can imagine a scenario in which funding is allocated for climate adaptation and resiliency projects that end up subsidizing the already relatively well off. Whether that's desirable is I think a question open for debate, but the point is that we certainly would want to have the facts right when engaging that discussion.

But there is another more immediate way in which addressing climate change could have outsized benefits for historically disadvantaged communities: the potential health, education, and productivity co-benefits of cleaning the air we breathe.

Studies now show that air pollution can have profound adverse consequences for health, cognitive performance, and economic opportunity: including effects on birth defects, student achievement, violent crime, worker productivity, and even the onset of dementia.[29] Once again, the effects are subtle but pervasive. For instance, students taking exams on a highly polluted day (AQI above 100) experience a negative effect on performance similar to or larger than the effect of a hot (90°F) day. Importantly, we know that local air pollution is highly correlated with income and race.

This means that, if designed properly, investments in clean energy, clean transportation, and other low-carbon infrastructure would not just slow climate change but could also reduce air pollution. Estimates suggest that if the U.S. were to reduce emissions in a manner consistent with our prior pledges under the Paris Accords, the resulting air quality improvements would save 300,000 premature deaths by 2030.[30]

Here, it is important to note that policies that increase the cost of energy have the potential to exact higher costs (as a proportion of expenditures) on lower income populations.[31] But recent analyses suggest that smart policy design—including targeted rebates—can overcome the potential regressivity of such policies. Similarly, while market-based policies bring the possibility of "environmental justice gaps", wherein shifting of emissions lead to greater concentration of existing pollution in

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[27] Deryugina, Tatyana. "The fiscal cost of hurricanes: Disaster aid versus social insurance." *American Economic Journal: Economic Policy* 9.3 (2017): 168–98.

[28] Cicala, Steve. *The Incidence of Extreme Economic Stress: Evidence from Utility Disconnections*. No. w28422. National Bureau of Economic Research, 2021.

[29] Isen, Adam, Maya Rossin-Slater, and W. Reed Walker. "Every breath you take—every dollar you'll make: The long-term consequences of the clean air act of 1970." *Journal of Political Economy* 125.3 (2017): 848–902. Persico, Claudia L., and Joanna Venator. "The effects of local industrial pollution on students and schools." *Journal of Human Resources* 56.2 (2021): 406–445. Ebenstein, Avraham, Victor Lavy, and Sefi Roth. "The long-run economic consequences of high-stakes examinations: Evidence from transitory variation in pollution." *American Economic Journal: Applied Economics* 8.4 (2016): 36–65. Bishop, Kelly C., Jonathan D. Ketcham, and Nicolai V. Kuminoff. *Hazed and confused: the effect of air pollution on dementia*. No. w24970. National Bureau of Economic Research, 2018. Graff Zivin, Joshua, and Matthew Neidell. "The impact of pollution on worker productivity." *American Economic Review* 102.7 (2012): 3652–73. Colmer, Jonathan, and John Voorheis. "The grandkids aren't alright: the intergenerational effects of prenatal pollution exposure." (2020).

[30] Shindell, Drew T., Yunha Lee, and Greg Faluvegi. "Climate and health impacts of US emissions reductions consistent with 2 C." *Nature Climate Change* 6.5 (2016): 503.

[31] Pizer, William A., and Steven Sexton. "The distributional impacts of energy taxes." *Review of Environmental Economics and Policy* 13.1 (2019): 104–123.

lower-income neighborhoods, recent evidence suggests that these concerns can be addressed with smart policy design.[32]

So investing in climate mitigation and clean energy infrastructure may have both short and long term benefits that also address environmental justice concerns.

6. Proactive Climate Adaptation Policy

Even if we are successful at cutting emissions swiftly, a significant amount of warming will still be baked in to the climate system, at least over the next 2–4 decades. For instance, within many of our lifetimes, individuals in Tampa, FL will likely have experienced over 65 additional days *per year* above 90°F (by 2050), even with aggressive mitigation efforts. That number is approximately 36 days in Baton Rouge, LA, and 46 days in Birmingham, AL.[33]

This means that, in conjunction with aggressive decarbonization efforts ("mitigation"), policymakers may want to think proactively about climate resilience ("adaptation"). This is where the knowledge gaps I mentioned above present both a risk and an opportunity.

An analogy to the Covid-19 response may be instructive. In part because the timing of the crisis was so unpredictable, policy responses to its economic fallout were mostly reactive, and utilized relatively blunt policy instruments. Climate change is a slower-burning crisis with far greater predictability. And we have much more data to lean on, since many of the shocks in the near to medium term will not be qualitatively new—simply more frequent and stronger in intensity. This suggests that it may be possible to engage in more proactive responses that use precision policy tools.

Doing so may require significant investment in data collection, harmonization, and research into the specific market failures that may hamper climate adaptation, and in identifying key dimensions of vulnerability across individuals within the U.S. The Federal government is well-positioned to perform crucial coordination functions.

One possibility is for the Federal government to create a Climate Adaptation and Resiliency Agency,[34] or an inter-agency working group similar to the one on the social cost of carbon, but aimed at better understanding the process of—and population-specific barriers to—effective climate adaptation. Such efforts may help provide policymakers with the information necessary to better target adaptation and resiliency investments so that they achieve policy objectives cost-effectively.

Thank you for the opportunity to share my views with the committee.

Ms. CASTOR. Well, I want to thank the witnesses for their very insightful testimony, and I will recognize myself for 5 minutes of questions. There is a common theme in all of your testimony today, and that is how we move ahead on equitable and just climate policy, and it has got to be more than simply reducing carbon pollution. We have got to tackle environmental racism and help improve the lives of everyday Americans, no matter who they are and where they live.

Ms. Flowers, I heard you loud and clear about the differences you have seen in just simple things like wastewater treatment, and, you know, we just in the House passed the INVEST in America Act where we made historic investments in wastewater treatment. This is on the front burner for me here in Tampa because, when we have these extreme rain events, our sewers overflow. It is pretty gross. And now we have so much nutrients in Tampa Bay, we have a massive fish kill, red tides they say—the scientists now say it is going to last longer because the waters are warmer. I mean, this is a toxic stew. We have got to repair and strengthen critical infrastructure and do a better job.

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[32] Hernandez-Cortes, Danae, and Kyle C. Meng. *Do environmental markets cause environmental injustice? Evidence from California's carbon market*. No. w27205. National Bureau of Economic Research, 2020. Shapiro, Joseph S., and Reed Walker. "Where is Pollution Moving? Environmental Markets and Environmental Justice." *AEA Papers and Proceedings*. Vol. 111. 2021. https://equitablegrowth.org/a-plan-for-equitable-climate-policy-in-the-united-states/

[33] http://www.impactlab.org/

[34] https://democracyjournal.org/arguments/a-moon-shot-for-climate-change/

You talked about the—you chronicled the challenges pretty well, what opportunities do you see if we really can deliver on significant historic investments in cleaning up the water and make sure we target those investments to communities of color and communities on the front line, what opportunities do you see? Get specific with us.

Ms. FLOWERS. Well, I think there are a number of opportunities. I think one of the opportunities we will be seeing pretty quickly in the health outcomes. Because we did a parasite study where we found evidence of tropical parasites in Lowndes County where people did not have access to adequate sanitation, and the people that had the highest parasite loads were the people like the one I mentioned, Ms. Holcombe, who had raw sewage coming back into their homes.

And the second outcome would be it can provide jobs, and good-paying jobs, to people in the community where they don't feel like they have to leave and go to the cities or go to other areas to find jobs.

And then, of course, I think the third thing is the economic opportunities in terms of being able to recruit businesses to come. I mean, in those communities where you don't have adequate sanitation, businesses are not going to locate there. I used to be the economic development coordinator for Lowndes County, and one of the things they want to know is what kind of infrastructure is there. And without infrastructure, those communities will continue to remain poor, and they will not even have the opportunities to recruit basic services that they need in those areas without functioning infrastructure. So those are some immediate outcomes that we could see.

Ms. CASTOR. Yeah. And we know that the American Society of Civil Engineers ranked our infrastructure in the U.S. with a C-minus grade, but when it comes to wastewater, D-plus; schools, D-plus. So I know there are enormous opportunities out there to do better.

And, Ms. Cooley, you mentioned for Tribal Nations, you have your eye on solar and wind power. Do you see this as a big job creator making these investments in renewable energy?

Ms. COOLEY. Yes, definitely. As Ms. Flowers mentioned that these jobs will train former mine workers and their families and upcoming generations for solar and wind industries, based on the reservation, based on Tribal lands so they do not have to go off the reservation, away from their families, and away from what they basically have known for all their lives.

So it is important that we keep these—our people on the reservations, but the jobs and the training opportunities are immense. As a member of one of the largest Native American Tribes out there, there is great potential for job creation. Thank you.

Ms. CASTOR. Dr. Park, your recent research is eye opening. Previously, official estimates have been that exposure to heat caused about 4,000 workplace injuries a year, but in your review of worker's compensation claims, you say that, no, it is closer to 15,000 or more just in California. Is that correct? Why have agencies like the National Institute of Occupational Health or Labor Statistics completely missed this?

Mr. PARK. Certainly. Within our estimates, I am not a physician, but my understanding is that heat illnesses and injuries due to heat are one of those things that are just quite difficult to attribute definitively forensically on a case-by-case basis, and in order to actually do this, you need a vast amount of data and to look at it in a way that allows you to look at the excess due to heat, but more broadly, I think this is, in part, a function of lack of data collection and interest in this issue.

Ms. CASTOR. Thank you. All right. We are going to go to Mrs. Miller. You are recognized for 5 minutes.

