

# GREEN RECOVERY PLANS FOR THE COVID-19 CRISIS

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## HEARING BEFORE THE SUBCOMMITTEE ON EUROPE, EURASIA, ENERGY, AND THE ENVIRONMENT OF THE COMMITTEE ON FOREIGN AFFAIRS HOUSE OF REPRESENTATIVES ONE HUNDRED SIXTEENTH CONGRESS SECOND SESSION

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## **GREEN RECOVERY PLANS FOR THE COVID-19 CRISIS**

**Wednesday, September 23, 2020**

HOUSE OF REPRESENTATIVES  
SUBCOMMITTEE ON EUROPE, EURASIA, ENERGY, AND THE  
ENVIRONMENT  
COMMITTEE ON FOREIGN AFFAIRS  
*Washington, DC*

The subcommittee met, pursuant to notice, at 10:04 a.m., via Webex, Hon. William Keating (chairman of the subcommittee) presiding.

Mr. KEATING. The House Foreign Affairs Subcommittee will come to order without objection. The chair is authorized to declare a recess of the committee at any point and all members will have 5 days to submit statements, extraneous material, and questions for the record, subject to the length limitations and the rules.

To insert something into the record, please have your staff email the previously mentioned address and contact full committee staff.

Please keep your video function on at all times, even when you are not recognized by the chair. Members are responsible for muting and unmuting themselves and please remember to mute yourself after you have finished speaking.

Consistent with House Resolution 965 and the accompanying regulations, staff will only mute members and witnesses as appropriate when they are not under recognition to eliminate background noise.

I see that we have a quorum. Thank you all for being here, and now I will recognize myself for opening remarks,

Pursuant to notice, we are holding a hearing today entitled “Green Recovery Plans for the COVID-19 Crisis.”

One year ago, we held a hearing to coincide with the U.N.’s Climate Action Summit, where a panel of youth climate activists testified before this subcommittee about the urgency of addressing the climate crisis.

Today, 1 year later, that urgency has only grown. This year’s climate week is a joint effort by the Climate Group Alliance with the United Nations and the city of New York to bring together a broad range of stakeholders to address how we rebuild after this global COVID-19 pandemic.

The safety measures we had to put into place to protect public health have been crippling economically, with millions unemployed and entire sectors of the economy decimated. Despite these measures, the virus itself has taken over 200,000 American lives and nearly 1 million deaths globally.

As we all should have come to realize at this point, we cannot simply wish the virus away. We must wear masks and social dis-

tance, and by doing so we will actually diminish the effects of this so we can get back to family, to work, and to everything and everyone that we miss.

Similarly, we cannot wish away the economic realities resulting from this virus. Americans should not have to choose between their health and their economic security.

In the near term, we must support the communities hardest hit by this temporary crisis, and for the longer term we must begin planning a more sustainable and sensible economic recovery, one that harnesses American ingenuity, one that will leave us more economically secure and advance our environmental and public health.

As we speak, unprecedented wildfires, storms, floods are ravaging our country, destroying homes, lives, and livelihoods. How much death and destruction from a changing climate will we watch before we act?

The choice before us is obvious. We could continue throwing money at short-term fixes, Band-Aids that throw away money on these solutions that cannot possibly solve the problems of our 21st century communities.

Or we could invest strategically in technologies, the ideas and the initiatives that buoy our economy and develop jobs and industries to stabilize the financial crisis sparked by this pandemic and create safer, healthier, more sustainable communities for decades and generations to come.

Governments around the world are facing the same choice. However, they are not hesitating to develop economic relief plans that address not only the pain from the pandemic but also the inevitable pain we will continue to experience from climate change.

They are using economic recovery or economic stimulus funding as an opportunity to incentivize cleaner technologies that promote jobs and clean and renewable energy that will be cheaper, safer, more efficient, and less vulnerable to geopolitical disruptions.

For example, the EU has allocated 20 percent of its 2020 stimulus spending toward green priorities. I see the potential for these opportunities in my own district where we are creating high-paying jobs through investments in offshore wind, bringing together universities and community colleges, American businesses and international partners.

Our European counterparts have seen an incredible range of opportunities from jobs and economic growth as they tackle the existential threat of climate change.

We have got work to do to catch up to them. I have legislation to support these kinds of investments to ensure that local work force is prepared for the opportunities in the offshore wind industry.

The House will also be voting this week on a package of meaningful reforms to move us close to realizing our clean energy future. But there is still so much that we can and must do. The private sector understands this. Rarely does a day go by without a company announcing steps toward zero emission goals.

That is why it is so disheartening that this is still a debate here in the U.S. and that we are not all working furiously together, driving forcefully toward obvious and clear solutions like countless

businesses across the private sector and like so many of our foreign partners are doing right now.

Americans see the reality before them that fled furious infernos with nothing but the clothes on their backs as their homes and livelihood burns in the rear view mirror.

Others have diligently boarded up homes and businesses in nervous anticipation of the waters brought by rising seas and crushing storms, fully aware of the inevitability of the wreckage to come.

Americans of all ages and all backgrounds see what is coming as do the people around the world. It is a false choice between our economy and the healthcare of our people and our planet.

We can and must act to protect all of these things. So I am eager for the conversation today with our panel of experts and, hopefully, we can begin to shape a responsible and sustainable economic response to this pandemic.

I would like to thank our witnesses for joining us today and I now turn to the ranking member for his opening remarks, Representative Kinzinger.

Mr. KINZINGER. Well, thank you, Mr. Chairman, for calling the hearing, and to the panel, thank you for being with us today in this new unique way of doing it.

While the coronavirus pandemic has caused incalculable human suffering across the U.S. and around the world, we now do have the opportunity to rebuild our communities, economies, and our environment.

It is still incredible to me to see photos right after lockdowns took effect where people in India could see the Himalayas for the first time in their lives because the smog from factories had cleared, or in Italy where the once-polluted canals—

[Audio break.]

Mr. KEATING. Representative Kinzinger, I think you have gone mute. If you could just suspend for a second and see if we can check this technologically.

We are pausing for one moment, Representative, just to make sure. I just want an okay from everyone that the technology has created—Representative Kinzinger can start from his opening remarks if he chooses with the full time component.

[Brief Recess.]

Mr. KEATING. What I will do, I am going to go through the witness introductions next and then we will try Representative Kinzinger, and if the technology is not corrected we are going to—we will go and proceed in another order.

So let me take this pause to introduce our witnesses and I would like to thank them for joining us.

Dean Kyte is the dean of the Fletcher School of Law and Diplomacy at Tufts University. She previously served as special representative of the United Nations Secretary General and chief executive officer of sustainable energy for all where she led efforts to promote and finance clean energy to further the U.N. sustainable development goals. She was also vice president and special envoy for climate change at the World Bank Group. Thank you for joining us.

Mr. John E. Morton is partner at Pollination and a senior fellow at the Atlantic Council. He currently serves as a senior fellow at

the European Climate Foundation. He previously served as White House senior director for energy and climate change at the National Security Council during the Obama Administration. Thank you for being here.

Dr. Jonas Nahm is an assistant professor of energy, resources, and environment at the School of Advanced International Studies at Johns Hopkins University. His research focuses on the intersection of economic and industrial policy, energy policy, and environmental politics.

Dr. Dalibor Rohac is a resident scholar at the American Enterprise Institute where he focuses on European political and economic trends. He is currently a visiting junior fellow at the Max Beloff Center of Study of Liberty and at the University of Buckingham in the U.K., and a fellow at the Institute of Economic Affairs in London.

Now, let us see if we can move back to Ranking Member Kinzinger's opening remarks.

[Pause.]

Mr. KEATING. All right. If we have a delay then I will recognize Representative Wilson, if you are prepared.

Let us go back to Representative Kinzinger. I believe we have him back.

Representative Kinzinger.

Mr. KINZINGER. Yes, you do.

Mr. KEATING. You can start from the beginning with your opening remarks.

Mr. KINZINGER. Okay. All right. Sorry. Let me know if I—

Mr. KEATING. Thank you for joining us again.

Mr. KINZINGER. Yes, me too. Let me know if I cut out again, and then you can move on and we will do it after.

So, Mr. Chairman, thank you. To the panel, thank you for being here. Very much appreciated.

This pandemic has caused a lot of human suffering around the U.S. and the world, and we have the opportunity now to rebuild our communities, our economy, and our environment.

It is still incredible to see the photos after the lockdown took effect where people in India could see the Himalayas for the first time in their life and the smog from the factories had cleared, or in Italy where the once-polluted canals of Venice became crystal clear.

In China, we saw air pollution drop almost 11 percent because of COVID restrictions, and it is a shame to see that these numbers have risen back to pre-COVID levels but there is a silver lining.

Through American leadership and innovation we can reverse the damage that we have done and ensure a clean environment for the next generation. But before we even discuss the important role that green technology plays in our world, the U.S. and our European allies must hold the world's top polluter, China, accountable.

We must not forget that for every ton of carbon dioxide reduced by the U.S., China adds nearly four times as much. So while the U.S. works to clean the air we breathe, China pollutes it.

Additionally, the U.S. Government, in coordination with the private sector, needs to ensure that American innovation can flourish in a post-COVID environment. If we begin slapping unnecessary



regulations on the energy sector, we are only going to suffocate the entrepreneurial spirit in the United States.

And last but not least, we must stress the importance of energy diversification. Not only will energy diversity stimulate weakened economies but it will help to provide the energy security to nations around the world that we need.

Take my district, Illinois' 16th congressional District. It is home to four nuclear power-generating stations which serves as the most abundant and clean energy source on the planet as well as hundreds of wind turbines, solar power, and geothermal sources.

This strategy has been official as it supports good-paying jobs at home while also ensuring we are good stewards of our environment.

That is why I applaud Poland's decision to not only invest in nuclear power for their country but also to increase their LNG trade with the United States, while supporting intra-EU energy transit.

It is these kinds of decisions that will not only have a long-term benefit on protecting our climate but will also push back on Russia's use of energy as a political weapon.

If Western society wants to tackle climate change, we must hold polluters accountable and invest in long-term solutions to our energy dependence, and I believe that nuclear must be part of that strategy.

Unfortunately, we have seen some of our closest allies take their nuclear reactors offline at a time when we need low-carbon energy sources.

Germany, for example, shut down nearly half of their nuclear power stations overnight. Additionally, they scheduled their remaining reactors to close over a decade before shuttering their coal plants, which still generate over a third of their energy.

Now, we all know—we all know that for Germany to achieve to achieve their green energy goals they decided to build a pipeline directly from Russia into Germany, and we all discussed the reasons as to why this is a terrible idea. I am still amazed that the German government is willing to work with the Kremlin after they interfered in Western elections and invaded our allies in Ukraine and Georgia, shot down a commercial airliner, killing over 200 EU citizens, staged a cyberattack on the German parliament, murdered a Russian opponent in Berlin, and bolstered the Assad regime's genocide in Syria.

I commend Germany for reconsidering the Nord Stream 2 pipeline after Russia's assassination attempt recently. But we cannot rely on them to put the final nail in the coffin. Congress must act and ensure that as long as Vladimir Putin and the Russian Federation continue to threaten the Trans-Atlantic partnership, Nord Stream 2 will never play a role in Europe's green recovery plan.

Thank you again, Mr. Chairman. Sorry for the technical difficulties, and I will yield back the balance of my time.

Mr. KEATING. I thank the ranking member, and I want to recognize the witnesses for 5 minutes. Without objection, your prepared written statements will be made part of the record.

Dean Kyte, you are now recognized for your opening statement.

**STATEMENT OF RACHEL KYTE, CMG, DEAN, THE FLETCHER SCHOOL OF LAW AND DIPLOMACY, TUFTS UNIVERSITY (FORMER SPECIAL REPRESENTATIVE OF THE U.N. SECRETARY-GENERAL AND CEO OF SUSTAINABLE ENERGY FOR ALL, AND FORMER WORLD BANK GROUP VICE PRESIDENT AND SPECIAL ENVOY FOR CLIMATE CHANGE)**

Ms. KYTE. Mr. Chairman, Ranking Minority Member, members of the committee.

Thank you for the opportunity to testify this morning on the critical issue of how we can build back better from the global economic crisis brought about by COVID.

Let me just update the context. More than 90 countries are seeking support from the International Monetary Fund. More than 180 countries have stalled or shrinking growth, according to the World Bank, which now warns that COVID-19 could push countries from recession into depression, and that the U.N. General Assembly going on in New York this week, or virtually around the world, reports on progress toward the sustainable development goals highlight that 100 million people are at risk of being pushed back into poverty, and that by some measures of well being the past 25 weeks have wiped out 25 years of progress.

So the pandemic presents us with an extraordinary challenge, but also an extraordinary once in a generation opportunity.

The IMF currently projects, and we can assume that these will be updated in the next few weeks, that the extent of the growth challenge is that global growth retreats by approximately 5 percent in 2020.

So then how do we organize immediate relief and plan for recovery, and can that recovery be one that puts into the dual economies and the global economy on a more inclusive pathway and a cleaner pathway?

Well, at least more than 200 economists writing earlier this summer think so, and they concluded in work brought together by the University of Oxford that green stimulus measures can have the most significant impact on the economy, cutting emissions.

So they highlighted investing in building efficiency retrofits, education and training to address immediate unemployment from COVID-19, clean energy physical infrastructure, storage in renewable energy assets, for example, clean energy R&D, and natural capital for ecosystem resilience and regeneration.

OECD estimates that more than 30 members countries and key partners have now announced green stimulus elements, mainly in energy and transport, and lessons from the last financial crisis show that if well designed they can achieve the twin objective of providing income and jobs while improving well being and resilience.

The International Energy Agency, working with the IMF, published a plan for sustainable recovery focused on the energy sector. Here they think there can be growth stimulated of 1.1 percent a year and also that we could create 9 million jobs a year and reduce energy-related emissions by 4.5 billion tons.

They were explicit that there was a sweet spot where short-term job creation, growth in the short to medium term, and medium-to long-term emissions can be achieved.

That sweet spot is refurbishing buildings, improving energy efficiency, and improving the electricity sector, in particular, upgrading grids with deep employment opportunities, and renewable energy, essentially focusing recovery efforts there.

Energy efficiency can be important, too, including in manufacturing, food, and textile industries. So there is a sweet spot. The short-, medium-, and long-term objectives can be achieved by a green recovery.

Now, many countries are introducing green elements, some of them very far reaching, using the opportunity for research, for example, Chile, looking at a green hydrogen economy.

But it is the European Union that has attracted the most attention, heading forward with the Green Deal in December last year and then in July this year, as the chairman has already indicated, a package of \$572 billion, a large part of the recovery, to be green, focusing on electric vehicles, renewable energy in agriculture as well as other sectors.

What is interesting is that that then is being joined by the announcement by the EU in the recent days that they will ratchet up their climate ambition, targeting a 55 percent reduction in emissions over 1990 levels by 2030.

So a number of jurisdictions around the world, middling and advanced economies, are using this opportunity to double down. And so I would like to make three points in conclusion.

First, the nature of this crisis means that it is a once in a generation opportunity to pivot and ensure economic future protects people and the planet.

Second, there are sweet spots of actions spurring immediate job growth, boosting incomes, and achieving emissions.

And then third, the private sector investors are increasingly moving to zero net emissions trajectories themselves and demanding stronger government signaling so that they can go further faster.

Government action is essential to ensure that we do not leave anyone behind. That will be important for developing countries as well. The virus has shown the limits of our resilience.

We need to be resilient to the impact of climate change and not investing in that now as part of this extraordinary recovery will be detrimental in the short and long term.

Thank you.

[The prepared statement of Ms. Kyte follows:]

MR CHAIRMAN, RANKING MINORITY MEMBER AND MEMBERS OF THE COMMITTEE

THANK YOU FOR THE OPPORTUNITY TO TESTIFY THIS MORNING ON THE CRITICAL ISSUE OF HOW WE CAN BUILD BACK BETTER FROM THE GLOBAL ECONOMIC CRISIS BROUGHT ABOUT BY THE COVID19 PANDEMIC

FOR CONTEXT. MORE THAN 90 COUNTRIES ARE SEEKING SUPPORT FROM THE INTERNATIONAL MONETARY FUND. MORE THAN 180 COUNTRIES HAVE STALLED OR SHRINKING GROWTH ACCORDING TO THE WORLD BANK , WHICH WARNS THAT COVID-19 IS PUSHING COUNTRIES FROM RECESSION TO DEPRESSION. AND, AT THE UN GENERAL ASSEMBLY THIS MONTH, REPORTS ON PROGRESS TOWARDS THE SUSTAINABLE DEVELOPMENT GOALS HIGHLIGHT THAT 100MN PEOPLE ARE AT RISK OF FALLING BACK INTO POVERTY AND THAT BY SOME MEASURES OF WELLBEING, THE PAST 25 WEEKS HAVE WIPED OUT 25 YEARS OF PROGRESS. THE PANDEMIC HAS PRESENTED US WITH AN EXTRAORDINARY CHALLENGE, BUT ALSO AN EXTRAORDINARY OPPORTUNITY.

THE NATURE OF THE DISLOCATION OF HEALTH, ENERGY, AND FOOD SYSTEMS AND THE DEPTH AND BREADTH OF THE ECONOMIC IMPACTS PRESENT US WITH A MOMENT OF POTENTIAL RESET.

**THE IMF CURRENTLY PROJECTS, AND WE CAN ASSUME THAT UPDATES IN THE COMING WEEKS WILL UNDERLINE THE EXTENT OF THE CHALLENGE, THAT GLOBAL GROWTH WILL RETREAT BY -4.9% IN 2020.**

**HOW THEN TO ORGANIZE IMMEDIATE RELIEF AND PLAN FOR RECOVERY? AND CAN THAT RECOVERY BE ONE THAT PUTS INDIVIDUAL ECONOMIES AND THE GLOBAL ECONOMY ON A BETTER PATH – MORE INCLUSIVE AND CLEANER.**

**A GROUP OF MORE THAN 200 ECONOMISTS THINK SO AND CONCLUDED THAT GREEN STIMULUS MEASURES COULD HAVE THE MOST SIGNIFICANT IMPACT ON THE ECONOMY AND CUT EMISSIONS. THEY HIGHLIGHTED INVESTING IN BUILDING EFFICIENCY RETROFITS, EDUCATION, AND TRAINING TO ADDRESS IMMEDIATE UNEMPLOYMENT FROM COVID-19, CLEAN ENERGY PHYSICAL INFRASTRUCTURE (SUCH AS STORAGE AND RENEWABLE ENERGY ASSETS), CLEAN ENERGY R&D, AND NATURAL CAPITAL FOR ECOSYSTEM RESILIENCE AND REGENERATION.**

THE OECD ESTIMATES THAT MORE THAN 30 MEMBER COUNTRIES AND KEY PARTNERS HAVE ANNOUNCED GREEN STIMULUS ELEMENTS, MAINLY IN ENERGY AND TRANSPORT PROGRAMS.

LESSONS LEARNED FROM THE FINANCIAL CRISIS OF 2008 SHOWED THAT WELL DESIGNED GREEN STIMULUS COULD ACHIEVE THESE OBJECTIVES – PROVIDING INCOME AND JOBS WHILE IMPROVING WELLBEING AND RESILIENCE.

THE INTERNATIONAL ENERGY AGENCY (IEA) AND THE INTERNATIONAL MONETARY FUND (IMF) PUBLISHED A PLAN FOR A SUSTAINABLE RECOVERY FOCUSED ON THE ENERGY SECTOR. THEIR PLAN INDICATED THAT TARGETED POLICIES AND INVESTMENTS BOOST GLOBAL ECONOMIC GROWTH BY AN AVERAGE OF 1.1% A YEAR THEY ALSO CONCLUDED THAT THE PLAN WOULD ALSO SAVE OR CREATE AROUND 9 MILLION JOBS A YEAR AND REDUCE ENERGY-RELATED EMISSIONS BY 4.5 BILLION TONNES GLOBALLY.

THE TWO ORGANIZATIONS WERE EXPLICIT THAT THERE IS A SWEET SPOT WHERE SHORT TERM JOB CREATION, GROWTH IN THE SHORT AND MEDIUM-TERM, AND MEDIUM AND LONG-TERM EMISSIONS REDUCTION CAN BE ACHIEVED SIMULTANEOUSLY. THE SWEET SPOT IS REFURBISHING BUILDINGS TO IMPROVE ENERGY EFFICIENCY. NEXT, EMPLOYMENT IN THE ELECTRICITY SECTOR, PARTICULARLY IN GRID UPGRADE AND RENEWABLE ENERGY, WOULD BE AN ESSENTIAL FOCUS OF RECOVERY EFFORTS. ENERGY-EFFICIENT PARTS OF THE MANUFACTURING, FOOD, AND TEXTILE INDUSTRIES WOULD ALSO BENEFIT FROM INCREASED EMPLOYMENT, ALONG WITH LOW-CARBON TRANSPORT INFRASTRUCTURE AND VEHICLES.

SOME COUNTRIES GREEN RECOVERY CAN BE SEEN IN THEIR REVISED AND UPDATED NATIONALLY DETERMINED CONTRIBUTIONS TO THE PARIS AGREEMENT ON CLIMATE CHANGE, DUE BY THE END OF THIS YEAR, AS IS THE CASE IN CHILE, FOR EXAMPLE. KOREA ANNOUNCED A GREEN DEAL IN JULY, VOWING TO CREATE 659,000 NEW JOBS, AND FOR EXAMPLE, INVESTING \$61BN IN RENEWABLE ENERGY OVER FIVE YEARS. THERE ARE SIGNIFICANT COMMITMENTS TO RENEWABLE ENERGY IN SPAIN, AND THE UK INCLUDED LAND-BASED RESTORATION COMMITMENTS AND ENERGY EFFICIENCY IN EARLY RELIEF PACKAGES.

HOWEVER, THE MOST NOTABLE GREEN RECOVERY PLANS HAVE COME FROM THE EUROPEAN UNION.

IN DECEMBER 2019, THE EUROPEAN COMMISSION RELEASED ITS OVERALL PLAN FOR THE 'EUROPEAN GREEN DEAL,' A MULTI-YEAR PROJECT TO BECOME THE FIRST CLIMATE-NEUTRAL CONTINENT BY 2050. WITH SUSTAINABILITY AT THE HEART OF EUROPE'S PLAN FOR ECONOMIC RECOVERY BEFORE COVID-19, IN JULY 2020, EUROPEAN GOVERNMENTS APPROVED \$572 BILLION INTO ELECTRIC VEHICLES, RENEWABLE ENERGY, AND AGRICULTURE, AMONG OTHER SECTORS, AS PART OF A \$2 TRILLION RECOVERY PACKAGE. ALMOST A THIRD

OF COVID-19 RECOVERY IS EARMARKED FOR CLIMATE ACTION, WHICH GIVES EU MEMBER STATES THE OPPORTUNITY TO DEVELOP CLEAN ENERGY RESOURCES, ACCELERATE THE TRANSITION TO EMISSIONS-FREE VEHICLES, INVEST IN BUILDING TECHNOLOGIES, AND PROMOTE ENERGY EFFICIENCY. AS PART OF THIS MOVE, THE EUROPEAN INVESTMENT BANK BECAME EUROPE'S CLIMATE BANK.

THIS ALSO DOVETAILS WITH THE ANNOUNCEMENT MADE ON SEPTEMBER 16, 2020 TO RATCHET UP THE EU'S CLIMATE AMBITION BY TARGETING A 55% REDUCTION IN EMISSIONS OVER 1990 LEVELS BY 2030.

A NUMBER OF JURISDICTIONS ARE ALSO USING THIS TIME OF CRISIS TO SEND STRONG SIGNALS ABOUT NEW TECHNOLOGIES AND APPROACHES FOR EXAMPLE IS INTEGRATING COMMITMENTS TO GREEN HYDROGEN IN RECOVERY PACKAGES.

I OFFER THREE POINTS IN CONCLUSION.

FIRST, THE NATURE OF THE CRISIS MEANS THAT IT IS A ONCE IN A GENERATION OPPORTUNITY TO PIVOT AND ENSURE ECONOMIC FUTURE PROTECTS PEOPLE AND THE PLANET.

SECOND, **THERE IS A SWEET SPOT** OF ACTIONS TO SPUR IMMEDIATE JOB GROWTH, BOOST INCOMES AND ACHIEVE EMISSIONS REDCUCTION AND BUILD RESILIENCE. THERE IS VIOLENT AGREEMENT ACROSS INTERNAITONAL ECONOMIC AND FINANCIAL INSITUIONS THAT THIS IS ACHIEVABLE AS WELL AS DESIRABLE. A GROWING NUMBER OF COUNTRIES ARE INTRODUCING ELEMENTS, AND THE EU HAS SET AN AGGRESSIVE GOAL FOR ITSELF. YESTERDAY THE CHINESE PREMIER ANNOUNCED CHINA'S INTENTION TO NET ZERO BY 2060 AND TO PEAK EMISSIONS BY 2030. 2/3 OF THE WORLD'S LEADING EMITTERS ARE NOW COMMITTED TO GREATER AMBITION

THIRD, THE PRIVATE SECTOR AND INVESTORS ARE INCREASINGLY MOVING TO ZERO NET EMISSIONS TRAJECTORIES AND WITH STRONG GOVERNMENT SIGNALLING CAN GO FURTHER, FASTER. GOVERNMENT ACTION WILL BE NEEDED TO PLACE MORE AMBITIOUS BETS ON THE TECHNOLOGIES OF THE FUTURE SUCH AS GREEN HYDROGEN AND THESE RESETS ARE ALSO BEGINNING TO ENTER INTO RECOVERY PLANS.

GOVERNMENT ACTION IS ESSENTIAL TO ENSURE THAT COMMUNITIES ARE NOT LEFT BEHIND AS IS THE CASE IN ALL TRANSITIONS. THIE VIRUS HAS SHOWN THE LIMITS OF OUR RESILIENCE.