Mrs. MILLER. Okay. Can you hear me now?

Ms. CASTOR. Yes.

Mrs. MILLER. Okay. Thank you so much, Chair Castor and for Ranking Member Graves.

And thank you to all of the witnesses here today.

We have an awful lot in common. I want to paint a picture now of what is happening in Appalachia. There are thousands of homes without sanitary, sewage, or septic service. That means human waste goes right into the creeks and the rivers. There is a high rate of opioid use and drug overdoses. There are adverse health impacts in our communities compared to our surrounding regions, and much more.

But these impacts are not a result of climate change, as my colleagues would like you to believe, but rather they are caused by the policies of destroying energy communities.

If justice is really what we are here to talk about today, where is the justice for these communities that have been left behind by these policies? Both energy poverty and poverty caused by dangerous policies must be considered by this committee.

However, we are never going to have those discussions if we continue to have reports like the one out of the White House Environmental Justice Advisory Council as guidance [inaudible] by the administration.

This Council stated that projects like carbon capture, nuclear power, research and development, or any road improvements would not benefit communities. Are you kidding me? These findings are against what I believe, my colleagues across the aisle generally believe, and we should all be concerned that these are the principles that are supposed to guide this administration. If we continue down this same radical path, we are only going to put more people at risk.

Mr. Hollie, energy poverty is a very real and, in many communities, experience it. How can the policies of shifting solely to renewables increase energy poverty in the communities?

Mr. HOLLIE. Oh, simple. When you switch to solar and renewables, it is going to drive up the cost of the energy, the price of energy in these communities. I am not against transitioning, but we just got to do it slowly and sensibly.

Mrs. MILLER. I agree. What do you think the impact of that will be on people's health?

Mr. HOLLIE. In terms of jobs and what it is going to do in those communities, it is going to be devastating just like—look, I had a chance to go back to the Appalachia, southwest Virginia, where my grandfather was a Black coal miner, and I have seen the poverty.

I have seen how people live back there. There are people right now who have blue tarps on their house with tires holding it down because they can't afford to get their roofs fixed. So that is how bad the poverty is in Appalachia.

Mrs. MILLER. I just spent an entire day yesterday in McDowell County discussing just those things with people that live there. You probably have seen the White House Environmental Justice Advisory Council's Report on Environmental Justice. As I mentioned, the report outlines a multitude of policies that wouldn't benefit a community, such as infrastructure repair, procurement of nuclear power, carbon capture, and research and development.

What do you think of these findings? I mean, how would they increase energy poverty?

Mr. HOLLIE. I think it would be devastating to these communities. And one of the things we have talked about, too, is just minority impact assessments. Let's do a study to show how these new policies will impact these vulnerable communities. And so I think that will be a start to help us all understand how this environmental justice and these kinds of policies—what it will do to these particular communities.

Mrs. MILLER. And we all share that. What policies should we put in place to reduce energy poverty?

Mr. HOLLIE. Sensible energy policy that won't harm the environment and won't harm the people who need the energy the most.

Mrs. MILLER. Thank you very much.

I yield back my time.

Ms. CASTOR. All right. Next, Rep. McEachin, you are recognized for 5 minutes.

Mr. MCEACHIN. Thank you, Madam Chair, for this hearing and this opportunity to have a conversation with these knowledgeable witnesses. The thing that I want to talk about right now is consultation, and I will direct my first question to Ms. Coleman Flowers.

Part of the administration's work on this initiative and of my work with Chairman Grijalva on EJ For All has centered on discussion in coordination with an outreach to EJ communities. Meaningful participation in this process from impact to the EJ communities can help make sure that we are truly addressing the needs of these communities.

As you have worked in this space, can you share with us what is the benefit of this type of consultation? What ills can befall these communities if they are not consulted with?

Ms. FLOWERS. Thank you for that question, Representative McEachin.

One of the things that—first of all, I come from an EJ community, and I have lived in rural communities, and I have lived in poverty. And oftentimes people that try to craft well-intentioned solutions don't know what it is like to deal with it on a day-to-day basis. And that is why I try to take people to see it firsthand. See people like Pamela Rush, who died last year in July from COVID because her home, which was not energy efficient and had been that way for quite some time because it was a mobile home, where she got a mortgage that she shouldn't have received, but her family was suffering from a lot of the issues that we talk about today that

most people have never even dreamed about. We have taken people there who couldn't stay in the house for more than 5 minutes because they had never seen anything like that before.

And when we don't consult with communities, you don't go and see for yourself, oftentimes people are doing more harm than good, and I always invite everyone who is involved in policy—some people oftentimes are trying to use an urban lens to solve these problems, but the same thing is true for environmental justice. If you have to live down in St. James Parish and smell that stuff day in and day out and then have to, you know, deal with it on a regular basis, I think that people will have a different kind of perspective on it.

So we have to consult with the community because oftentimes they know what the solutions are. They have never been asked. It is usually being crafted by people that are creating the problems instead of people that want to be part of the solution.

Mr. MCEACHIN. Would you agree that we in Washington have to resist the temptation to try to find one solution that tries to fit all EJ communities rather than consult with them? Because as you just suggested, oftentimes they have the answer; someone just needs to ask the right question.

Ms. FLOWERS. That is correct. I mean, I think that I am not an expert on Flint because I didn't grow up in an urban area, but I can certainly tell you about living in Lowndes County and what it is like going to an outhouse, et cetera. So I think that we have to consult with people in communities because they have different problems in different communities, but I also think it is important to note that the people in the community often times have the solution; they just haven't been asked.

Mr. MCEACHIN. Right. I couldn't agree more, which is one of the challenges of implementing this program, is that we need to make sure that we are consulting with these folks, letting them come up with their solutions, helping them implement those solutions, and then get out of their way while they fix their communities.

Ms. Cooley, again, I want to thank you for participating in today's hearing. Along a similar line, you note in your testimony that indigenous people should be consulted thoughtfully from the earliest stages of policy and research development, legal policy, ethical and cultural best practices and requirements should be followed to make consultation meaningful.

While this practice has tragically not always been followed by the Federal Government in its interactions with indigenous people, can you tell us what it looks like when it goes right?

Ms. COOLEY. Thank you for that question. Well, I think it has been outlined that when you provide meaningful partnership, adequate financing, access to resources, that a community thrives. And you provide that support in the long term. There is a statistic out there where it said that Native American communities receive $3 per person for disaster emergency funds, where the average U.S. citizen receives $26 per person, and there is a big difference in that.

So you are giving them not just a seat at the table and not just checking off a box, but you are taking that meaningful action to engage them, to remove that barrier, and also strengthen Tribal sov-

ereignty. You are also honoring that trust responsibility that the government, that they have to Native American Tribes and whatnot.

So thank you for that question.

Mr. MCEACHIN. Thank you.

Madam Chair, I just want to reiterate, again, that we must invest in environmental justice in disadvantaged communities that have seen historical underinvestment. We need to listen to them as we look forward to reaching a carbon-zero society. I appreciate the witnesses weighing in on how we might do so. I look forward to working with my colleagues and the administration to ensure that we follow through on our promises with meaningful investments in these communities and not just a one-size-fits-all response.

Madam Chair, I yield back and, again, I thank you for your courtesy.

Ms. CASTOR. Well, thank you for your leadership Rep. McEachin.

Next, we will go to Ranking Member Graves. You are recognized for 5 minutes.

Mr. GRAVES. Thank you, Madam Chair. I want to thank all the witnesses for your testimony. That was helpful input and I appreciate it very much.

Ms. Flowers, I want to ask you a question. You were on the White House Environmental Justice Advisory Council, I believe, and there was a recommendation in that report. It was on page 55, and it said: "It would be unreasonable to have any climate investment working against harmed communities."

So, it would be unreasonable to have any climate investment working against harmed communities. With that in mind, should the United States be pursuing any policies that support, directly or indirectly, forced labor or slave labor or child labor anywhere in the world to advance clean energy goals in our country?

Ms. FLOWERS. Well, that is a good question, but, first of all, I can't speak on behalf of the WHEJAC, but I can give you my personal opinion. I think that the United States should support human rights no matter where it is, but I also believe that we shouldn't do any kind of harm. I have seen it, you know, when I went to St. James and St. John's Parish myself.

I am just, you know, FYI, when I trace my family history, I can trace it back to Louisiana, actually to some of the original cages that came from Canada and went back to Canada.

Mr. GRAVES. Oh——

Ms. FLOWERS. So I have—my interest in what happens in Louisiana is more than as an activist, but also with having family there in Sicily Island and Catahoula Parish.

Mr. GRAVES. Oh, yeah. We are having our family reunion in December. You should come.

Ms. FLOWERS. We might be cousins. But anyway, I would love to—I think that what we have to do is find solutions as we—as the previous question that was asked. There is no one-size-fits-all solution to this problem; however, I think that what the intended statement was—and this is my opinion, not an official statement—is that we should do no harm in communities that have already been harmed.

Mr. GRAVES. Thank you. I appreciate that. There was another issue that we have kind of been trying to work through on the committee a bit, and it has to do with carbon capture. So capturing or pulling greenhouse gases out of the atmosphere. In a recent report by the Biden White House, they endorse carbon capture and utilization, and they talk about the important role. It says, quote: "There is a growing scientific consensus that carbon capture, utilization, and sequestration, and carbon dioxide removal will likely play an important role in decarbonizing efforts globally; action in the United States can drive down technology costs, accelerate CCUS deployment around the world," and they say they are committed to accelerating it.

The Environmental Justice Report appeared to take a little bit different approach. Do you have an opinion on whether or not you believe that using carbon capture, removing greenhouse gases from the atmosphere, should be a solution as we move forward?