WE NEED TO BE RESILIENT TO THE IMPACTS OF CLIMATE CHANGE – TO NOT INVEST IN THAT NOW AS PART OF RECOVERY WOULD BE DETRIMENTAL IN THE SHORT AND LONG RUN.

Mr. KEATING. Well, thank you, Dean Kyte.  
Now I will call upon Mr. Morton for your opening statement.

**STATEMENT OF JOHN E. MORTON, PARTNER, POLLINATION,  
SENIOR FELLOW, ATLANTIC COUNCIL (FORMER WHITE  
HOUSE SENIOR DIRECTOR FOR ENERGY AND CLIMATE  
CHANGE AT THE NATIONAL SECURITY COUNCIL)**

Mr. MORTON. Mr. Chairman, Ranking Member Kinzinger, and members of the committee, it is a real pleasure to testify before you here today.

My name is John Morton. I am a partner at Pollination, a global advisory and investment firm and a senior fellow at the Atlantic Council.

The transition to a global low-carbon economy represents the most predictable and consequential economic transformation in human history.

Over the coming decades tens of millions of jobs and trillions of dollars of wealth will be created as we transition to a cleaner, more efficient, and more resilient economy.

The question is not whether this transition will occur but, rather, how fast, who will lead, and who will be left behind. These are questions of tremendous economic consequence for corporations, for industries, and for nations.

The COVID crisis, as has been said represents an opportunity to align public investment with this ongoing global transitioning, turbo charging the technologies and industries of today and tomorrow.

Carbon is a dangerous pollutant quickly warming our planet and it is emitted at virtually zero cost. In economic terms, that makes carbon the ultimate unpriced externality. But that is beginning to change, and fairly rapidly.

The World Bank reports that there are now more than 60 carbon pricing initiatives at the national or subnational level in place or under development.

Together, jurisdictions covered under these programs account for nearly one quarter of global GHG emissions. In short, carbon is fast becoming a financial liability. Financial markets know this. In January, BlackRock CEO Larry Fink wrote, quote, "We are on the edge of a fundamental reshaping of finance. Investors are recognizing that climate risk is investment risk."

The Commodities Futures Trading Commission concurred 2 weeks ago, stating that, quote, "Climate change poses a major risk to the stability of the U.S. financial system and to its ability to sustain the American economy."

Investments today and more climate resilient solutions are prudent not only to minimize future costs but because they will generate outsized returns.

Recent analysis from the International Renewable Energy Agency shows that investments that expedite moving to a low-carbon economy would increase global GDP by nearly \$100 trillion by 2050.

As has been said, countries around the world recognize this and are responding accordingly in their recovery plans. France has ear-



marked more than 30 percent of its most recent recovery package for climate action.

South Korea has prepared an ambitious Green New Deal with a 5-year focus on clean energy, electric and hydrogen vehicles, and energy efficiency.

But the best example of leadership can be found in Europe where the European Commission has announced a nearly \$900 billion next-generation EU program with nearly 40 percent of these funds to be allocated directly to the objectives of the European Green New Deal.

Highlights include increasing emissions reductions targets, notably, as Dean Kyte mentioned, a goal of becoming the first climate neutral continent by 2050 and, notably, developing a WTO-compatible carbon border adjustment mechanism.

Let us pause just for a moment on that last point. The moment is not too far off where carbon-intensive products will be explicitly taxed or tariffed in order to enter the European Union.

Just because we may choose not to prioritize carbon reductions does not mean that others will not, and increasingly in ways that will be painful for our economy.

So what should the U.S. do? We must use this moment of crisis to propel the U.S. back into an economic leadership position by supporting the jobs and industries of the future. And when the climate challenge is looked at through the lens of future jobs and growth, the following investment priorities become compelling economic opportunities.

Continued rapid deployment of clean and renewable energy, electrification of the transportation sector and build-out of a national charging infrastructure, development of next-generation energy storage solutions and a domestic clean hydrogen industry, improvements in building in energy efficiency, and importantly, investments in nature and nature-based solutions including landscape restoration, regenerative agriculture, and sustainable forestry.

Wayne Gretzky, the NHL hockey great, once said that you must, quote, “skate to where the puck is going to be, not where it has been,” and in the case of the transition to a global low-carbon economy, the puck’s direction of travel could not be clearer, and there are many countries now racing to intercept its trajectory.

The U.S. should move quickly and deliberatively. Just as the U.S. led the global economy in the 20th century, let us use this crisis to ensure that we lead the industries of the 21st century as well.

Thank you, and I look forward to any questions you may have.  
[The prepared statement of Mr. Morton follows:]

**HOUSE FOREIGN AFFAIRS COMMITTEE  
SUBCOMMITTEE ON EUROPE, EURASIA, ENERGY, AND THE ENVIRONMENT  
GREEN RECOVERY PLANS FOR THE COVID-19 CRISIS  
SEPTEMBER 23, 2020  
WRITTEN TESTIMONY  
JOHN E. MORTON  
PARTNER, POLLINATION; SENIOR FELLOW, ATLANTIC COUNCIL**

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Mr. Chairman, Ranking Member Kinzinger, Members of the Committee.

Thank you for the opportunity to testify today.

My name is John Morton. I am a Partner at Pollination, a global advisory and investment firm, and a senior fellow at the Atlantic Council.

The transition to a global low carbon economy represents the most predictable and consequential economic transformation in human history. Over the coming decades, tens of millions of jobs and trillions of dollars of wealth will be created as we transition to a cleaner, more efficient, and more resilient economy.

The question is not whether this transition will occur, but rather how fast, who will lead, and who will be left behind. These are questions of tremendous economic consequence. For corporations. For industries. And for nations.

The COVID crisis represents a not-to-be-missed opportunity to align significant amounts of public investment with this ongoing global transition, turbo-charging the growth of technologies in the industries of today and tomorrow.

Carbon is a dangerous pollutant, emitted at virtually zero cost, that is quickly warming our planet. In the world of economics, that makes carbon the ultimate unpriced externality.

But that is beginning to change, and fairly rapidly. The World Bank reports that there are now more than 60 carbon pricing initiatives, at the national or sub-national level, in place or under development. Together, jurisdictions covered under these programs account for nearly one quarter of global GHG emissions. In short, carbon is fast becoming a financial liability.

Financial markets know this. In January, BlackRock CEO Larry Fink wrote, “we are on the edge of a fundamental reshaping of finance... investors are... recognizing that climate risk is investment risk.” And “In the near future – and sooner than most anticipate – there will be a significant reallocation of capital.”

The Commodity Futures Trading Commission (CFTC) concurred two weeks ago, stating that: “Climate change poses a major risk to the stability of the U.S. financial system and to its ability to sustain the American economy,” and, financial support will be required “not only to efficiently

manage climate risk but also to facilitate the flow of capital to help accelerate the net-zero transition...”

Investments today in more climate-resilient infrastructure and industries are prudent not only to minimize future costs, but because they will generate outsized returns. Recent analysis from the International Renewable Energy Agency (IRENA) shows that investments that expedite moving to a low-carbon economy would increase global GDP by nearly \$100 trillion by 2050.

Recognizing the risks and opportunities that must be addressed, countries around the world are responding in their recovery plans:

- France has earmarked more than 30% of its most recent recovery package for climate action;
- South Korea has prepared an ambitious “Green New Deal” with a five-year focus on clean energy, electric and hydrogen vehicles, and energy efficiency;
- Canada has required that large businesses applying for Government recovery loans must provide annual public climate disclosure reports.

The best example of leadership can be found in Europe where the European Commission has announced a nearly \$900 billion Next Generation EU program with nearly 40% of these funds to be allocated directly to the objectives of the European Green New Deal. Highlights include:

- Increasing the EU’s 2030 emissions reduction target from 40% to 55% over 1990 levels;
- A goal of becoming the first climate-neutral continent by 2050;
- Prioritizing investment toward sectors including; hydrogen, building renovations and electric charging points for vehicles; and, notably,
- Developing a WTO-compatible Carbon Border Adjustment Mechanism.

Let’s pause on that last point. The moment isn’t too far off where carbon intensive products will be explicitly taxed or tariffed in order to enter the European Union. Just because we may choose to not prioritize carbon reductions does not mean that others won’t – and increasingly in ways that will be painful for our economy.

What should the US do? We must use this moment of crisis to propel the US back into an economic leadership position by supporting the jobs and industries of the future.

When the climate challenge is looked at through the lens of future jobs and growth, the following investment priorities become compelling economic opportunities:

- Continued rapid deployment of clean and renewable energy;
- Electrification of the transportation sector and build-out of a national charging infrastructure;

- Development of next generation energy storage solutions, and a domestic clean hydrogen industry;
- Improvements in building and energy efficiency;
- Innovation to enable dramatic decreases in industrial emissions in key sectors including cement, steel and chemicals; and, importantly,
- Investments in nature and nature-based solutions including landscape restoration, regenerative agriculture, and sustainable forestry.

Wayne Gretzky, the NHL hockey great, once said that you must “skate to where the puck is going to be, not where it has been.” In the case of the transition to a global low carbon economy, the puck’s direction of travel could not be clearer. And there are now many countries racing to intercept its trajectory.

The United States should move quickly and deliberately. Just as the US led the global economy in the 20<sup>th</sup> century, let’s use this crisis to ensure that we lead the industries of the 21<sup>st</sup> century as well.

Thank you and I look forward to any questions you may have.

Mr. KEATING. Thank you, Mr. Morton, for your statements and your perspective.

Now I will turn to Dr. Nahm for your opening statement.

**STATEMENT OF DR. JONAS NAHM, ASSISTANT PROFESSOR OF ENERGY, RESOURCES, AND ENVIRONMENT, SCHOOL OF ADVANCED INTERNATIONAL STUDIES, JOHNS HOPKINS UNIVERSITY**

Dr. NAHM. Chairman Keating, Ranking Member Kinzinger, members of the committee, thank you so much for this opportunity to discuss possibilities for a green recovery, particularly as they relate to clean energy industries and U.S. competitiveness.

On a personal note, I became a citizen exactly 2 weeks ago today, so I am particularly honored to serve as a witness here so soon after taking the oath.

The economic recession caused by efforts to contain the global pandemic has, in the short term, led to a drop of global greenhouse gas emissions.

But as I lay out in more detail in my written statement, three factors caution against optimism that the recession will yield a green recovery.

First, these emissions reductions during the current recession have been temporary. They are unlikely to have a lasting impact on global efforts to reduce greenhouse gas emissions by themselves.

Second, G-20 economies have thus far spent far less on green recovery programs than in the aftermath of the 2009 recession.

Since March, my colleagues and I at Johns Hopkins University have been tracking climate-related spending in stimulus packages in G-20 economies. And our findings are preliminary and the research is ongoing, but as early results suggest, only 7 percent of fiscal stimulus so far targets a green recovery.

Roughly, the same amount of money has been spent supporting fossil fuel industries. For comparison in 2009, roughly, 15 percent of stimulus spending in G-20 economies focused on green recovery programs.

That said, a number of European economies as well as South Korea have considerably outspent the United States on measures to boost competitiveness in their clean energy industries.

Governments have used stimulus packages to accelerate investments in infrastructure, support clean energy industries, fund research and development efforts. Particular focus on Europe has been renewable energy, electrification of transportation, and investments in research on hydrogen technology.

Green recovery funds have also—green recovery plans have also funded incentives including incentives for electric vehicles, tax credits for building retrofits, rebates for energy efficiency, and so on, and some European governments have begun to make financial support for the private sector conditional on future emissions reductions and changes to business practices.

Nonetheless, many economies have also compensated fossil fuel sectors at the same time, again, offering little indication that this is a comprehensive shift toward decarbonization.

A third reason for pessimism about global efforts to address the climate crisis relates to China. The pandemic has further strained

economic and political relationships with China, and this is detrimental to efforts to mitigate climate change.

China produces 60 percent of the world's solar panels, is the world's largest producer of electric cars. It makes over one-third of the global wind turbines. It is also home to over two-thirds of the wealth production capacity for lithium ion batteries that we need for electric cars and for storage.

In part because of China's massive investments in manufacturing, clean energy technologies have seen rapid cost declines over the past decade.

If green economic recovery is an opportunity to invest in domestic clean energy industries and to reduce reliance on China in the long term, but in the limited timeframe to sufficiently reduce emissions, a green recovery will also need to rely on clean energy technologies that are currently manufactured in China.

The United States is uniquely equipped to be a global frontier of clean energy innovation. Historically, we have been the largest investor in clean energy research and development.

We continue to lead in many areas critical for fixing the climate crisis. This includes next-generation solar technologies, advanced battery chemistries, new building materials, smart grid technologies, software to manage complex energy systems, and so on.

The United States should use this opportunity to rapidly accelerate its research and development investments to defend this technological lead.

In the long term, the current recession also offers an opportunity to improve conditions for segments of clean energy supply chains that are currently not well supported domestically.

This might mean support for domestic manufacturing, for instance, through the creation of financing institutions for manufacturing to renewed investments in vocational training and technical colleges.

In the short term, however, we should not lose sight of the immediate economic benefits from green recovery and that is true even if a share of these technologies is for now manufactured abroad.