Ms. FLOWERS. Well, in my opinion, I think we shouldn't put the greenhouse gases in the atmosphere in the first place. I am concerned about the livelihood of my 5-year-old grandson and seven generations to come, but I also feel that when we look at solutions, again, we have to go to the communities. There is some communities that might support carbon capture and some that might not.

So I think the solution lies with consulting with those communities that will be greatly impacted by it.

Mr. GRAVES. So, if the communities are on board, do you think we should just have local consultation, which I believe Ms. Cooley cited at one point as well? You think that is the way we should handle how to perhaps use that technology or not?

Ms. FLOWERS. Well, if that community is open to the technology, yes. If they are against it, I think, again, you have to have consultation because, at the end of the day, I think you mentioned, someone mentioned we can't force people to do things. We see that with the COVID vaccine, but I think we can find ways in which we can come to some kind of common ground on how we are going to address these problems, whether it is through carbon capture or some other way.

Mr. GRAVES. The report makes note and, again, the White House Environmental Justice Advisory Council report, it says that there should be an end to subsidies to investor-owned utilities. The biggest incentive or subsidy that the investor-owned utilities benefit from is actually the incentives for wind and solar, the production tax credit and the investment tax credit.

Does that—is the task force opposed to those subsidies as well, and do you think we should remove those?

Ms. FLOWERS. I do not speak for the task force, but I think that, you know, you may want to ask for a consensus. You got to remember people represent places from around the country, so I don't speak on behalf of the task force, and I don't have an opinion on that.

Mr. GRAVES. Thank you, Madam Chair.

Ms. CASTOR. All right. Next up, Rep. Levin, you are recognized for 5 minutes.

Mr. LEVIN. Well, thank you, Chair Castor.

I do have questions for the panel, but first I want to briefly address, frankly, the disappointing and inaccurate comments about my state, the great State of California, made by my friend and my colleague, Mr. Graves, who seems to often confuse electricity rates with electricity bills. He is fond of talking about electricity rates, but our constituents, his and mine, we ultimately all pay bills, and more impacts those bills than solely rates.

So if we take a look at the facts, as I know my friend likes reminding colleagues to do, we find that Louisiana has significantly higher electricity bills than California. In fact, Louisiana ranks 41st with some of the highest electricity bills in the nation.

And let us not forget another important point. Clean energy sources are now generally cheaper than fossil fuels. In fact, in 2020, the EIA published an analysis that found that solar power is 20 percent to 50 percent cheaper than it had projected just the year before. The analysis goes on to say this: Solar is now the cheapest electricity source in history. I will repeat that. Solar is now the cheapest electricity source in history.

The bottom line is that every few years, we hear about the predicted death of California. I have been involved in California public affairs and politics for my entire adult life, and every once in a while we hear, oh, California is dead. And every few years when we hear that, we know that it is only a matter of time before those prognosticators are proven completely wrong once again.

So my standing invite to my friend, Mr. Graves, exists to visit our great State of California anytime. Meet with our policy leaders. Ask them tough questions. Bring your fossil fuel industry talking points, whatever you want to do. Let's actually have a good discussion, rather than reciting tired talking points.

And I will also say this: This past year, we found that California is head and shoulders above any other state when it comes to creating jobs and growing our economy. We have added more than 1.3 million jobs since April of last year. That is equal to the entire workforce in Nevada, and it is larger than the growth in Texas and New York.

Of course, we have challenges. No state is perfect. We have got a ton of work to do. We have problems that have to be solved, but let's stay in the realm of facts.

So I am going to turn now to UCLA's Dr. Park. And, Go Bruins.

I wanted to ask about grid reliability. How could an unreliable electric grid worsen the impacts of extreme heat on low-income workers and students?

Mr. PARK. Thank you, Representative Levin. Go Bruins indeed.

So grid reliability would be a terrible issue, especially in light of when extreme tends to hit. If your electricity is failing when the demand is high, which in the summer tends to be right when the temperature is high and people are running their air-conditioning, given what we know about heat's detrimental effects on student learning—and by the way, very divergent and unequal affects by race on student learning, as well as on worker safety and health, I think it would be a big problem.

Mr. LEVIN. Thank you for that.

Ms. Cooley, I want to turn to you. What kind of access do Native American communities have when it comes to clean energy genera-

tion? And are there resources that we can provide to help make sure that our Native communities have access to clean electricity?

Ms. COOLEY. Thank you for that question, Representative Levin. Native American communities do have access to the resources, such as wind and solar, that are required to develop clean energy facilities. What they don't have is the adequate or reliable financing, the training resources, or access to those renewable energy careers, and also the infrastructure. They could greatly help in reducing the reliance and negative impacts on fossil fuels and nuclear energy.

As I come from a nation who has heavily relied on, in the past, on fossil fuel in extractive industry, the potential is great. We just have to tap into it. We need that support in the form of financing and access.

So I just want to also say that if you invest in this type of infrastructure for Tribal communities, they also have the opportunity in the future to help other non-Tribal communities if there were ever to be some type of natural disaster. And I think a good example is the Blue Lake Rancheria Tribe in northern California. During the wildfires in the past couple of years, when PG&E shut off the electricity to reduce wildfire threats, their microgrid actually supported surrounding non-Tribal communities and also patients that were most at risk.

And so with that, thank you for the question.

Mr. LEVIN. Well, thank you.

And I am out of time. So, Chair Castor, from the great State of California, I yield back.

Ms. CASTOR. Thank you, Rep. Levin.

Next, we will go to Rep. Carter. You are recognized for 5 minutes.

Mr. CARTER. Thank you, Madam Chair. And thank all of the panel members for being here today.

Mr. Hollie, I would like to ask you a couple of questions. And I want to thank you, first of all, for testifying today and sharing what I believe is an important view on the issue of environmental justice.

We, you and I, share many of the same concerns about the policies that my colleagues and I have been discussing, and it also appears we share a passion for fishing. And as the Representative of the entire coast of Georgia, over a hundred miles of pristine coastline, I love fishing. In fact, this is my home. It is where I have lived all my life, and some of my fondest memories are fishing with my dad as I was growing up, and I want to make sure that my sons and grandsons have that same experience as I had as well.

You and I have engaged before, Mr. Hollie, on an issue previously in an Energy and Commerce Environmental Subcommittee hearing, and I want to revisit some of that. It had to do with the lessons that we learned from the cancellation of the Atlantic Coast Pipeline and the harm that it did to communities.

In your testimony for today's hearing, you echo some of those thoughts when you say that you fear the same will happen to healthy thriving communities that have relied on good-paying oil and gas jobs for generations.

Can you just—for my reference and for the reference of my colleagues, can you speak just for a little bit about the effects of re-

moving good-paying jobs in industries from environmental justice communities?

Mr. HOLLIE. Absolutely. But first I want to tell you, I docked in Savannah when I took the boat to Florida, so I was there.

Mr. CARTER. Thank you. I appreciate that. Our economy appreciates it.

Mr. HOLLIE. Like I said, I had a chance to go back to southwest Virginia, where my grandfather was a Black coal miner. I am telling you, I saw the poverty that exists there, and it is a shame. And, again, I know a lot of folks who live in Louisiana, live down in Texas, and all those places, who are right now, they have jobs within the oil and gas industry, and they are very, very concerned about what is going to happen if their jobs go away. Their lifestyles will be completely disrupted. And, again, these people have been working—one of my guys has been working there for 27 years. And so to try to train someone who is 54 on another job at that age I just think is a little unrealistic.

Mr. CARTER. Absolutely. So what would you say that—where are the areas that are most at risk for this, this kind of energy poverty, as you described?

Mr. HOLLIE. Energy poverty exists—see, the thing about energy poverty, it is not a White or Black issue; it is an American issue. And it is—and these people are in these vulnerable communities. It is rural. It is senior citizens. It is minority and low-income communities. Those are the ones right now who are struggling the most. Those are the ones right now that this environmental justice is supposed to protect, but these are the ones right now who are struggling with energy poverty, and you can't have a conversation without including both of them.

Mr. CARTER. And when you talk about energy poverty and how some of these Americans are spending more than 25 percent or more of their total income on their electric bill—it has been reported that the price of gas has gone up over 48 percent from a year ago.

With these price increases in gas and nearly all other goods, as we know inflation is going up as well, what is the effect going to be on environmental justice communities? And will they see—and will this increase energy poverty in our country?

Mr. HOLLIE. Absolutely, because energy is a fixed price. When the price goes up at the pump, you experience it everywhere. Even the cost of a head of lettuce, a gallon of milk. Everything goes up when the cost of energy goes up. When you go out to dinner, if you have got a couple of dollars to spend out in a restaurant, your meal is going to go up, because it costs more to cook the food on natural gas. So these people will be impacted more so than anybody else.

Mr. CARTER. You know, you touched a little bit in your testimony when you note that we are encouraging greater adoption of electric vehicles. And I think that is great, and we all think it is great, but 90 percent of electric vehicle owners earn over $100,000 a year. If energy prices and gas continue to go up, what groups are going to have to end up bearing the higher cost? Will it be those making over $100,000 or is it going to be the environmental justice communities?

Mr. HOLLIE. It is going to be the environmental justice communities for sure.

Mr. CARTER. Obviously, it is.

Mr. HOLLIE. Yes.

Mr. CARTER. And, you know, that is what really frustrates me sometimes, because I just don't think that some of my colleagues understand that the impact of higher energy prices impacts the lowest incomes the most.

Look, I—you know, I have got 18 seconds left, and I always have to mention that Georgia is the number one forestry state in the nation, and I am proud of what we are doing in the way of energy costs. But we have got to address this and we have got to address climate change, but we have got to address it with an all-of-the-above type energy policy that includes stable, reliable, affordable energy.

So thank you, Mr. Hollie. I appreciate it.

And I yield back.

Ms. CASTOR. All right. Thank you, Mr. Carter.

Next up, Rep. Casten, you are recognized for 5 minutes.

Mr. CASTEN. Thank you, Madam Chair. Thank you to all our witnesses.

And I feel like I have got to be the broken record because I feel compelled to say this every time. And I know you have heard it before and I know you all know it is true; you just don't like to acknowledge that it is true. If you can heat your home, if you can keep your lights on, if you can drive your car without burning fossil fuel, you don't have to pay for fossil fuel. It is freaking awesome, saves a lot of money. Stop this nonsense that it is expensive. We have to invest capital in order to save money, and that is in investments, period, full stop. Stop pretending it is not true.

It is a problem if you are in the business of extracting fossil fuel or you are paid by people who are in that business. I get it. We need to make sure that those people are protected and make it through this transition, but please don't show for that. We are looking out for the American people here.

To that end, Ms. Flowers, I would like to start with you because you mentioned energy efficiency, which is, of course, the way we do this. And you mentioned some of the challenges that some of the folks in your community have had getting access to energy efficiency in their homes, which, of course, is going to give them hotter showers, colder beers with less money.

A lot of utilities, a lot of states have tried to provide resources to provide the upfront capital, to amortize that capital. It clearly hasn't worked as well as it should have to make sure that the neediest among us get access to those more efficient homes.

Any suggestions on what we can or should do federally to accelerate the access to capital for people who, as my friend, Mr. Carter, says, may not be able to afford that initial investment, but, man, they will save a lot of money once that investment is made?

Ms. FLOWERS. Well, I think among the many things—thank you for the question. It is not my area of expertise, but I will say this: Just as a consumer and what I have seen talking to people who have issues with having access to capital, I think, first of all, we should make sure that there are green banks that are set up in the

communities, that in communities, these EJ communities, that capital is available so that the businesses there can benefit. Because oftentimes what happens, no matter who is responsible or where it comes in, the communities don't benefit from it, and somebody comes in from the outside, takes it and leaves, and leaves the community poor. And we need to change that.

We also need to make sure that the homes are energy efficient. In Alabama, for an example, my home state, which I love dearly, we are now tornado alley. And a lot of people are living in mobile homes, and one of the reasons why we have had a high rate of people dying has been because they lived in mobile homes, but they are also not energy efficient, a lot of them.

Pamela Rush, who I mentioned before, her power bills were easily $400 and $500 a month, and she was living off approximately $900 to $1,000 a month.

So we have to make sure that our homes are more energy efficient, but make the capital available in those communities that need it the most.

Mr. CASTEN. Well, thank you. And I hope in our infrastructure plan we are able to make sure that that capital is available, because it is an investment, makes all Americans wealthier, and let's do it for good and selfish reasons.

Dr. Park, your testimony was fascinating, and I am particularly interested in some of what you mentioned about some of the regional differences in how these costs are borne. They particularly brought to mind of one of our prior witnesses, Michael Greenstone from University of Chicago and some of his work. I see you nodding your head, so hopefully that means you are, in fact, connected, because I sure hope you folks are collaborating.

As you know, he has been, you know, dedicated a long time to calculating the social cost of carbon and now trying to understand the regional differences.

Can you give me some sense of these differences that you talked about? Are we talking about, you know, a 2X difference between regions? Is it a 10X difference? What is that disparity in your math which we have seen, and how should we be thinking about that? If we are to embrace markets and market solutions to pricing externalities, how much does it vary regionally?

Mr. PARK. Great. Well, thank you. That is a great question.

Michael Greenstone's work is sort of like the trunk of the tree of knowledge that I am branching off of, certainly something I am familiar with.

And if I may, just in 10 seconds on a point you made that I think is really important about costs. We have been talking a lot about the potential for clean energy policy to be regressive in terms of who bears the cost. That may in theory be true, but that is sort of like saying that you could die from heart surgery. Yes, but it depends on how you do it and how well you do it. And I really—I think—you know, I won't speak on behalf of all of my economist colleagues, but I certainly think that, you know, many would agree that it really comes down to smart policy design. There is nothing inherent to clean energy policy that needs to necessarily be regressive in terms of the realized outcomes for low-income individuals.

To your question about regional disparities, I think the honest answer is that we are still learning. Is it 2X? Is it 10X? Is it, you know, 15X? Because I think in part we know a lot about the physical impacts of climate change and how they vary. You know, I could give you a table—and, in fact, maybe I will after our testimony—you know, with each of the members here and how many extreme heat days your constituents can expect in the next 20, 30 years with quite a bit of precision now. But what we don't yet know very well is just how much individuals in particular areas, depending on their occupation, their industry, their housing stock, the age of their housing stock, how these things affect—you know, the effect of heat on electricity bills, your health, your learning, your productivity, et cetera.

And so my guess would be that the regional disparities are very large, which implies—the last point I will make is that—which implies that the Federal rule probably will have an important—Federal Government will have an important role to play in spreading out these risks as climate shocks manifest moving forward.

Mr. CASTEN. Thank you so much. I would love to see that data if you have it.

I yield back.

Mr. PARK. Sure.

Ms. CASTOR. There is no doubt that Rep. Casten would like to see any and all of the data, and we all would.

Next, we will go to Rep. Palmer. You are recognized for 5 minutes.

Mr. PALMER. Thank you, Madam Chairman.

I just want to make a point here in regard to things that have been said by Ms. Flowers. I grew up in northwest Alabama. My dad had maybe an eighth grade education. He was a logger. He logged with a pair of mules and a chain saw. That is what I grew up doing. Later, he started building roof trusses. I have actually been on the roofs of homes putting new roofs on. So I understand what it is to work in extreme heat, especially considering that I was on the football team for the University of Alabama and we had practices twice a day on artificial turf that, I am not kidding, the temperature on that turf was 110 degrees.

So, Dr. Park, wouldn't you agree that physical health and condition is a factor in how people respond to extreme heat or heat, period?

Mr. PARK. Is physical health a factor? Absolutely, absolutely.

Mr. PALMER. Absolutely. Thank you.

And I just wanted to point out that my grandparents, my dad's parents, lived in a house that was not only heated by a wood-burning stove, they cooked on it.

Ms. Flowers, I would put her blackberry cobbler up against anybody from Lowndes County, or anywhere else, including Garrett Graves' district. I don't know if they know how to make it in Louisiana.

But I want to go on and I want to—Ms. Cooley, though the Navajo people did not arrive in the southwestern United States until around 1400, 1450, migrating from Canada and Alaska, I assume your research has shown you and made you aware that there were mega droughts between 900 and 1300 A.D. that had an enormously

negative impact on the indigenous peoples who were in those regions at that time.

Are you aware of those droughts?

Ms. COOLEY. Well, first of all, that is what the archeologists say where my—where they say my people are from, but I have a different viewpoint on that, but that is another session.

These disturbance regimes, such as these mega droughts that you are talking about, are happening more frequently. And maybe back in my ancestors' days, they didn't happen as much, but, yes, they did happen, but there have been more —

Mr. PALMER. Well, actually, they were more frequent then and lasted much longer. Some of them lasted over a hundred years at that time. And the science says that it was more arid during that period than any subsequent century. So the droughts were longer and worse during that time, and it was because of warming. It was climate change.

Mr. Hollie, I appreciate you being here as well. I want to touch on something about lowering energy costs and what has happened with hydraulic fracturing and how it brought down the cost of natural gas. It not only makes heating costs go down, it also lowers cooling costs, which should make it more economically feasible for lower-income households to keep their homes cooler.

There is a study out—I have got a paper here from Lancet, the British Medical Journal. It says there is 17 times more people die from cold than from heat. I have also found that there is enough—it says that the cost of the lower natural gas cost, that it is estimated that it has saved about 11,000 Americans from dying during the winter every year.

I think of this in the context—and I brought this up many times, and the other witnesses may have been notified that I would bring this up, but Pembroke Township in Illinois, a town of 2,100 people, 85 percent African American, they don't have a natural gas pipeline. They are heating their homes with wood-burning stoves and propane because they can't afford their utility bills.

Would you agree that we—that it would be a good thing to get a natural gas pipeline into that township? That is what Jesse Jackson is trying to do and other civil rights leaders.

Mr. HOLLIE. Yes, sir, absolutely. And the thing about it is most times people don't understand that there are more pipelines running under a city or state than anything. There is pipelines in there. Another pipeline that is generating natural gas is not going to hurt anyone.

Mr. PALMER. Well, I just want to point out too that even though the recommendations from the White House was no road improvements and no new pipelines, that that is going to be very detrimental to low-income people who desperately need additional infrastructure.

My time has expired. I thank the chairman and the witnesses, and I yield back.

Ms. CASTOR. All right. Thank you.

Next up, Rep. Huffman, you are recognized for 5 minutes.

Mr. PALMER. Jared, you are muted.

Mr. HUFFMAN. There we go. It was telling me that I was having trouble with the host unmuting me. So I think I am audible now. Am I okay?

Oh, good because I can now talk about my friend —

Mr. PALMER. Well, Kathy is the host; blame her.

Mr. HUFFMAN. I can now talk about my friend, Garrett Graves' stubborn case of California envy. We have corrected him a few times now on some of these anti-California canards, and I thank my colleague, Mike Levin, for doing a great job of, once again, explaining the difference between electricity rates and electricity bills.