Investments in clean energy infrastructure, upgrades to the grid, sustainable transit solutions, renewable energy installation, building retrofits, they all will create local jobs in construction and installation and maintenance and in related service industries.

Green recovery spending would support the creation of such jobs in the near term and would improve U.S. competitiveness in the long term, and it would also rapidly deploy capital in the economy to aid the recovery now.

Thank you for your time.

[The prepared statement of Dr. Nahm follows:]

**A Green Economic Recovery: Global Trends and Lessons for the United States**

**Jonas Nahm**  
**Assistant Professor for Energy, Resources, and Environment**  
**School of Advanced International Studies**  
**Johns Hopkins University**

**Statement before the House Foreign Affairs Committee**  
**Subcommittee on Europe, Eurasia, Energy, and the Environment**  
**Hearing on Green Recovery Plans for the COVID-19 Crisis**

The economic recession caused by efforts to contain the global Covid-19 pandemic has, in the short-term, led to a drop of global greenhouse gas emissions. Yet three factors caution against optimism that the economic recession could trigger substantial shifts toward long-term decarbonization. First, emissions reductions during the current economic recession have been small and are unlikely to have a lasting impact on efforts to reduce greenhouse gas emissions. Past recessions have been followed by rapid increases in emissions that have offset much of the downturn and the 2020 recession has begun to follow a similar pattern. Second, while economic stimulus spending in the recovery offers an opportunity to invest in long-term climate policies that also create jobs and deploy capital in the economy, G20 economies have thus far spent far less on programs with environmental co-benefits than in the aftermath of the 2009 recession. Third, the Covid-19 pandemic has further strained economic and political relationships with China, a key producer of technologies urgently needed to reduce greenhouse gas emissions in the global economy. This is detrimental to short-term efforts to address the global climate crisis.

The United States is uniquely equipped to be at the global frontier of clean energy technology innovation. America's clean energy industries, however, have suffered losses as a result of trade barriers to Chinese technologies. Such trade barriers, which have not brought manufacturing back to the United States, also threaten to damage the kind of innovation in which the United States should take a leading role. The United States should use the economic recovery as an opportunity to improve domestic competitiveness, including in segments of clean energy supply chains that are currently not well supported in the U.S. economy. The creation of domestic institutions to finance clean energy manufacturing and demonstration projects, renewed investments in vocational training and technical colleges, and a stable regulatory framework to support domestic markets for clean energy technologies would improve U.S. competitiveness in clean energy sectors. Rapid acceleration of investments in research and development are required to defend America's lead in energy technology innovation.

### **Economic Recessions and Climate Change**

The economic recession caused by efforts to contain the global COVID-19 pandemic has, at least in the short-term, led to a considerable drop of global greenhouse gas emissions. In China, greenhouse gas emissions fell by more than 25 percent in January, as satellite data show reduced activity in coal power plants, manufacturing operations, and the transportation sector.<sup>1</sup> By April, global greenhouse gas emissions had decreased by 17 percent year-over-year.<sup>2</sup> Yet not only are such short-term emissions reductions tied to unsustainable economic shutdowns, past recessions have been followed by rapid increases in carbon emissions that have offset much of the reductions of the downturn. After the 2008/2009 global financial crisis, for instance, greenhouse gas emissions from fossil-fuel combustion and the global cement industry increased by nearly 6 percent to record levels in 2010. Similar rebounds in emissions occurred after the 1970s oil crises, the U.S. savings and loan crisis in the late 1980s, the collapse of the Soviet Union in the 1980s, and following the Asian Financial Crisis in the late 1990s. In each case, emissions reductions caused by the economic recession were offset by rapidly increasing emissions in the immediate aftermath, further accelerating the accumulation of greenhouse gases in the atmosphere.<sup>3</sup> Thus far, the 2020 recession has shown little indication of long-term structural changes in emissions patterns.

Two facts in particular are cause for concern. First, overall emissions reductions as a result of economic lockdowns have been negligible, even if substantial in the short-term. The economic lockdowns enacted during the pandemic will likely yield the largest ever annual fall in greenhouse gas emissions. In the United States, for instance, demand for jet fuel and gasoline temporarily dropped by approximately 50 percent and 30 percent, respectively.<sup>4</sup> Nonetheless, overall emissions for 2020 are estimated to only yield a five percent emissions reductions year-over-year. Since climate change is driven by cumulative concentrations of greenhouse gases in the atmosphere, short-term emissions reductions have little impact on long-term climate patterns unless they are followed by structural changes in the economy. A five percent reduction of global emissions in 2020 would put the world on track to reach greenhouse gas concentrations of 414.1 parts per million in the atmosphere at the end of this year, compared to projected concentrations of 414.2 parts per million in the absence of the current crisis.<sup>5</sup>

Second, confirming the precedents of past economic crises, emissions have quickly begun to rebound wherever economies have indeed reopened. In China, greenhouse gas emissions surpassed 2019 levels by May as restrictions on the economy were lifted.<sup>6</sup> In June, global emissions were a mere 5 percent below 2019 levels. The transportation sector saw the fastest rate of emissions increases between April and June, but industrial activity and growing power demand also approached pre-pandemic levels.<sup>7</sup> The economic recession itself has caused only short-term emissions reductions. They will likely be followed by an increase in global emissions that will offset temporary declines as the global economy recovers. The recession has not relieved pressure to urgently decarbonize the global economy if the worst consequences of climate change are to be avoided.

### **Global Lessons for a Green Recovery**

Government stimulus spending offers an opportunity for decarbonization through long-term investments in infrastructure, transportation electrification, building efficiency, and clean energy technologies that can reduce emissions and help sustainably shift the global economy away from fossil fuels. During the 2009 recession, governments in G20 economies responded by including climate objectives in their stimulus packages. Fifteen percent of G20 stimulus spending focused on reducing emissions reductions while supporting economic recovery. In the United States, approximately 12 percent of stimulus funds pursued such objectives.<sup>8</sup> It is important to note that these figures only



include large stimulus packages. As a percentage of overall recovery spending in 2009, numbers are likely significantly smaller.

Ongoing research conducted at Johns Hopkins University with support from the Johns Hopkins Alliance for a Healthier World and the Initiative for Sustainable Energy Policy suggests that green recovery efforts in G20 economies fall short of those undertaken in 2009.<sup>9</sup> Focusing on fiscal stimulus policies since the beginning of the Covid-19 pandemic (excluding loans, loan guarantees, and monetary policy), our preliminary data suggest that seven percent of stimulus spending through August 2020 targets a green recovery. According to our analysis, approximately the same amount of global stimulus funds aim to support fossil fuel sectors, suggesting that G20 economies have not yet used the recession to shift the global economy on a more sustainable path. Research conducted by other organizations supports our preliminary findings.<sup>10</sup>

While our findings are preliminary, they suggest that the majority of green recovery efforts are currently taking place in Europe. The European Union has announced plans to use its stimulus efforts to pursue the dual goal of meeting stringent climate targets and increasing competitiveness in critical industries of the future. France, Germany, and the United Kingdom have also accelerated efforts to combine economic and environmental objectives in the recovery through support for renewable energy, hydrogen, and electric vehicles, among others. In Asia, South Korea has included a “Green New Deal” in its recovery plans, which has both set more ambitious targets for decarbonization and increased funding for clean energy sectors and vehicle electrification. China, meanwhile, has accelerated a long-planned “New Infrastructure Initiative,” with the goal of spending USD 2.5 trillion on seven major industries, most notably 5G, electric vehicles, and ultra-high voltage transmission. To date, stimulus bills in South Korea contain 30 percent green stimulus spending, followed by China and the European Union with 18 percent. Efforts to fund a green recovery in Germany and the United Kingdom amount to 9 and 8 percent of stimulus spending, respectively. At the same time, we estimate that Russia and India are on track to spend more than 80 percent of their stimulus funds on fossil fuel sectors. China’s support for activities likely to increase carbon emissions currently exceeds 40 percent of stimulus spending.

Green recovery efforts, where they exist, have fallen into three distinct categories. First, governments have used stimulus packages to accelerate investments in infrastructure, support clean energy industries, fund research and development, and set up green financing institutions. Priorities under such direct spending initiatives have varied. For instance, the European Union, Germany, France, and South Korea have announced plans to invest in research and development of hydrogen technologies. Producing hydrogen from renewable sources is part of long-term plans to reduce emissions in heavy industrial sectors. In the short-term, governments have focused on the expansion of electric vehicle charging networks, support for the establishment of a European battery industry, and upgrades to electric grids to accommodate the growing share of renewable energy. Common to such efforts has been the goal to improve national competitiveness in key clean energy industries and improve national capabilities in the development, production, and deployment of clean energy technologies.

Second, green recovery plans have funded incentives to accelerate a clean energy transition. Such incentives include subsidies for electric vehicles as well as rebates and tax credits for building retrofits and energy efficiency. Many such programs are similar to measures adopted in the United States in the American Recovery and Reinvestment Act in 2009. Germany, for instance, has raised its incentives for electric vehicle purchases to EUR 9,000 (USD 10,000), while also reforming vehicle taxes to reward energy efficient cars. In the United Kingdom, homeowners will be reimbursed two-thirds of energy efficient building retrofits and low-income households will be reimbursed fully.

Third, governments have made financial support for private sector firms conditional on emissions reductions. In return for a EUR 7 billion (USD 8.3 billion) bailout, Air France will have to reduce domestic flights by 40 percent to encourage use of France's high-speed rail system. The Dutch government has attached similar conditions—including a requirement to reduce per-passenger emissions by 30 percent—to support for KLM, the other half of the Air France-KLM group. While details about the enforcement of such conditions remain to be resolved, they suggest experimentation with new types of climate conditionalities that could more generally make state support for the private sector dependent on environmental goals.<sup>11</sup>

Although there is the possibility that stimulus packages to the current date have primarily focused on economic rescue during the lockdown period and will focus on a green recovery in subsequent rounds, two concerning trends are notable in our data. First, the vast majority of spending has been on climate-neutral activities unconcerned with forging structural change in national economies toward a more sustainable path. Second, many economies that have invested substantial sums in climate-related recovery packages have also compensated fossil fuel sectors, again offering little indication that the current recession is yielding a global shift toward decarbonization. Efforts to combine climate and economic objectives in the recovery fall short of the 2009 financial crisis, even though global emissions have substantially increased since then.<sup>12</sup>

### **Climate Change and China**

The United States and China jointly account for 40 percent of global greenhouse gas emissions.<sup>13</sup> This fact alone puts these two nations at the center of any meaningful attempt to curb emissions to the levels required to prevent catastrophic climate change. Yet the U.S.-China relationship is deteriorating at an unprecedented pace. Well before the Covid-19 pandemic, voices across the political spectrum in Washington began advocating for greater economic separation from China. Although opinions differed on what exactly such measures should entail, a bipartisan consensus emerged that China was refusing to align with Western political norms and economic practices and warranted a firm U.S. response. The pandemic accelerated such tendencies, not only highlighting the vulnerability of the world's supply chains to external shocks but also strengthening calls for national self-sufficiency in China, the United States, and elsewhere.<sup>14</sup>

Continuing down the path toward political antagonism and economic decoupling would make it extremely difficult, if not impossible, to solve the climate crisis. U.S. collaboration with China is fundamental to any effort to avoid the worst consequences of climate change. That is because of the combination of two realities: the existing strength of China in producing the green technologies required for decarbonization, and the limited time remaining to reduce global carbon emissions. In the short-term, clean energy technologies made in China will have to be a central element of climate strategies in the United States and elsewhere.

China is a world leader in the mass production of the technologies most needed to address the climate crisis by decarbonizing the electricity and transportation sectors. These low-carbon energy technologies include wind turbines, solar panels, electric vehicles, and batteries, which are crucial for electric cars and on-grid storage. Since joining the World Trade Organization in 2001, China has massively increased its global share of solar photovoltaic production, leaping from less than 1 percent to more than 60 percent of the world's solar panels. China is now the world's largest producer of electric cars. It makes over one-third of global wind turbines, and a much larger share of components for wind turbine installations around the world. China is now home to over two-thirds of the world's production capacity for lithium ion batteries needed for electric vehicles and storage.<sup>15</sup>

In large part because of China's unprecedented investment in manufacturing in green technology sectors, the cost of clean energy technologies has fallen sharply. Since 2009, global prices for wind turbines and solar panels have decreased by 69 percent and 88 percent, respectively, making these technologies competitive with conventional sources of energy in many parts of the world.<sup>16</sup> Wind and solar become especially competitive when they are deployed in conjunction with battery storage, where China's massive investments in new manufacturing capacity have also generated rapid cost declines. The development of these capabilities in manufacturing innovation relied on two features of China's domestic economy that supported investments in both innovation and manufacturing: central government incentives for R&D and local government support for manufacturing. To date, no other economy has been willing and able to devote a similar level of resources in the expansion of manufacturing capacity and manufacturing R&D in clean energy industries.<sup>17</sup>

Meeting the goals of the Paris Climate Agreement will require net-zero emissions by 2050 and substantial reductions before then. In this timeframe, it is unrealistic to expect any other economy will be able to replicate, let alone surpass, China's infrastructure for the production of clean energy technologies. To avoid the worst consequences of climate change, the world needs to cut global emissions by 50 percent by 2030, a feat unimaginable without clean energy technologies that are currently produced in China.<sup>18</sup> For Americans who seek to take bold action to arrest global warming, the most efficient way to do so is to collaborate with Chinese researchers and firms that are successfully mass producing low carbon energy technologies, including in the transportation and power sector which make up more than 50 percent of U.S. emissions. Economic walls between the countries make further production harder and slower for each. U.S. renewable energy startups could benefit from working with Chinese partners to commercialize their technologies instead of competing with Chinese firms that have access to an institutional infrastructure highly supportive of mass production.