But today, we heard a new creative set of allegations drawn from a lawsuit, not an actual court decision, but a lawsuit, which is easy enough to file. So I will just state the obvious. In California, like everywhere else, we have industry-funded astro-turf groups and industry-funded lawsuits aimed at blocking climate reforms. But if filing a lawsuit and lobbying a bunch of provocative allegations was enough to make them true, then Rudy Giuliani would still have a law license and Donald Trump would be President.

With very few exceptions, the people and experts who have dedicated their lives to environmental justice and protecting disadvantaged communities are not hostile to clean air, to clean water, to clean energy. They don't worship at the altar of fossil fuels. Most of them agree fossil fuel pollution is a huge problem, a really bad thing. The climate change impacts are a huge problem. And if we care about EJ communities and disadvantaged communities, then we need more bold climate action, not less.

And so that is why I am really pleased that President Biden's American Jobs Plan commits 40 percent of the benefits of climate and clean energy investments to disadvantaged communities. And just last week, I had a chance in my district to see what that kind of investment could look like: a new renewably powered microgrid at the Redwood Coast Airport. This is a partnership that includes local Indian Tribes, and it will provide clean renewable power and flexible power that eliminates greenhouse gas emissions and builds resilience to climate impacts. That is the kind of thing we are doing in California.

And, Ms. Cooley, you mentioned this. You mentioned the Blue Lake Rancheria, which is in my district. That was a previous microgrid that I was pleased to support, but they are one of the partners on this new microgrid. And I want to give you a chance to respond to Mr. Hollie's claims.

He is a very effective witness. He has become a bit of a frequent flier for our Republican friends in these hearings, but his views are really an outlier among those who have dedicated their lives to serving disadvantaged communities, this notion that maintaining our dependency on dirty fossil fuels is somehow good for low-income people of color because it provides cheap energy and jobs.

So I wonder if you could speak to what you think of that view and what you have seen happening in California, where I believe the opposite is happening, where our climate programs are generating revenue that is being used for weatherization and any number of other things that are actually helping disadvantaged communities.

Ms. COOLEY. Thank you, Representative Huffman, for that question. As someone who was invited here to talk about the findings of the staff report, I will tell you that the Tribal Nations have the opportunity, like you said, not to be so reliant on the central grid, on extractive, detrimental, the fossil fuel industry. I come from a community that has seen and felt the impacts of positive but mostly negative.

And I guess decreasing the reliance also increases the resilience against climate extremes, such as power outages, and also will decrease the long-term costs on less—and less reliance off of energy sources off the reservation. This could help Tribes really achieve that energy and economic independence, sovereignty, and also the stability.

So that is what I would answer with. Thank you.

Mr. HUFFMAN. Okay. Dr. Park, same question for you on the job's side. And by the way, you know, I love UCLA too, because not everyone can get into UC Santa Barbara and they need a second choice. So thank you for being part of our hearing.

And please speak to Mr. Hollie's testimony as it pertains to the upside economically of clean air and new jobs from clean energy.

Mr. PARK. Thank you for that. I guess maybe I will start with a general point, which is that, again, we have been focusing a lot on the potential costs of clean energy, but there are a lot of hidden benefits that research shows will benefit environmental justice communities, low-income communities, possibly the most, particularly in terms of reduced air pollution, which we now know has very detrimental effects, not only on health but student cognition, even onset of dementia, worker productivity, all of these things.

The oil and gas workers, you know, Mr. Hollie referred to, yes, they may rely on that industry for their jobs, but the work that they are doing is also silently poisoning them and affecting their health as well. So, you know, these are things that we need to bear in mind as we talk, have a holistic conversation, I think, about the costs and benefits of climate policy.

Mr. HUFFMAN. All right. Thank you, Madam Chair. I yield back.

Ms. CASTOR. Thank you.

Next, we will go to Rep. Gonzalez. Good to see you. You are recognized for 5 minutes.

Mr. GONZALEZ. Thank you, Chairwoman Castor and Ranking Member Graves, for holding this hearing today, and to our distinguished witnesses for their testimony.

I think it is fair to say advocating for environmental justice is relatively easy to just say it. What is not easy is facing politically inconvenient facts about the feasibility of some of the policies proposed or, in some cases, recognizing that aggressive advocacy may direct community attention away from problems that pose a greater or certainly more immediate public health threat on the communities in question.

I would argue this political dilemma has been on full display over the last few weeks, despite the Biden administration setting ambitious climate targets, labeling carbon emissions as an existential threat that will disproportionately hurt low-income and minority Americans. They are lobbying OPEC openly to pump more oil,

knowing that this will bring down the high gas prices currently hurting low-income families.

Mr. Hollie, I don't want to spend a ton of time on California. I have lived there before. It is a beautiful state, but it is run horribly. In my view, Ohio is run much better, which is why I live there. But, in any event, after California implemented their cap and trade policy, researchers found it did not deliver local emission reductions, public health, or air quality benefits to residents in low-income communities. What it did do is it raised their utility bills, which we know are already more than 8 percent of their income. Four times higher than what wealthy American families pay.

Again, I have a lot of fond memories of my time in California, but emulating their climate policies is not something that I think we should be doing nationally and certainly not in Ohio.

My question is, how important is it to low-income minority families that we keep their energy prices affordable?

Mr. HOLLIE. It is very important. And the thing about it, it is not just me saying this. You have Reverend Jesse Jackson, Al Sharpton, and the president of—God, I can't—Mark Mauriello all saying right now that we need natural gas as we transition to clean energy. If we don't, it is going to raise the cost for low-income individuals, period.

Mr. GONZALEZ. Yeah. And I think that that is the really important point is, again, I—maybe there are some folks who are saying we shouldn't address this at all. I am not hearing that in this committee, on either side of the aisle, but I think there is a question of how do we do it and how do we do it in a way that is thoughtful and isn't going to hurt the very communities that we are trying to help.

And, with that, I want to turn to Ms. Coleman Flowers. I would like to touch on the report you worked on with the White House Environmental Justice Advisory Council. There were some things that you advocated as nonbeneficial to environmental justice communities, and I just found them perplexing. So one is nuclear energy, which I am a huge fan of; second, carbon capture, road improvements; and the final one, R&D, which is probably the one thing all of us on this committee agree on, I think.

Can you explain the thinking that led to suggest that Congress and the White House should eliminate funding for these projects moving forward?

Ms. FLOWERS. Again, I can't speak—and thank you for the question, but I can't speak on behalf of the White House Environmental Justice Advisory Council. There were about 26 of the members who gave their opinion, and they had various reasons for doing that, and I am only one person. But I think that everyone that is on that council is trying to find a way to address the problems in their communities.

I would like to say and to offer that whatever we ultimately do, I think all of us believe that there should be a just transition, be it for people in environmental justice communities or those people that are going to be impacted by the changes that we have to make, so that we can make sure that my grandson has a future in terms of a livable planet.

Mr. GONZALEZ. Can I ask you, do you personally think we should eliminate R&D funding?

Ms. FLOWERS. Research and development? Personally, no, I don't.

Mr. GONZALEZ. Okay. Thank you.

Mr. Hollie, I don't know if I will get this question in, but in your testimony, you highlighted that over 60 percent of the world's cobalt is extracted from Congo and, in most cases, mined by Congolese children who are forced into slave labor. It is atrocious.

Earlier this month, a group of more than 40 progressives—40 progressive groups signed a letter addressed to President Biden and Members of Congress that we should prioritize environmental concerns and access to affordable clean energy over issues such as human rights abuses, which includes Congolese children in slavery. As you know, China has been detaining hundreds of thousands of Uyghur Muslims in interment camps.

How should global human rights injustices figure into our thinking on environmental justice?

Mr. HOLLIE. We need to include that, and that is my whole thing. I am like, how can we talk about environmental justice and just be us here in America? It has got to be a global issue. If not, then we are hypocrites ourselves.

Mr. GONZALEZ. Yeah. I couldn't agree more. I think it highlights—look, there is important tradeoffs, there are difficult tradeoffs, not an easy issue, and I hope that we can get to a place where we start to recognize the inherent tradeoffs that are required to actually make progress.

And, with that, I yield back.

Ms. CASTOR. Okay. Next up, Rep. Brownley, you are recognized for 5 minutes.

Ms. BROWNLEY. Thank you, Madam Chair. And I apologize for being late to the hearing. I was tied up with a constituent who has had a tragic death in their family, and I just couldn't get away in time for the hearing. But thank you for having it.

My question goes to Dr. Park. I represent Ventura County in California. Ventura County is not the hottest county in our country, but it is heating faster than any other county in the country. So this is a very important issue to farmworkers, to our ag community, to our community at whole.

Oxnard is a city in Ventura County. Oxnard is a working class family with a lot of EJ impacts and, you know, home to several Superfund sites, et cetera. One thing that the City of Oxnard has done locally is that they offer free fruit trees to their residents to plant in their front yards, not only for food, but for shade.

So I guess my question, you had been—in your comments, in your testimony, you talked about we need to look at smarter adaptation policies. Shade is, you know, certainly something that comes to my mind quickly when we think about heat, heat equity, and, you know, adaptation. What are some of the other, what you would consider, smart adaptation policies that you would suggest?

Mr. PARK. Great. Thank you for that question. Just a quick story on that note. I will never forget driving back from a workshop in UC Santa Barbara through Oxnard on a hot day where we had wildfires, and the smoke was billowing through, and we had agricultural workers still working in the heat and the smoke, just to

kind of give you a visual of the kinds of pressures that I imagine your constituents are facing.

In terms of smart adaptation policy, I mean, you mentioned trees. I am not as familiar with the efficacy of trees, but I do know that they have cooling benefits, particularly in urban areas, though you want to be careful about the water stress, right, in a state like California. So there are tradeoffs certainly.

This may sound a little mundane, but even something as simple as making sure that our schools, right, and homes in low-income communities have reliable grids and access to air-conditioning when they need it. You know, air-conditioning sometimes gets a bad wrap in environmental circles because if the electricity grid is not clean, it can lead to more greenhouse gas emissions; but if it is a clean electricity grid, we know that air-conditioning can have lifesaving benefits, particularly, again, for disadvantaged communities.

So those are just two suggestions, but I think there are many more if we start to look more carefully under the hood in terms of what kinds of investments and policies would be good to pursue there.

Ms. BROWNLEY. So California has, you know, laws with regards to protecting our farmworkers, particularly from heat, making sure that they have water and shade, et cetera. Is there—can you make any determinations about the impacts of those laws and, you know, a quantifiable improvement?

Mr. PARK. That is another great question, and I am—you know, I am going to be the typical researcher who says we need more data and we need to do more research. But in this case, I think we really do need more data to know exactly what kinds of policies will be most effective at protecting workers from climate risks, whether that is heat or something else, in part because as we have learned from, I think, the COVID pandemic, there are difficult tradeoffs involved when you are trying to regulate the workplace from environmental hazards to make sure that the economic costs are reasonable.

I tend to be an optimist and believe that there are ways to do this. And, certainly, in our data we observe that the heat—the impact of heat on injuries appears to be declining over time in California, which may have something to do with the fact that California was the first state to implement mandatory workplace heat standards. But as a researcher, I do think there needs to be more data collection and more research to really understand what kinds of policies we want to be supporting at a Federal or local level in terms of energy.

Ms. BROWNLEY. So there is not any comparative data that you have for other states that haven't implemented rules in the workplace compared to California? I would assume that since California is one of very few states that have, that the risks that you spoke of in your testimony have got to be greater across—when you think of the whole country.

Mr. PARK. I hesitate to make extrapolations, but that kind of comparative analysis is certainly on my wish list of things that we should do urgently, yes.

Ms. BROWNLEY. Thank you very much.

Thank you, Madam Chair. I yield back.

Ms. CASTOR. Thank you.

Next, we will go to Rep. Bonamici. You are recognized for 5 minutes.

Ms. BONAMICI. Thank you so much, Chair Castor and Ranking Member Graves. And to the witnesses, I have read all your testimony, and I very much appreciate your being here today.

The record-breaking heat wave across the Pacific Northwest last month was one of the deadliest natural disasters in my home state of Oregon. And my heart goes out to the families of the 116 Oregonians who lost their lives. Those are those we know of so far. There were many more across the region.

I want to repeat and emphasize this fact. Last week, the extreme temperatures claimed more than a hundred lives in my home state of Oregon. People died in their homes because of the heat. And as temperatures surged to unprecedented triple digits, low-income neighborhoods became heat islands. They are surrounded by concrete, excessive emissions from highways. Many seniors lacked air-conditioning or even fans. Communities of color live on streets with fewer trees and green spaces to provide shade. And that is, as we know, because of historic redline policies from the past.

Dr. Vivek Shandas from Portland State University has been studying these disparities for decades, and during the heat wave, he and his son actually used a thermal camera and they went around and measured temperatures in different neighborhoods across Portland. In southeast Portland, Dr. Shandas recorded an air temperature of 124 degrees. That was 25 degrees higher than the measurement around the same time in more prosperous neighborhoods.

So we can't ignore the consequences of urban heat islands for communities of color and low-income communities, and scientists have already found that the deadly heat wave would have been virtually impossible without human-caused climate change.

We have to take this bold comprehensive action to protect our communities from similar disasters in the future.

So, Dr. Park, I want to follow up on Rep. Brownley's questions. Far too many lives were lost during the heat wave. And I am on the Education and Labor Committee, and I am particularly concerned about workplace conditions. Tragically, Sebastian Francisco Perez, a 38-year-old farmworker, died at his work site in St. Paul, Oregon, when temperatures were 115 degrees in the Willamette Valley on June 26. This is unacceptable.

We know that the climate crisis means that more people like Sebastian are working in hazardous conditions. And Oregon followed California and implemented standards, but it was after Mr. Perez passed.

Dr. Park, so what steps should Congress take to make sure people have access to workplace protections in the—with the threats of extreme weather, but also we have the wildfire smoke that is becoming more and more prevalent?

Mr. PARK. Yeah, Representative, thank you for that question.

And just, you know, the case—the tragic case that you just mentioned is something that is consistent with our data. You know, one of the surprising things that we found is that the effect of heat on

injuries actually appears to be larger for younger workers, workers in their twenties and thirties and forties, as opposed to workers in their fifties and sixties. We still can't say definitively why, but it may have something to do with the kinds of occupations or industries and the dangerous work environments that they are working in when the extreme heat hits.

In terms of policy responses, you know, again, I hesitate to make blanket policy recommendations, but I think the research clearly shows that this is an issue that official statistics historically may have understated the importance of. And, again, I know we have been talking a lot about the inequality and the environmental justice submission of this, but these are costs that are borne by society as a whole as well. You know, the worker suffers in terms of pain and medical bills and lost wages, but employers suffer lost productivity, retraining costs, hiring costs. We all pay into insurance systems, et cetera.

So, again, it is just—I think it is important to think of the issue of heat and climate risks in general as affecting all sectors.

Ms. BONAMICI. Absolutely.

And I wanted to get a question in to Ms. Cooley as well. I appreciate in your testimony you reference ocean acidification, harmful algal blooms, hypoxia, and the consequences for indigenous livelihoods. We know that warmer temperatures in the Columbia River are further endangering salmon, which are a fundamental part of the identity, culture, and treaty rights of our Northwest Tribes. And in our region, the Columbia River Inter-Tribal Fish Commission partners with NOAA's Integrated Ocean Observation System to manage a network of observation stations and buoys in the Columbia River.

So, Ms. Cooley, how can Congress better support partnerships with Tribes to advance climate science, and what are some of the existing barriers for Tribes in accessing funding for resilience efforts?

Ms. COOLEY. Thank you, Representative. I think one of the main things the U.S. Government can do is remove barriers to that Tribal sovereignty. As you mentioned, salmon and other subsistence foods are absolutely critical. Actually, many Tribes call them critical infrastructure for their ways of life, and they use that to respect, include, and also, you know, protect the Traditional knowledges.

So the investment in funding, again, access to the resources for the training of Native Americans to keep jobs on the reservation, I think, is critical to the livelihoods in terms of their traditional ways of life and their foods that they depend on.

Thank you.

Ms. BONAMICI. Thank you so much.

Madam Chair, I yield back.

Ms. CASTOR. Well, thank you very much.

You know, listening to our witnesses today here as we close out the hearing, I think, I really appreciate your perspectives, and that of the members who are coming from different parts of the country. Everyone is kind of suffering through the escalating impacts of the climate crisis. But the witnesses today really bolstered the need to enact our recommendations in our Climate Crisis Action Plan re-

leased last year into law, and we have an opportunity to do that this summer through the American Jobs Plan, where we want to direct 40 percent of the benefits of infrastructure investments to environmental justice communities. They have been carrying a disproportionate burden for too long, and that is hopefully what we will be able to do.

So thanks again to our terrific witnesses.

Without objection——

Mr. GRAVES. Madam Chair.

Ms. CASTOR [continuing]. I would like to enter into the record two reports. First, the introduction from a July 2021 report by the Center for Progressive Reform, Earthjustice, and the Union of Concerned Scientists, titled, "Preventing 'Double Disasters': How the U.S. EPA Can Protect the Public from Hazardous Chemical Releases Worsened by Natural Disasters."

The second is a July 2021 paper titled, "Widespread Race and Class Disparities in Surface Urban Heat Extremes Across the United States."

And I would also, in the interesting exchange of Ms. Cooley with Representative Palmer over droughts in the Southwest, I just encourage everyone to go back to the most recent National Climate Assessment that really made it clear through a scientific consensus here that lower precipitation, increasing temperatures are amplifying droughts, especially in the Southwest. And the National Climate Assessment states specifically that disproportionately is burdening our Tribal communities.

So I encourage you all to refer back to that as well.

So, without objection, we will enter those into the record.

[The information follows:]

Submissions for the Record

Representative Kathy Castor
Select Committee on the Climate Crisis

July 15, 2021

ATTACHMENT: Flores, D.; Kalman, C.; Mabson, M.; & Minovi, D. (2021 July). *Preventing Double Disasters: How the U.S. Environmental Protection Agency Can Protect the Public from Hazardous Chemical Releases Worsened by Natural Disasters*. Center for Progressive Reform, Earthjustice, and the Union of Concerned Scientists.

The report is retained in the committee files and available at:
http://progressivereform.org/our-work/energy-environment/preventing-double-disasters/

ATTACHMENT: Benz, S. A., & Burney, J. A. (2021). "Widespread race and class disparities in surface urban heat extremes across the United States." *Earth's Future*, 9, e2021EF002016.

The article is retained in the committee files and available at:
https://agupubs.onlinelibrary.wiley.com/doi/10.1029/2021EF002016

Ms. CASTOR. And, Ranking Member Graves, do you have any unanimous requests?

Mr. Graves. I have a UC request.

Ms. CASTOR. Go ahead.

Mr. GRAVES. Yes, ma'am. Madam Chair, we have a UC request to submit a letter from the three river parish presidents to President Biden regarding some of the employment activities and industrial activities in their three parishes. I have a document indicating

that electricity rates in California, if the Louisiana rate applied, would go from an average of $124 to $58.

And, Madam Chair, most importantly, I have a document from the James Beard Foundation showing that Louisiana restaurants far surpass those in Alabama, just to get back and document against Mr. Palmer's underhanded comment about our ability to cook.