The world already possesses many of the technologies needed to begin making significant progress toward decarbonization. Collaboration was central to the development of contemporary renewable energy sectors, including collaboration between U.S. innovators and Chinese producers with skills in rapid scale-up and cost reduction.<sup>19</sup> Recent cost reductions of solar and wind power mean that such progress is becoming ever more affordable. But trade wars and widespread talk of decoupling have begun to undermine the relationships needed to quickly and efficiently bring new technologies to market and deploy them at the scale required. The U.S. solar industry, dependent on imported solar technologies, vehemently opposed trade barriers.<sup>20</sup> Further tariffs would raise prices for Chinese solar panels, increase installation costs, and reduce jobs among U.S. solar installers—the main source of employment in the U.S. solar sector. If pursued further, such decoupling would thwart progress on decarbonization, making it highly unlikely that global warming could be contained to acceptable levels.

A green economic recovery is an opportunity to invest in domestic clean energy industries and reduce reliance on China in the long-term. However, in the limited timeframe remaining to rapidly reduce global emissions, reducing emissions must also entail the use of clean energy technologies that are currently manufactured in China.

#### **Opportunities for the United States**

Historically, the United States has been the largest investor in clean energy research and development and continues to lead in many areas critical for fixing the climate crisis. U.S. companies are at the forefront of developing next-generation technologies that could make decarbonization cheaper and more efficient, including next-generation solar technologies, advanced battery chemistries, new building materials, smart grid technologies, and software to manage complex energy systems.<sup>21</sup> Overall spending on a green recovery among G20 economies currently falls short of green stimulus

spending in the 2009 recession. The lack of green recovery spending in the United States in the current economic recovery is particularly concerning. The United States risks losing its leadership position, particularly as other economies, including the European Union, have made strengths in clean energy sectors a priority. From offshore wind turbines to hydrogen and battery technologies, Europe has combined economic and climate objectives in its recovery plans. China, too, is closing the gap in research and development expenditure, including in clean energy technologies.<sup>22</sup> In both Europe and China, climate policy is taking on an economic imperative, as governments seek to expand market shares for domestic firms in growing markets for clean energy technologies.<sup>23</sup> This is true even as green recovery efforts currently fall short of what is needed to avoid catastrophic climate change.

Addressing grand challenges like climate change will require fundamental advances in technology, where the United States is uniquely equipped to be at the global frontier. In United States, this means continuing to support the core strengths of U.S. firms and universities—the invention of new technologies—through investments in basic and applied research. Particularly on climate-related technologies, the United States should rapidly accelerate its research and development investments to defend its technological lead.<sup>24</sup> The technologies that emerge from these efforts must eventually be scaled and deployed, and for now, working with Chinese manufacturers can accelerate this process. Instead of competing with Chinese firms that have access to an institutional infrastructure supportive of mass production, U.S. renewable energy startups might benefit from working with Chinese partners.<sup>25</sup>

In the long-term, the current recession offers an opportunity to improve conditions for segments of clean energy supply chains that are currently not well-supported domestically. This means investing in domestic manufacturing capabilities as part of a national strategy for technological innovation. The creation of an infrastructure bank that could finance domestic manufacturing projects that the U.S. financial system has been unwilling to fund, renewed investments in vocational training and technical colleges, and a stable regulatory framework to support domestic markets for clean energy technologies are needed to improve national competitiveness in clean energy technology sectors. Even then, it is unlikely that entire value chains for complex energy technologies would lie entirely within national boundaries. European recovery strategies offer instructive lessons on how stimulus spending can improve national competitiveness in clean energy industries, while maintaining open trade relationships with China.

In the short-term, the United States should not lose sight of the substantial economic benefits from investments in clean energy industries, even if a share of these technologies is, for now, manufactured abroad. Investments in clean energy infrastructure, upgrades to the grid, sustainable transit solutions, renewable energy installations—including offshore wind—and energy efficient building retrofits create local jobs in construction, installation and maintenance, and related service industries, regardless of where these products are manufactured. Green recovery spending would support the creation of such jobs in the near-term and rapidly deploy capital in the economy.<sup>26</sup> Even aggressive investments in clean energy sectors through economic stimulus packages will need to be complemented by stable regulatory measures to create domestic markets for clean technologies and reduce greenhouse gas emissions to levels required to avoid the worst consequences of climate change.<sup>27</sup> Within recovery bills, attaching climate conditions to corporate bailouts is one way to shift corporate behavior without incurring additional costs, such as France and the Netherlands are currently attempting in the aviation sector. Combining financial incentives with changes in the tax code, as Germany is doing in the auto sector to accelerate the deployment of electric vehicles, is another way to combine regulatory policies with stimulus spending. Nonetheless, long-term regulatory measures will need to follow green recovery investments to reach global climate goals.

If the economic recession in the aftermath of the Covid-19 pandemic in principle offers an opportunity to shift the global economy on a more sustainable path, there is little evidence that governments are sufficiently doing so. At best, the recession has caused short-term emissions reductions and led to some investment in clean energy industries to stimulate economic recovery. But governments have also bailed out fossil fuel companies and invested in polluting technologies—including coal power—that threaten to lock in greenhouse gas emissions for generations. At worst, the pandemic has fueled a pushback against globalization that is likely to complicate efforts to decarbonize, challenging both diplomatic relations and global supply chains most needed to collectively shift away from fossil fuels.<sup>28</sup> The vast majority of stimulus funds are currently spent on climate-neutral activities. Spending on decarbonization is offset by compensation for fossil fuel industries. Given the limited time remaining to reduce greenhouse gas emissions and avoid the worst consequences of climate change, these patterns signal a missed opportunity to shift the global economy to a more sustainable path.

- <sup>1</sup> Jonathan Watts and Niko Kommenda, "Coronavirus Pandemic Leading to Huge Drop in Air Pollution," *The Guardian* 2020.
- <sup>2</sup> Corinne Le Quéré et al., "Temporary Reduction in Daily Global CO<sub>2</sub> Emissions During the Covid-19 Forced Confinement," *Nature Climate Change* 10, no. 7 (2020).
- <sup>3</sup> Glen P. Peters et al., "Rapid Growth in CO<sub>2</sub> Emissions after the 2008–2009 Global Financial Crisis," *ibid.* 2, no. 1 (2012).
- <sup>4</sup> Kenneth T. Gillingham et al., "The Short-Run and Long-Run Effects of Covid-19 on Energy and the Environment," *Joule* 4, no. 7 (2020).
- <sup>5</sup> The Breakthrough Institute, "Covid-19 Could Result in Much Larger CO<sub>2</sub> Drop in 2020," <https://thebreakthrough.org/issues/energy/covid-co2-drop>.
- <sup>6</sup> Lauri Myllyvirta, "China's CO<sub>2</sub> Emissions Surged Past Pre-Coronavirus Levels in May," <https://www.carbonbrief.org/analysis-chinas-co2-emissions-surged-past-pre-coronavirus-levels-in-may>.
- <sup>7</sup> Le Quéré, C., Jackson, R., Jones, M., Smith, A., Abernethy, S., Andrew, R., De-Gol, A., Shan, Y., Canadell, J., Friedlingstein, P., Creutzig, F., & Peters, G. (2020). *Supplementary data to: Le Quéré et al (2020), Temporary reduction in daily global CO<sub>2</sub> emissions during the COVID-19 forced confinement*
- <sup>8</sup> Nick Robins, Robert Clover, and Charanjit Singh, "A Climate for Recovery: The Colour of Stimulus Goes Green," (London: HSBC Global Research, 2009).
- <sup>9</sup> For this ongoing research, I collaborate with Johannes Urpelainen at Johns Hopkins SAIS and Scot Miller at the Johns Hopkins Whiting School of Engineering. We are supported by an excellent research team: Jacob Brunell, Santiago Cunial, Alex Haag, Daniel Mathew, Zubeyde Osul, and Will Zhao.
- <sup>10</sup> See analysis of IMF data conducted by the Rhodium Group: <https://rhg.com/wp-content/uploads/2020/09/Its-Not-Easy-Being-Green-Stimulus-Spending-in-the-Worlds-Major-Economies.pdf>. The International Institute for Sustainable Development is collecting energy sector recovery policies: <https://www.energypolicytracker.org>
- <sup>11</sup> Jesse Strecker and Jonas Meckling, "Green Bargains: From Crisis Response to Sectoral Transformation," (Berkeley, CA: University of California, (forthcoming)).
- <sup>12</sup> P. Friedlingstein et al., "Global Carbon Budget 2019," *Earth Syst. Sci. Data* 11, no. 4 (2019).
- <sup>13</sup> Union of Concerned Scientists, "Each Country's Share of CO<sub>2</sub> Emissions," <https://www.ucsusa.org/resources/each-country-share-co2-emissions>.
- <sup>14</sup> Henry Farrell and Abraham Newman, "Will the Coronavirus End Globalization as We Know It?," *Foreign Affairs*, no. May/June (2020).
- <sup>15</sup> John Helveston and Jonas Nahm, "China's Key Role in Scaling Low-Carbon Energy Technologies," *Science* 366, no. 6467 (2019).
- <sup>16</sup> Lazard, "Lazard's Levelized Cost of Energy Analysis," Lazard, <https://www.lazard.com/media/450784/lazards-levelized-cost-of-energy-version-120-vfinal.pdf>.
- <sup>17</sup> Joanna I. Lewis, *Green Innovation in China: China's Wind Power Industry and the Global Transition to a Low Carbon Economy* (New York, NY: Columbia University Press, 2013); Jonas Nahm, "Exploiting the Implementation Gap: Policy Divergence and Industrial Upgrading in China's Wind and Solar Sectors," *The China Quarterly* 231 (2017).
- <sup>18</sup> IPCC, "Global Warming of 1.5°C," (Geneva: Intergovernmental Panel on Climate Change, 2018).
- <sup>19</sup> Kelly Sims Gallagher, *No Great Wall: The Global Diffusion of Clean Energy Technologies* (Cambridge MA: MIT Press, 2013).
- <sup>20</sup> Nichola Groom, "U.S. Solar Group Says Trump Tariffs Killing Jobs; White House Says 'Fake News'," Reuters, <https://www.reuters.com/article/uk-usa-solar-tariffs/u-s-solar-industry-to-lose-62000-jobs-due-to-trump-tariffs-study-idUSKBN1Y71V8>.
- <sup>21</sup> Varun Sivaram et al., *Energizing America: A Roadmap to Launch a National Energy Innovation Mission* (New York, NY: Columbia University SIPA Center on Global Energy Polic, 2020); "The 50 Most Innovative Renewable Energy Companies," <https://www.altenergy.com/article/2016/05/the-50-most-innovative-new-renewable-energy-companies/23565/>.
- <sup>22</sup> Beethika Khan, Carol Robbins, and Abigail Okrent, "The State of Us Science and Engineering 2020," *National Science Foundation*, January 15 (2020).
- <sup>23</sup> Jonas Meckling and Bentley B. Allan, "The Evolution of Ideas in Global Climate Policy," *Nature Climate Change* 10, no. 5 (2020); Jonas Meckling and Jonas Nahm, "The Politics of Technology Bans: Industrial Policy Competition and Green Goals for the Auto Industry," *Energy Policy* 126 (2019).
- <sup>24</sup> Sivaram et al., *Energizing America: A Roadmap to Launch a National Energy Innovation Mission*.

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<sup>25</sup> Jonas Nahm, "Renewable Futures and Industrial Legacies: Wind and Solar Sectors in China, Germany, and the United States," *Business and Politics* 19, no. 1 (2017).

<sup>26</sup> Ryan Hanna, Yangyang Xu, and David G Victor, "After Covid-19, Green Investment Must Deliver Jobs to Get Political Traction," *Nature* 582 (2020).

<sup>27</sup> Noah Kaufman, "The Greenest Stimulus Is the One That Delivers Rapid Economic Recovery " Columbia SIPA Center on Global Energy Policy, <https://energypolicy.columbia.edu/sites/default/files/file-uploads/Green%20stimulus%20commentary,%20final%20design,%206.09.20.pdf>.

<sup>28</sup> Andreas Goldthau and Llewelyn Hughes, "Protect Global Supply Chains for Low-Carbon Technologies," *Nature* 585 (2020).

Mr. KEATING. Thank you, Dr. Nahm.  
The chair now recognizes Dr. Rohac for your opening statement.