Ms. CASTOR. Is there any objection to that?

Okay. Then, without objection——

Mr. PALMER. I object that he is trying to enter that false report from Louisiana restaurants.

Ms. CASTOR. Well, thank you all again for your very insightful testimony. We have a lot—we have our work cut out for us. Thanks again.

And we are adjourned.

[The information follows:]

Submissions for the Record

Representative Garret Graves
Select Committee on the Climate Crisis

July 15, 2021

ATTACHMENT: Republican Committee Staff Analysis of the average cost of electricity bills in California if the Louisiana electricity rate was applied, using April 2021 data from Saveonenergy.com.

Based off of this data, if electricity rates in California were the same as electricity rates in Louisiana, the average monthly electric bill in California would be reduced by 52.7%—falling from $124.33 per month to $58.73 per month.

The analysis is retained in the committee files and data used is available at: https://www.saveonenergy.com/learning-center/post/electricity-bills-by-state/

ATTACHMENT: Letter from Matthew Jewell, St. Charles Parish President; Pete Dufresne, St. James Parish President; and Clint Cointment, Ascension Parish President, to President Biden regarding the industrial corridor that spans from Baton Rouge to New Orleans, Louisiana.

June 2, 2021

President Joseph R. Biden
The White House
1600 Pennsylvania Avenue, N.W.
Washington, DC 20500

Dear Mr. President,

On January 26, 2021, when you addressed the nation from the White House, you referred to the industrial corridor that spans from Baton Rouge to New Orleans, Louisiana as "Cancer Alley." This harmful term creates a dangerously **false** narrative with implications that could negatively impact our state and region for years to come. As Parish Presidents from this region, we respectfully ask that you discontinue the use of three-decade-old false rhetoric that is highly harmful to our state and local economy. As elected leaders of the region, our priority is the health and safety of our residents.

Decades of health data compiled by the Louisiana Tumor Registry, an award-winning data aggregator administered by Louisiana State University's School of Public Health, demonstrates that overall Industrial Corridor cancer rates are no different than those in the rest of the state. Contributing factors for cancer such as high rates of smoking, obesity, physical inactivity, and lack of access to health care resources are more prevalent in Louisiana than in many other states. Cases of cancers attributed to environmental exposure rank near the bottom of this list for Louisianans.

The 2020 County Health Rankings Report issued by the Robert Wood Johnson Foundation corroborates these results. Further, the report demonstrates that parishes in Louisiana's Industrial Corridor actually have **better** overall health outcomes than the rest of Louisiana.

Businesses gravitate to our parishes due to our unique position along the Mississippi River. In addition to river accessibility, our area is home to four Class 1 rail lines, an international airport, and ample natural resources for manufacturing such as natural gas, oil, salt, and sulfur. Companies invest billions of dollars to locate in our parishes. That investment and business operation is the foundation of our parishes' development and continues to be a significant factor in our growth and economic development.

The revenue generated by the industry is crucial to our parishes. In 2019, the oil and gas industry generated more than $4.5 billion in state and local tax revenue, directly impacting our parishes. The chemical industry alone generated nearly $1 billion in taxes and fees for local governments, which was enough to support 40 percent of wages for public school teachers in our state. Collectively, industries in our region generate up to 90 percent of *ad valorem* taxes and upwards of 50 percent of sales tax

revenue in our parishes. This tax base supports our education system, law enforcement, and provides critical funding for things such as clean drinking water and flood protection.

In addition to being essential to the nation's energy stability and security, the oil, gas, chemical, and manufacturing industries create more than 100,000 direct jobs throughout Louisiana. These jobs pay an average of $149,000 a year, over three times the national average ($51,000) and more than four times the average in Louisiana ($41,260). With benefits such as health insurance, retirement plans, and paid time off, these jobs create an opportunity for our residents that pay dividends for generations to come.

The United States has some of the most stringent environmental laws in the world. Over the last 30 years, air emissions in Louisiana have decreased by 70 percent. Companies located in our region continue to develop innovative solutions to minimize emissions and reduce their carbon footprint through significant investment in research and development to improve and modernize their processes.

Industrial businesses have a vested interest in contributing to the stability and progress of the communities in which they operate. They and their employees contribute tens of thousands of volunteer hours of charitable work and millions of dollars to philanthropic activities that improve the quality of life of our residents. Quite simply, the chemical, oil and gas, and manufacturing industries enhance our communities.

Your words matter. We ask that you please discontinue using the inaccurate term "Cancer Alley," and we invite you to visit our region to see firsthand the benefits industry has provided to our communities.

We appreciate your review of this information and stand ready to promote South Louisiana's value to the nation and world. **Science shows that industry is not the driving force of cancer rates in the river region**. Please help us discourage using the term "Cancer Alley" as we work together toward a healthy, sustainable, and innovative future.

Most Respectfully,

Matthew Jewell	Pete Dufresne	Clint Cointment
St. Charles Parish President	St. James Parish President	Ascension Parish President

CC: Senator Bill Cassidy
Senator John Kennedy
Representative Steve Scalise
Representative Troy Carter
Representative Clay Higgins
Representative Mike Johnson
Representative Julia Letlow
Representative Garret Graves
Louisiana Governor John Bel Edwards

The letter is retained in the committee files and is available at: https://htv-prod-media.s3.amazonaws.com/files/letter-to-potus-final-6-2-21-1623420088.pdf

[Whereupon, at 4:20 p.m., the committee was adjourned.]

United States House of Representatives
Select Committee on the Climate Crisis

Hearing on July 15, 2021
"Advancing Environmental Justice Through Climate Action"

Questions for the Record

Catherine Coleman Flowers
Founder and Director
Center for Rural Enterprise and Environmental Justice

THE HONORABLE KATHY CASTOR

1. Ms. Flowers, the impacts of the climate crisis are not distributed equitably, and we see many ways that climate impacts, from worsening heatwaves to floods, hurt low-income households and communities of color first and worst. What steps should Congress take to accelerate and ensure disaster recovery reaches low-income and rural communities following disasters?

According to a 2009 University of California report, floods, air pollution and extreme heat are among the climate events that result in higher death for African American and low-income individuals. This study also cited the economic factors as determinants in this uneven distribution. In my view, systemic racism is also a factor.

A recent Washington Post article stated: A growing body of research shows that FEMA (https://www.nytimes.com/2021/08/05/climate/FEMA-disaster-money-climate.html), the government agency responsible for helping Americans recover from disasters, often helps white disaster (https://www.nytimes.com/article/tropical-storm-danny-hurricane.html) victims more than people of color, even when the amount of damage is the same. Not only do individual white Americans often receive more aid from FEMA; so, do the communities in which they live, according to several recent studies based on federal data.

How do we change this? First, Congress should accelerate disaster recovery in low-income or BIPOC communities by making sure that the current formulas for provide for equitable distribution of disaster relief. Regulations should allow for recovery aid to families living on heir's property especially in rural communities. Scorecards should be made public to show who received aid, how much and where it was distributed. Also supporting the guidance offered in Justice 40 will also a roadmap for equitable recovery.

https://data.globalchange.gov/report/uca-climategap-2009

https://www.washingtonpost.com/nation/2021/07/11/fema-black-owned-property/

https://www.nytimes.com/2021/06/07/climate/FEMA-race-climate.html

2. Ms. Flowers, in your written testimony, you note that climate-fueled extreme weather events may exacerbate existing risks to frontline communities living near industrial and chemical facilities along the Mississippi River. What are the existing risks to these communities, how could climate change make things worse, and what should Congress do to help frontline communities?

In accessing some of the risks to these communities and how climate change makes things worse, I will reference a 2016 EPA publication entitled, What Climate Change Means for Mississippi. "Coastal homes and infrastructure will flood more often as sea level rises because storm surges will become higher as well. Rising sea level is likely to increase flood insurance rates, while more frequent storms could increase the deductible for wind damage in homeowner insurance policies. Many cities, roads, railways, ports, airports, and oil and gas facilities along the Gulf Coast are vulnerable to the combined impacts of storms and sea level rise. People may move from vulnerable coastal communities and stress the infrastructure of the communities that receive them." Testimony from others have already indicated the impacts seen in places like Mississippi, but all along the Mississippi especially in Cancer Alley.

The Justice40 Initiative is a significant part of that commitment. For the first time in our nation's history, the Federal government has made it a goal that at least 40-percent of climate and clean energy investment benefits flow to disadvantaged

communities. The Justice40 Initiative has the potential to deliver tangible, positive benefits to disadvantaged communities across the country; by investing in legacy pollution cleanup, clean energy and transportation, quality housing, and more, the Biden administration will help begin to address our nation's legacy of injustice. This will be strengthened by Congressional action.

Congress should pass the infrastructure plan and reconciliation package to provide good paying union jobs, as well as addressing overburden and underserved communities that are greatly impacted by climate change.

https://19january2017snapshot.epa.gov/sites/production/files/2016-09/documents/climate-change-ms.pdf

3. Ms. Flowers, in your testimony, you referenced the pollution burden on environmental justice communities in St. James Parish and St. John the Baptist Parish in Louisiana. In March 2021, United Nations human rights experts condemned environmental racism in this area. Could you please describe the kinds of health, environmental, and socio-economic challenges these environmental justice communities are experiencing? How can Congress help these communities? Please feel free to supplement your response with any statements from environmental justice leaders and studies documenting ongoing health, environmental, and socio-economic challenges.