**STATEMENT OF DR. DALIBOR ROHAC, RESIDENT SCHOLAR,  
AMERICAN ENTERPRISE INSTITUTE**

Dr. ROHAC. Chairman Keating, Ranking Member Kinzinger, members of the subcommittee, thank you very much indeed for the opportunity to share my views on mostly the geopolitical and energy security implications of the European Union's climate policies, so my view may be somewhat narrower than the other witnesses.

As with many other EU initiatives, I believe there is a mismatch between the significant ambitions of the European Green Deal and the more recent decisions on spending, and the tools and policies that are available to the EU as a bloc to achieve those ambitions.

And I think it makes it all the more important for Europe and for the United States to engage constructively around on energy policy with our European partners, not least because many of these issues have far-reaching geopolitical ramifications.

In the State of the Union Address to the European parliament, Ursula von der Leyen, the president of the European Commission, reiterated the EU's commitment to become the first climate-neutral continent by 2050 and reduce emissions by 55 percent relative to the 1990 levels.

Also, the Commission has vowed to prepare all the legislation needed to meet those targets by the summer of next year. Most importantly, the financial package that was agreed on in the aftermath of the first wave of the COVID pandemic in Europe involves one-third of the resources of over \$1.8 trillion euros to be allocated to climate change policies and green investment tied to emissions reductions.

It sounds like a lot, but on an annualized basis, rescue package and the EU's multiannual financial framework really accounts for less than 2 percent of GDP—that is—the overall budget of the financial package for post-COVID recovery.

Directing around 30 percent of that spending to climate change policies is not exactly news—either it was envisaged last year already.

So there has not been a massive shift in policies, and I think what the European Green Deal leaves out is as important as what it actually includes.

So, most importantly, energy policies are not fully within the control of the European Union. Member States have their own national policies, their own priorities, and the way these are coordinated and reconciled with these ambitious carbon emissions goals delicate political balancing act.

One significant gap that I see in the EU is this—has to do with the R&D, research and development budget, and the forward-looking programs that have been produced under pressure from member States that require spending that involves as little strings attached as possible.—So the R&D funds meant to facilitate the transition to the carbon-neutral economy have been slashed.

Another open question is the role for nuclear energy for the EU. European countries have wildly different views on what role nuclear energy should play in the future.



I think that has geopolitical ramifications as well, given the role of Russia and Russia's nuclear monopolies and the question of whether the nuclear sectors will be really central to the European economies.

Another question is the EU's reliance on Russian gas. The spare capacity built by Russia with its new pipelines enables it to cutoff supplies in Ukraine and Belarus, for example, without endangering the supplies to European Union, and I think that is something that is very much in the U.S. interest—.

I believe that the United States needs to engage. It is in the U.S. interest that the EU make strides to reducing its carbon footprint, and also that energy be not used as a tool by Russia and China to increase its influence in Europe, and I think that involves practical—policies that enable U.S. and EU companies to keep their technological edge, and also friendly pressure on the European partners not be to compromise EU and U.S. strategic interests with projects like Nord Stream.

On that note, I thank you and I look forward to your questions.  
[The prepared statement of Dr. Rohac follows:]



Statement before the House Committee on Foreign Affairs  
Subcommittee on Europe, Eurasia, Energy, and the Environment  
On Green Recovery Plans for the COVID-19 Crisis

## **How Green Will Europe's Recovery Be?**

**Practical and geopolitical considerations for US policymakers**

**Dr Dalibor Rohac**  
Resident Scholar, Foreign and Defense Policy

September 23, 2020

The American Enterprise Institute (AEI) is a nonpartisan, nonprofit, 501(c)(3) educational organization and does not take institutional positions on any issues. The views expressed in this testimony are those of the author.

Chairman Keating, Ranking Member Kinzinger, distinguished members of the Subcommittee,

I thank you for this opportunity to share my views on the implications of the European Union's (EU's) European Green Deal on geopolitics, energy security, and transatlantic relations.

My central message is that, as with many other EU initiatives, there is a mismatch between the ambitions and the tools and policy available to meet those ambitions. Whether the EU achieves its decarbonization goals and what the unintended consequences of such efforts will be depends largely on factors outside of the EU's control. That said, the initiative highlights the need for the United States to engage constructively on energy policy with our European partners – not least because many of the issues at stake have far-reaching geopolitical ramifications.

### 1. European Green Deal and its significance

In her State of the Union (SOTEU) address to the European Parliament on September 16, 2020, the European Commission's (EC's) president Ursula von der Leyen reiterated the EU's commitment to "becoming the first climate-neutral continent by 2050,"<sup>1</sup> articulated already in the Commission's European Green Deal, a strategic document adopted in December 2019.<sup>2</sup> To that end, "the European Commission is proposing to increase the 2030 target for emission reduction to at least 55 percent"<sup>3</sup> relative to its 1990 levels – up from the previous binding target of a 40-percent reduction.

While the European Green Deal itself is very light on specifics, SOTEU gives an indication of the Commission's emphasis on the rollout of hydrogen-based energy technologies, renovations of buildings, and creating an electric charging point infrastructure.

Moving from the aspirational to the concrete, von der Leyen vowed to roll out the legislation needed to meet the 55-percent target, including a strengthened emissions trading scheme, by the summer of 2021. Most significantly the EU is directing a significant part of its post-pandemic recovery fund (Next Generation EU, NGEU), worth €750 billion in loans and grants to member states, and an increased seven-year Multi-Annual Financial Framework (MFF) for 2021-2027 of €1,0743 billion to finance the investment into emission reductions.<sup>4</sup>

To provide perspective on the figures, recall that the EU's GDP in 2019 was just below €14 trillion. On an annual basis, the overall EU budget, including NGEU, will still account for less than 2 percent of the EU's GDP. While the deal has been applauded as a substantial breakthrough, partly because it involved the creation of a common European debt facility, its macroeconomic impact will be small. Of the total spending package, at least 30 percent – or €548 billion over the course of 7 years – is to be dedicated to "climate action." But pre-COVID-19, the EU's ambition was already to allocate over €500 billion for climate and environment under the 2021-2027 MFF, while

<sup>1</sup> European Commission, *State of the Union Address 2020*, (Brussels: European Commission, 2020), 9, [https://ec.europa.eu/info/sites/info/files/soteu\\_2020\\_en.pdf](https://ec.europa.eu/info/sites/info/files/soteu_2020_en.pdf).

<sup>2</sup> European Commission, *The European Green Deal*, (Brussels: European Commission, 2019), <https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1596443911913&uri=CELEX:52019DC0640#document1>.

<sup>3</sup> *State of the Union Address 2020*, 9.

<sup>4</sup> European Council, *Conclusions – 17, 18, 19, 20 and 21 July 2020*, (Brussels: European Council, 2020), <https://www.consilium.europa.eu/media/45109/210720-euco-final-conclusions-en.pdf>.

mobilizing further investment by member states, the European Investment Bank, and the private sector, mobilizing a total of €1 trillion over the next decade.<sup>5</sup> As a result, in spite of the significant fanfare for the new budget deal and in spite the more ambitious emissions target for 2030 announced by von der Leyen, there has not been a dramatic shift in policy and spending.

## 2. What is left out and why it matters

What the European Green Deal and the financial package for 2021-2027 leave out is equally as important as their stated ambitions and the seemingly impressive fiscal firepower. In particular, the EU does not control national energy and environmental policies. Neither does the European Green Deal involve a detailed plan of decarbonization – other than the EU’s sectoral strategies, e.g. to increase the share of hydrogen-based technologies,<sup>6</sup> promote “circular economy” (i.e. reduce carbon footprint and waste involved in electronics, batteries, textiles, etc.),<sup>7</sup> and energy technologies more generally.<sup>8</sup>

If “the ultimate goal of [climate-friendly energy policy] is to develop non-carbon energy supplies at unsubsidized costs less than those using fossil fuels,”<sup>9</sup> the EU’s efforts do not give much indication of how the continent will get there. While hydrogen-based solutions are frequently singled out, including in SOTEU where von der Leyen announced the creation of European ‘Hydrogen Valleys,’ by the EC’s own admission, “neither renewable hydrogen nor low-carbon hydrogen, notably fossil-based hydrogen with carbon capture, are cost-competitive” at the moment<sup>10</sup> and will require significant investment to research and development (R&D) and to infrastructure. Just how far hydrogen-based solutions can get is therefore an open question.

Considerable uncertainty surrounds the precise ways through which the resources are going to be allocated and the outcomes that will be attained. NGEU, for instance, consists of grants and loans to national governments, which will use the funds in a manner consistent with their own national energy policies. By October 2020, member states are expected to submit their spending plans to the EC, which will assess the extent to which they contribute to the EU’s overall climate (and digital) goals. Yet, that is not a technical exercise with hard-and-fast rules but rather a political

<sup>5</sup> European Commission, Press Corner, “The European Green Deal Investment Plan and Just Transition Mechanism explained,” January 14, 2020, [https://ec.europa.eu/commission/presscorner/detail/en/qanda\\_20\\_24](https://ec.europa.eu/commission/presscorner/detail/en/qanda_20_24).

<sup>6</sup> European Commission, *A hydrogen strategy for a climate-neutral Europe*, (Brussels: European Commission, 2020), [https://ec.europa.eu/energy/sites/ener/files/hydrogen\\_strategy.pdf](https://ec.europa.eu/energy/sites/ener/files/hydrogen_strategy.pdf).

<sup>7</sup> European Commission, *A new Circular Economy Action Plan For a cleaner and more competitive Europe*, (Brussels: European Commission, 2020), <https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1583933814386&uri=COM:2020:98:FIN>.

<sup>8</sup> European Commission, *Towards an Integrated Strategic Energy Technology (SET) Plan: Accelerating the European Energy System Transformation*, (Brussels: European Commission, 2015), [https://setis.ec.europa.eu/system/files/integrated\\_set-plan/communication\\_set-plan\\_15\\_sept\\_2015.pdf](https://setis.ec.europa.eu/system/files/integrated_set-plan/communication_set-plan_15_sept_2015.pdf).

<sup>9</sup> Gwyn Prins et al., *The Hartwell Paper: A new direction for climate policy after the crash of 2009*, (London: Institute for Science, Innovation & Society, University of Oxford and LSE Mackinder Programme, London School of Economics and Political Science, 2010), 5, [http://sciencepolicy.colorado.edu/admin/publication\\_files/resource-2821-2010.15.pdf](http://sciencepolicy.colorado.edu/admin/publication_files/resource-2821-2010.15.pdf).

<sup>10</sup> *A hydrogen strategy for a climate-neutral Europe*, 4. The current ambition is to install 40GW worth of renewable hydrogen-based projects by 2030, while only 1.5-2.3 GW are currently under construction or announced. As a proportion of the EU’s energy mix, the EC envisage an increase of the share of hydrogen from 2-4 percent at the present to 13-14 percent in 2050.

balancing act. Different countries have different energy mixes and face different trade-offs in scaling up renewables and phasing out fossil fuels. As a result, how exactly the EU's broadly conceived plans will work on the ground remains an open question.

## 2.1 R&D, and helping vulnerable regions transition

If existing technologies are not quite there yet, more R&D will be needed – and that is where one of the main gaps in the EU's plans lies. While 35 percent of the R&D budget under the EU's flagship R&D program Horizon Europe is dedicated to climate issues, the budget itself was slashed from the original proposal from last year of €100 billion<sup>11</sup> to €75.9 billion.<sup>12</sup> Likewise, the final agreement among member states involves a reduction of the budget for facilitating transitions of regions with heavy presence of polluting industries under the Just Transition Fund was reduced to just €17.5 billion from the originally proposed €40 billion. The Strategic Investment Facility, originally envisaged at €31 billion, to be used also toward industrial transitions, was eliminated altogether.<sup>13</sup>

The agreement was part of the deal struck under the pressure from member states, particularly in Central and Eastern Europe, which did not want to see the amounts of their structural funds reduced and which pressed for funds whose use would be as unrestricted as possible.

## 2.2 What role for nuclear energy?

The funding allocated to support decarbonization within NGEU and MFF excludes investment into additional nuclear capacity. Indeed, the role of nuclear power in the EU's energy mix decreased in the past decade and a half. There are, however, considerable differences among member states in the role envisaged by nuclear power and its role in tackling the issue of climate change, and the EU itself plays only a very limited role in shaping national policies under the Euratom Treaty. As a result, some countries have never relied on nuclear power to begin with (Austria), and others have phased out nuclear power completely (Italy) or are in the process of doing so (Germany).

On other end of the spectrum, nuclear power constitutes over 70 percent of France's energy mix – notwithstanding the pledge made initially by president Francois Hollande and later by Emmanuel Macron to reduce its share to 50 percent by 2025.<sup>14</sup> In February this year, President Macron called

<sup>11</sup> European Commission, "The Commission's proposal for Horizon Europe," accessed September 18, 2020, [https://ec.europa.eu/info/horizon-europe-next-research-and-innovation-framework-programme/commissions-proposal-horizon-europe\\_en](https://ec.europa.eu/info/horizon-europe-next-research-and-innovation-framework-programme/commissions-proposal-horizon-europe_en). In comparison, in 2020 US Department of Energy (DOE) is spending \$2.3 billion to secure energy independence and fund innovations and \$5.5 billion in science funding for R&D and DOE's National Laboratories.