The best way for me to respond to this question is to enter into the record the following: Letter to President Biden from Sharon Lavigne, President, RISE St. James

https://labucketbrigade.org/letter-from-sharon-lavigne-to-pres-biden-on-cancer-alley-formosa-plastics/

Letter to Michael Regan, EPA Administrator: RE: Urge Consideration of Escalating Hazards to Chemical and Industrial Facilities Due to Climate-Fueled Extreme Events, Particularly on Environmental Justice Communities

https://cpr-assets.s3.amazonaws.com/documents/house-select-cmte-climate-crisis-ltr-epa-rmp-rule-improvements-072921.pdf

Finally, I am also including a recent study from Tulane University:

https://
law.tulane.edu/sites/law.tulane.edu/files/u1286/LTR%20Cancer%20Rates%20v%20Pollution-Related%20Risk%202021-6-21%20rev.%202021-6-23.pdf.

Congress can help these communities by providing funding for the communities to do the type of air quality monitoring needed to hold the manufacturers accountable; enacting or enforcing laws that will protect these communities now, and climate action because the emissions from these industrial sources are creating the climate catastrophes that are impacting all of us and generations to come.

Questions for the Record

Nikki Cooley
Co-Manager, Tribes & Climate Change Program,
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THE HONORABLE KATHY CASTOR

1. Ms. Cooley, the impacts of the climate crisis are not distributed equitably, and we see many ways that climate impacts, from worsening heatwaves to floods, hurt low-income households and communities of color first and worst. What is the experience of Tribes and Indigenous communities working to recover from disasters and tap federal funding and resources?

To the Honorable Kathy Castor:

Thank you for your question. Tribes and Indigenous communities have been addressing and responding to climate impacts and practicing emergency management for hundreds of years. They have had a long and varied history of storytelling and culturally unique ways of communicating with one another and with other communities. When seeking to communicate with Tribes, this rich tradition of storytelling

and oral histories should be incorporated. With the addition of forced relocation, cultural assimilation *and* increasing climate change impacts, they have had the addition of learning and framing their emergency responses within a Western, non-Tribal and Indigenous paradigm.

Barriers such as a lack of effective leadership at local, state, federal, and Tribal levels of government have prevented Tribal emergency management programs from making greater progress on responding to and mitigating climate-driven hazards. It is estimated that currently less than 25% of all Tribal nations have an Office of Emergency Management, and less than 10% of those have full-time emergency managers. Without a Tribal emergency management program, it is deeply challenging to implement and adhere to a number of federal mandates and policies. It is imperative that there is an Increase resources and support at the state and federal levels to develop Tribal emergency management programs across Tribal and Indigenous nations. Additionally, the increase in coordination with state and federally recognized Tribal nations is needed for the Tribal nations to respond to and prepare for climate driven hazards.

References Page

Zambrano, L., Byrne, S., Cedeno, J., Pastos, N., Nutter, R., Walsh, W., Akelerea, J., Gutierrez, M., Zendejas, J., Gutierrez, P., McCabe, M., Sundown, E., Pennington, J., Dent, L., Jones, W., Johnson, R., Ostenberg, R., & DesRosier, R. (2019). Building Cultures of Preparedness with Tribes. Green Bay, WI.

Questions for the Record

Dr. R. Jisung Park
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THE HONORABLE KATHY CASTOR

1. Dr. Park, you have just completed new research on the extent of heat-related injuries. Previously, official estimates have been that exposure to heat causes 4,000 workplace injuries a year. But by reviewing worker compensation claims, you have found that there are 15,000 or more workplace injuries every year just in California. Why have agencies like the National Institute of Occupational Health and the Bureau of Labor Statistics underestimated the dangers of exposure to heat in the workplace?

It's worth taking a step back here. Agencies including the ones mentioned have been noting that official statistics likely underestimate heat-related safety risks for quite some time. I'm not a physician, but my understanding is that it is very difficult to forensically attribute a particular illness or injury to heat illness or other heat-related factors on a case by case basis.

One difference between our study and many other previous analyses is that we do not limit the analysis to incidents that are officially recognizable as heat illnesses, but include in our analysis all injury types, and let the data tell us how even those ostensibly unrelated injuries—which are vastly greater in number on average—vary with daily temperature.

2. Dr. Park, there are heat waves occurring across our country this summer. When temperatures increase to 100 degrees or more, how much does the chance of injury increase and is this a significant increase in risk for workers?

At least in our data, which covers the State of California, a day with maximum temperature in the 100's or higher leads to a roughly 10 percent (or higher) increase in injury claims relative to milder days in the 50's or 60's.

3. Dr. Park, your data is from California, one of the few states with state rules protecting workers from heat exposure. Does this suggest that the risks might be even higher in other states without protective laws, and do you believe we need stronger federal standards to protect workers from heat exposure?

My co-authors and I hesitate to make strong claims regarding other states, given the many potential differences in settings. We are also cautious not to interpret our data as necessarily showing that the California heat standard was what caused the

decline in heat-sensitivity of injuries documented during our study period. That said, it seems unlikely that the general relationship between hotter temperature and workplace safety is limited only to California. In fact, another recent study that uses similar worker's compensation data from the state of Texas (Dillender, 2019), finds a similar relationship between extreme temperature and injuries.

Whether we need stronger federal standards to protect workers from heat exposure, and what form of regulation that would ideally take, are important questions for which I believe we still need better data to decide. A useful analogy may be that our study is more like an MRI or CT scan that helps reveal the scope of the problem than a blueprint for the ideal treatment regimen moving forward. When it comes to regulating the workplace, I think we should be cautious not to impose extra costs that are ultimately born by workers, firms and the rest of society. It may also be worth considering broader factors—including labor market concentration and monopsony generally—that may affect workers' bargaining power, and which may ultimately affect the likelihood that effective safety measures are put in place even without specific regulation or oversight.

4. Dr. Park, a striking aspect of your findings is that it is not just farm workers and construction workers who work outside who are at risk from exposure to heat. You are finding that workers who work inside in warehouses, factories, and food processing facilities also are in danger when temperatures rise. If you add these outdoor workers with at-risk indoor workers, that is over 30 million Americans who can be at risk when our nation is facing heatwaves like we are seeing this summer. Should we be concerned about their safety? How serious were the heat-related injuries you observed in the data? Did they cause workers to miss work and lose income? Did they lead to serious injuries? Do we need stronger laws to protect Americans from the dangers of exposure to heat in the workplace?

Yes, our study finds that hotter temperature increases injuries not only in outdoor settings, such as agriculture or construction, but also in some indoor settings as well. These include industries like warehousing, manufacturing, and wholesale, where there are many more potentially exposed workers. Data from occupational surveys suggest that many of these workers often work in indoor environments that nevertheless become very hot on warmer days, either because there is little to no air conditioning, or because they are also contending with indoor sources of heat, such as stoves and kilns or manufacturing machinery.

We know based on previous studies that injuries and illnesses serious enough to be reported to worker's compensation—which still only captures a subset of the totality of injuries and illnesses on the job—end up causing significant economic damage to workers, their families, and to society as a whole. This comes in the form of direct costs such as medical expenses and lost wages due to missed work, as well as indirect costs including adverse consequences for injured workers' likelihood of securing well-paying employment in the future (studies find that, on average, hospitalizations lead to persistently lower wages) or employers' costs of lost productivity and retraining/recruitment.

5. Dr. Park, your findings are a stark illustration that the people who suffer the most from the climate crisis are not the wealthy; they are low-income workers and low-income communities. How much greater are the risks for a low-income worker than a higher income worker? Why are low-income workers at greater risk than upper income workers?

Emerging research suggests that climate change affects the rich and the poor in different ways—not only across rich and poor countries, but also across individuals within countries, even within individual states, cities, and neighborhoods. We are still learning about the exact nature and extent of these differences, and what can be done to better insulate the most vulnerable from climatic shocks.

In our study, we find that the average worker in the bottom quintile of the income distribution experiences a five times greater risk of workplace injury due to heat. This is in part because lower income workers are more likely to work in dangerous work environments to begin with, and also because they are more likely to live in hotter places due in part to housing costs.

6. Dr. Park, when people think about environmental justice, they think about the extra pollution burdens that disadvantaged communities have to bear. This is clearly a serious problem. But your research shows there is another significant dimension to this problem. Not only do low-income communities face heavier pollution burdens and live in neighborhoods with fewer trees and higher temperatures, workers from these commu-

nities face much greater risks from heat exposure when they go to work. You have also done work showing that exposure to heat stunts learning in schools and that minority children are the most affected. Your work shows why justice and the environment are inseparable issues. If we want our disadvantaged communities to live in safe environments, if we want low-income workers to work in safe workplaces, if we want children from low-income communities to thrive at school, we have to take our environmental threats—and especially climate change—seriously and urgently. Do you have any recommendations for how we can address these issues?

Our work and others' is beginning to show how climate change may exacerbate underling economic inequalities. In other work my colleagues and I have done on heat and learning, we find that hotter temperature is far more problematic for learning for Black and Hispanic minorities and lower income students, in part because they are significantly less likely to have modernized school facilities that have adequate ventilation and air conditioning. This points to an immediate area in which policymakers may help to address the threats that climate change pose for low-income communities: by investing in school infrastructure.

More broadly, the Federal Government could play an important role in getting ahead of the climate adaptation curve: by investing in information-gathering and policies that help prevent the climate shocks that are at this point inevitable from further exacerbating economic inequalities. In particular, the Federal Government could help engage in coordinating better data collection, as there is still much we do not know regarding who is most vulnerable to various climate shocks and why. Furthermore, research on risk mitigation and social insurance suggests that the Federal Government also will need to play a role in helping to spread the risk of climate shocks—which manifest differently across different parts of the country, hitting some harder than others, and on time frames that may also vary by region—across a wider pool of taxpayers.

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