<sup>12</sup> *Conclusions – 17, 18, 19, 20 and 21 July 2020*, 18.

<sup>13</sup> See also Karsten Neuhoff and Johanna Lehne, "How 'green' the EU recovery is depends on member states," *Climate Home News*, July 24, 2020, <https://www.climatechangenews.com/2020/07/24/green-eu-recovery-depends-member-states/>.

<sup>14</sup> Adrien Sénécat, "La baisse du nucléaire à 50 % en 2025, une promesse jamais suivie de moyens [The reduction of nuclear power to 50% in 2025, a promise never followed up on]," *Le Monde*, November 8, 2017, [https://www.lemonde.fr/les-decodeurs/article/2017/11/08/la-baisse-du-nucleaire-a-50-en-2025-une-promesse-jamais-suivie-de-moyens\\_5212107\\_4355770.html](https://www.lemonde.fr/les-decodeurs/article/2017/11/08/la-baisse-du-nucleaire-a-50-en-2025-une-promesse-jamais-suivie-de-moyens_5212107_4355770.html).



nuclear power “the most decarbonized non-intermittent production of energy in the world”<sup>15</sup> and the country’s hydrogen strategy relies primarily on the electrolysis of clean hydrogen using nuclear power – not solar or wind as in Germany.<sup>16</sup>

In Sweden, where nuclear power accounts for over 30 percent of the overall energy mix, the public opinion has gradually moved in support of it, and the main center-right party, Moderaterna, opposes the phasing out of existing capacities.<sup>17</sup> Czech Prime Minister Andrej Babiš unsuccessfully pushed for nuclear power to be categorized as a “clean” energy source, eligible for funding under NGEU.<sup>18</sup> The Czech Republic is planning to build a new reactor in Dukovany, with the tender to be awarded in 2022.<sup>19</sup> Romania, which recently scrapped its partnership with China, is planning to build nuclear reactors 3 and 4 at Cernavoda. Hungary is proceeding with the construction of the Paks II reactor by Rosatom, and in Finland, a Finnish-Russian consortium is going ahead at Olkiluoto 3.<sup>20</sup>

### 2.3 Can Europe overcome its addiction to Russian gas?

Another question that the EU’s decarbonization strategy leaves unanswered is the role of natural gas in its energy mix and particularly the role of Russia as a major supplier. Since the 1990s, the bloc’s reliance on natural gas as an electricity-generating fuel has increased as it became a more economical and comparatively cleaner alternative to coal. Because fracking has never taken on in Europe to the same extent as in the United States and Canada, natural gas imports, 40 percent of which come from Russia, remain significant.<sup>21</sup> Russia has been using natural gas infrastructure as a means of building leverage over Europe – and also as a means of putting pressure on post-2014 Ukraine.

<sup>15</sup> Luna Gay-Padoan, “‘Nous avons une chance historique, c’est le nucléaire’, selon Emmanuel Macron [‘We have a historic chance, namely nuclear power,’ according to Emmanuel Macron],” *TV5Monde*, February 12, 2020, <https://information.tv5monde.com/info/nous-avons-une-chance-historique-c-est-le-nucleaire-selon-emmanuel-macron-346444>.

<sup>16</sup> Anna Feitz, “Hydrogène: la France détaille son plan à 7 milliards d’euros [Hydrogen: France details its plan to 7 billion euros],” *LesEchos*, September 8, 2020, <https://www.lesechos.fr/industrie-services/energie-environnement/hydrogene-la-france-detaille-a-son-plan-a-7-milliards-deuros-1240547>.

<sup>17</sup> “Kraftigt ökat stöd för kärnkraft i Sverige [Significantly increased support for nuclear power in Sweden],” *Analysgruppen – Energiföretagen*, November 22, 2019, <https://www.analys.se/wp-content/uploads/2019/11/20191122-analysgruppen-opinion-pressemeddelande.pdf>.

<sup>18</sup> Aneta Zachová, “Ako premiér Babiš nepresadil jadro ako zelený zdroj energie [As Prime Minister, Babiš did not convince the EU to label nuclear power as a green source of energy],” *Euractiv*, April 29, 2020, <https://euractiv.sk/section/energetika/opinion/ako-premier-babis-nepresadil-jadro-ako-zeleny-zdroj-energie/>.

<sup>19</sup> Hana Jakubcová, “Kdo dostaví blok v Dukovanech? Odpověď bude v roce 2022 [Who will build the block in Dukovany? The answer will be in 2022],” *Třebíčský deník*, April 29, 2020, [https://třebický.denik.cz/zpravy\\_region/kdo-dostavi-blok-v-dukovanech-odpoved-bude-v-roce-2022-20200429.html](https://třebický.denik.cz/zpravy_region/kdo-dostavi-blok-v-dukovanech-odpoved-bude-v-roce-2022-20200429.html).

<sup>20</sup> Anne Kauranen, “Finland’s long-delayed Olkiluoto three nuclear reactor granted operating licence,” *Reuters*, March 7, 2019, <https://www.reuters.com/article/us-finland-nuclear/finlands-long-delayed-olkiluoto-three-nuclear-reactor-granted-operating-licence-idUSKCN1QO1IC>.

<sup>21</sup> “Shedding light on energy in the EU - A guided tour of energy statistics,” *Eurostat*, April 30, 2020, <https://ec.europa.eu/eurostat/cache/infographs/energy/bloc-2c.html>.

The South Stream pipeline, an explicit effort to circumvent Ukraine, was stopped by the EC on competition policy grounds.<sup>22</sup> Its replacement, Turk Stream, together with Nord Stream and the almost-completed Nord Stream 2 pipeline create sufficient redundancy for Russia to be able to cut off supplies to Ukraine (or Belarus) without compromising its ability to supply natural gas to the EU. Although low gas prices and the abundant spare capacity make the economic rationale of such pipelines dubious, to say the least, Germany remains committed to the Nord Stream 2 project – notwithstanding US sanctions.<sup>23</sup>

As an aside, the problematic geopolitics of natural gas goes some way towards explaining the reliance of Poland on the highly polluting and uneconomical coal and lignite, which jointly account for almost three quarters of the country's energy mix.<sup>24</sup> Poland has also openly defied the goal of carbon neutrality by 2050. The challenge of dependence on Russian supplies has also prompted groups of countries into investing into alternative sources of supply and interconnectors reducing Russia's leverage. The Three Seas Initiative in particular is envisaging the construction of an LNG terminal in Krk, Croatia, with a connecting pipeline through Hungary and Slovakia; a pipeline that connects Lithuania, Latvia, and Estonia to the wider European gas network (Gas Interconnection Poland-Lithuania, GIPL), a Bulgaria-Romania-Hungary-Austria (BRUA) pipeline, as well as a Baltic pipeline to Norway. How feasible these projects are is an open question. Yet, their proliferation suggests that even with the EU's commitment to decarbonization natural gas is not going anywhere. It also reveals strategic tensions within the EU between countries that see Russia energy supplies as a geopolitical challenge and those that believe that energy and politics can be neatly separated.

### 3. The United States needs to engage

While the EU as a bloc places decarbonization high on its list of priorities, considerable uncertainty surrounds the actual effects that the European Green Deal and spending priorities within the new MFF and NGEU will have on the ground. The imperative for the United States is to engage, however. It is in the US interest that the EU makes significant strides toward reducing its own carbon footprint and that its energy sector extricates itself from its current dependency on Russian oil and gas. Moreover, it is manifestly in the US interest that the Chinese regime does not expand its presence in European energy sectors.<sup>25</sup> That will require a multiprong approach, including:

<sup>22</sup> Arno Behrens, "The declared end of South Stream and why nobody seems to care," *Centre for European Policy Studies*, December 5, 2014, <https://www.ceps.eu/wp-content/uploads/2015/01/AB%20Southstream%20Pipeline.pdf>.

<sup>23</sup> Guy Chazan, "Germany offered €1bn for gas terminals in exchange for US lifting NS2 sanctions," *Financial Times*, September 16, 2020, <https://www.ft.com/content/3d028b63-31da-450e-ae73-13b25ecd0032>. According to the *Financial Times*, Germany's finance minister Olaf Scholz even "said Germany would increase its financial support for LNG infrastructure and import capacities 'by up to €1bn' in exchange for the US 'allow[ing] for the unhindered construction and operation of Nord Stream 2'."

<sup>24</sup> Anna Mikulska and Eryk Kosinski, "Poland's love affair with coal: can the EU do anything about it?," *Energy Post*, April 5, 2018, <https://energypost.eu/explaining-polands-coal-paradox/>.

<sup>25</sup> Prominently, China Three Gorges, a state-owned major electricity enterprise, started investing into Energias de Portugal, an integrated electricity operator and the country's largest firm in 2011. It currently holds a controlling 28.3 percent stake (alongside China Ningbo International Corporation Co. Ltd., another Chinese state-owned investment company) in 2012. State Grid of China acquired 25 percent of the equity of REN, the country's electricity grid utility. In 2016, China State Grid acquired a 24 percent stake in Independent Power Transmission Operator (ADMIE) in

- A. Support for US energy companies operating in Europe through the Export-Import Bank and other tools. Westinghouse's nuclear fuel fabrication plant in Västerås, Sweden, remains a marginal presence relative to Russian producers. Several US companies, including NextEra, are starting pilot projects involving hydrogen. As part of US economic diplomacy, connections between US and EU companies and joint ventures ought to be encouraged, particularly in areas where the likely alternatives feature Chinese companies, as in solar.
- B. The United States ought to provide appropriate support to projects of LNG terminals in Europe, regardless of whether those end up benefiting US exporters of LNG in particular or suppliers from other countries, most notably Nigeria and the Gulf countries. Diversification away from Russia is in and by itself desirable.
- C. Support for common R&D projects, involving US and EU research organizations and the private sector. This could come in the form of joint grants by the US Department of Energy and Horizon Europe for US-EU research consortia.
- D. (Friendly) pressure on our European partners to avoid steps that compromise both EU and US strategic interests and the EU's efforts at decarbonization – such as the Nord Stream 2 pipeline or large Chinese investments into European energy infrastructure – up to and including the use of sanctions under CAATSA or PEESA/NDAA.

Thank you.



Mr. KEATING. Okay. Thank you very much, Doctor, and thank all the witnesses for their testimony. I will now recognize members for 5 minutes each, and pursuant to the House rules all time yielded is for the purpose of questioning our witnesses.

Because of the virtual format of this hearing, I will recognize members by seniority, alternative between Democrat members and Republican members. If you miss your turn, please let your staff know. We are going to circle back to you. If you seek recognition, you must unmute your microphone and address the chair verbally and, obviously, as part of the hearing be on the screen.

I will now start by recognizing myself for questions.

Seldom do we have testimony that is echoed by all the witnesses that the decisions—the economic decisions in this instance that we are contemplating are the greatest in human history—your words.

But that is where we are at and that is how important this is. That is how much of an opportunity it can be for our country and our planet but also how it cannot be.

Now, many times we are talking about pieces of paper. We are talking about policy. It all sounds very wonkish. But my question to Mr. Morton, and if anyone else wants to come in with an answer, is really to discuss the importance of being strategic as a country as having a policy in place, because we are not in this by ourselves, and as our witnesses have said, this is going to go along—this movement is going to go on with us or without us playing a lead role.

I mean, we deal with global supply chains, global production chains, global trade. So that is why the U.S. needs a strategic policy in place.

Can you put into layman's terms or communicate the importance of having a concrete policy in place so that we are moving together with the private sector, with other countries of the world, and have an opportunity to lead and benefit from that instead of just muddling through?

So many of our policies that we have had hearings on in our full committee it is the policy of muddling through. We cannot afford to do that.

Mr. Morton.

Mr. MORTON. Sure. Thank you for the—for the question, Mr. Chairman.

You know, I think it is important to recognize that climate change 20 years ago was an environmental concern. It became a or it has become a human health concern. It has become a moral concern.

It has become a social concern, and it is when it has also become an economic concern that we have begun to see in recent years the piling on and the understanding now among corporates, among financial institutions, among investors, among consumers that the—that this train is leaving the station.

And I think when you have the alignment of policy signals as we, clearly, have from around the world, the fact that 189 countries are parties to the Paris Agreement, which essentially says, when you boil it down, that every 5 years those parties will come back with increasing levels of ambition around their carbon emission reduc-

tions targets. That is a clear, clear signal of where the world is moving with respect to its—with respect to its carbon trajectory.

And so when I say this is the most predictable and consequential economic transformation in history, to my mind what that means is we see extremely clearly the direction of travel. There is no question where the world is moving and, again, the question is just how quickly are we going to get there and who will benefit most from it. This is—

Mr. KEATING. Yes, I think—I think we are going to—we cannot wait and it has already happened. If people look at their own investments, those people that have investments—if people look at their 410(k)'s and they dig deep into the reports, they are going to find out there is already calculations in place about the effect of carbonization in terms of the value of their investments and in terms of what the private sector is investing in, and you brought that to light.

But this is—do we have to wait until people get so familiar that they are looking at their own pensions or investments and saying, oh, what is this factor, or calculating that. Isn't that going to be commonplace?

Mr. MORTON. I think it will be, and I think financial institutions in a very short period of time will begin to either voluntarily or have to disclose the carbon content of their—of their holdings, and when that happens you will find, I think, a seismic shift in how consumers and investors treat the carbon intensity of assets because, again, there is two sides to this.

One is the carbon—one is the question of how much exposure do you have and what is the downside to your—to our, as an economy, our exposure to carbon.

The other is what is the upside, and this is the important moment that we could recognize today. The upside potential in transitioning faster and smarter and, again, leading this transition as opposed to being left behind.

The last thing I will say is China, in 2008 and 2009—and Dr. Nahm may know more about this than many of us—put in place a very, very effective and forward-leaning set of stimulus packages in response to the Great Recession.

They looked forward. They said, we are going to dig out of this but we are going to dig out of this in smart ways. They invested in solar, wind, battery technology, EVs, and today they are the, as Dr. Nahm said, the leaders in each of those technologies. Commanding leaders in each of those technologies, which today are the underpinning of this new economy.

So, today, the question is what are we going to do to dig out and to reinvest in a way that positions us as the leaders 10 years hence, and I think that is a question for all of us. But I will not be in high carbon-intensive solutions. It will be in low carbon-intensive solutions.

Mr. KEATING. Well, I see the issue in terms of our place in catching up. I see it in my own district and our own country in power where we are behind Europe in much of that.

I will now turn to Representative Kinzinger for his questions.

Mr. KINZINGER. Thank you, Mr. Chairman.

Dr. Nahm, congratulations. Just in time for one of the calmest election seasons we have ever had. So congrats on your citizenship.

Dr. Rohac, I got a series of questions for you. Why is it important, in your mind, that Congress takes a lead on ending the Nord Stream 2 pipeline?

I will let you know you are on—yes, there you go. You were a little quiet in your intro so if you could make sure——

Dr. ROHAC. I will adjust the mic.

Mr. KINZINGER. Perfect.

Dr. ROHAC. So Nord Stream 2 is part of a series of projects undertaken by the Russian government over the past couple of years—over a decade, really—that sought to circumvent the traditional natural gas which supplied the Ukraine, mainly, and the spare capacity that is created jointly by Turk Stream, by Nord Stream, and Nord Stream 2 actually creating that redundancy for Russians to be able to cutoff supplies in Ukraine, Belarus, without any consequences for their gas contracts with the European Union. That gives, obviously, the Kremlin leverage over those countries, creates the potential to destabilize there and essentially the neighborhood.

Thankfully, there have been—there has been some pushback within the European Union. Oddly, with the third energy package there are now competition policy rules that prevent Russians from striking the same sort of contractual deals with individual countries as they were granted in the past.

Mr. KINZINGER. Well, let me—let me interrupt you for a second. I appreciate that. I just have a few more questions, though, on it. But let us say—you know, Germany is considering a Nord Stream 2 moratorium. Can that be easily reversed and how quickly could that pipeline be finished if they did?

Dr. ROHAC. Well, the pipeline is almost at a completion stage. It is very close to completion. The problem with just a moratorium is that, you know, it can be reversed. I do not know for how—you know, for how long it creates a sort of window of opportunity if you just go back to the pipeline.

And the economics of the pipeline never really made sense to be—again, with especially these low prices that are. But having, you know, a—having a moratorium in place creates the opening to, essentially, go back to the pipeline in the future, which is—which is why it is important, I think, for the United States to put some pressure, albeit in friendly terms, on our European partners, on Germany, by offering some sort of fulcrum for Germany.

I think there is a debate within Germany about Nord Stream 2 and about LNG, the discussion of possible LNG terminals on the north coast of Germany.

So I think there needs to be this two-pronged approach where the United States States clearly that this is not in the U.S. interest and—but still in a way that is not seen as overly pushy or sort of, you know, put off by that.

I know that the EU-German relationships have not been in a great place. But, I mean, Nord Stream 2 is something that is very much not in the German interest nor it is in the European interest.

Mr. KINZINGER. Thank you.

Let me—let me ask you, China's commitments under the Paris Agreement have been recognized as insufficient in slowing down the rise in global temperatures.

Why was China, an economic superpower, permitted to make such insufficient commitments in 2015 compared to those by the U.S., EU, and other Western countries?

Dr. ROHAC. Well, the history is important because there was an earlier climate summit in 2009 which failed to break a binding resolution.

So 2015 was, in a way, a call to reality which allowed countries to decarbonize at their own pace, and actually pretty much on what was said earlier on China is, basically, true and important.

China has made progress in, you know, decarbonizing its own economy at some level on solar and then other renewable domains. At the same time, it has been funding the construction of coal plants as part of the Belt and Road Initiative, and I think, you know, and it continues to in the aggregate increase emissions. It is very much hoped that Chinese emissions will peak in this decade. But that is far from a global conclusion.

So I think there is a big question mark over the seriousness and movement to decarbonization.

Mr. KINZINGER. Thank you.

I only have 20 seconds left. So I will just kind of put these for the record. But I do have a question I will submit to you, Dr. Rohac, about the Three Seas Initiative and the new LNG terminal as well as Chairman Keating and I, we led the European Energy Security and Diversification Act and I have some questions about that.

But since there is other people that want to ask questions, I want to thank you and the witnesses and the chairman for holding this.

I yield back.

Dr. ROHAC. Thank you.

Mr. KEATING. I would like to thank the ranking member.

I will now recognize the vice chair of the committee, Representative Spanberger.

Ms. SPANBERGER. Thank you, Chairman Keating. Thank you to the witnesses for being here.

Dr. Nahm, congratulations on your citizenship. I appreciate the framing of today's conversation, particularly on such an important topic.

As we all know, the COVID-19 pandemic has caused significant heartbreak and loss across our country and the world, and loss of life, lasting health conditions, economic hardship, isolation, and so many other elements.

And as we continue to talk about what it will take to grow out of this pandemic, I really appreciate the framing of today's conversations.

So, Dr. Nahm, I would like to begin with you. In your view, the types of investments that countries can make to bounce back more quickly from this investment, and following up on Congressman Kinzinger's question, can you talk a little bit about how efforts to be more resilient, moving forward, can actually also be an element of how we compete internationally, and just a little bit more signifi-

cantly there, you know, the economic recovery spending that we are going to make and have made as we invest in sectors that present economic opportunity, I am wondering where is that, as you view it, that real benefit in climate and national security benefits in terms of our international competition?

Dr. NAHM. Thank you for that question.

I think—I think there are sort of two aspects to it, right. What we are seeing internationally, even though commitments are falling short of where they should be to fix this problem, is a very sort of strategic effort in Asia and Europe to, basically, fill out—use this opportunity to fill out parts of the domestic sort of clean energy infrastructure and supply chain that are currently not very well supported. And so that is technologies that are not very well supported or in early stages like hydrogen.

That is sort of a way of reducing reliance on China, for instance, in Europe with the battery consortium that is trying to sort of kick start a European battery industry. And so there is—so that is sort of one side of it, right, so using this time and the money that is being spent to complete and be more competitive in industries that countries are agreeing on being important, going forward.

I think that the—sort of a separate debate is what support for clean energy markets domestically will do in terms of employment, and I think in that debate in the past we have focused a lot on the reliance on China and sort of China's dominance in manufacturing and our wish to bring manufacturing back, and that is a valid concern.

I think where we have been missing emphasis in the conversation in this country has been how many jobs are actually not in manufacturing in these industries, and so those are the kinds of blue-collar jobs that we long have been talking about are being lost—the sort local construction jobs.

You know, if you have wind and solar installation service, a huge maintenance and installation employment opportunity. There are related service industries in these sectors. All of these infrastructure projects and building retrofits have construction jobs, and so there is this sort of international competitiveness aspect.

But I think there is also a debate we should have about what kinds of jobs we will get regardless of where we are currently in terms of, you know, manufacturing competitiveness in these sectors.

And so I think that is—that is both important and probably, you know, would require sort of a two-pronged approach of creating markets and filling out—filling out our competitiveness.

I think, historically, we have been incredibly good at research and development. We also have very good institutions through universities to spin off new technologies and to startup companies. Where we have been less competitive it is financing these startup companies to the point where they can scale these technologies and then actually manufacture and deploy them in this country. And so that gap, I think, we have not fixed for the most part.

Ms. SPANBERGER. Thank you so much, Dr. Nahm, and I am looking for my time keeping bubble. So I do not see it, Mr. Chairman. You might have to interrupt me as I approach.

Mr. KEATING. Fifty-two seconds, Representative.

Ms. SPANBERGER. Okay. So I would just like to comment then rather than go into additional conversation.

Dr. Nahm, thank you very much for bringing the conversation not just about the manufacturing but also the jobs that would come to the United States if we were to really, really focus on building out greater resiliency, everything from making major investments in renewable energy, the power grids that go along with that, and the maintenance of such efforts.

I want to thank all of the witnesses, and I do not want to run over time. I am grateful for you all being there—being here today and thank you for what you are bringing to this conversation, and thank you for all of your work and research.

I yield back, Mr. Chairman.

Mr. KEATING. Thank you, Representative.

The chair now recognizes Representative Burchett of Tennessee.

[No response.]

Mr. KEATING. Are you with us still, Representative Burchett?

[No response.]

Mr. KEATING. Then we will come back to you in order.

The chair recognizes Representative Cicilline.

Mr. CICILLINE. Thank you, Mr. Chairman, and thank you to all the witnesses for this excellent testimony.

I would like to just sort of build on Congresswoman Spanberger's question and ask you, Mr. Norton—Morton, I am sorry. You know, I think we think of these issues as we are thinking about climate—the climate crisis in kind of three specific ways as it relates to COVID-19, our economic recovery and our competitiveness, our national security, and our environmental stewardship.

And I think very often people think of those things as competing and we have to make tradeoffs, and I wonder if you would speak to the opportunity that our being thoughtful in our response to COVID presents in terms of aligning all three of those priorities and responsibilities rather than kind of being a tradeoff.

Mr. MORTON. That is a—that is a terrific question. Thank you, Congressman Cicilline, and it is a big question.

You know, when I covered these issues at the National Security Council under President Obama, we spent a lot of time thinking about—thinking about the interplay between those, and I think it is no—it is no secret that there is a strong national security imperative in securing our economic future and securing our—and in mitigating the greatest risks of climate change.

And that is across everything from force preparedness and troop readiness and coastal—resilience of coastal military installation overseas—you know, protecting overseas supply lines in increasingly—in increasingly difficult climate-related areas.

I mean, the military has been a huge proponent of developing distributed generation renewable solutions to power there and supply power to their—to their forward posts.

So there is no question if there is a strong national security component to addressing climate change and there is an equally strong argument to be—to be made for addressing climate change because of the human displacement factor that is coming—that we see coming already related to environmental refugees, and we will see many, many more of these in the years to come and that will have

an impact on our national security undeniable because it will put pressure on our borders, on the borders of our—of our allies, as it already has and we have seen that.

And so just at a high level, I think there is no—there is not really a debate, again, around the question that climate change will have bearing and is having bearing already on national security at the margin, that those pressures will only increase.

I think the advantage we have now, because we do have this—we called it once in a generation, once in a—you know, whether it is once in a generation, once in a decade, it is once in a long time, period, to deploy significant amounts of public capital in a way that can both address environmental considerations, address national security considerations and help us rebuild, and in a way that is consistent with the clear direction of global policy travel and technology innovation.

And so I think this would be a tremendous missed opportunity, and the numbers that Dr. Nahm just shared, you know, only 7 percent of our stimulus funds collectively going to kind of climate-or green-related rebuilding.

That is a real concern. If we are using this moment to reinvest in the status quo, which we know is unsustainable from a national perspective, from an environmental perspective, why are we doing that? That is not an efficient and effective use of public resources. So look forward. That is—

Mr. CICILLINE. Thank you very much. Thank you so much.

Dr. Nahm, I want to get my last question to you. Offshore wind is a particularly exciting opportunity for my State. We have the first offshore wind farm in America and, as you know, the Europeans have been doing this since they were first installed in Denmark in 1991.

And I am just wondering whether or not you can speak to kind of the employment opportunities, the economic gains that offshore wind can provide, and also how places in Europe have resolved these kind of challenges of mixed or share use with other industries, particularly with fishing.

And, finally, whether or not there are countries, more broadly, we should be looking at in terms of the COVID-19 response that have done really smart, you know, whether it is South Korea or members of the European Union that the U.S. should be looking to, kind of as some examples.

So those are two separate questions but I wanted to get them in because I know the chairman will give you as much time as you need to answer.

Mr. KEATING. Correct.

Dr. NAHM. Thank you. I was just going to ask a question about timing.

So in terms of offshore wind and employment, I think—you know, I think Congressman Keating also has some offshore wind in his district. There is really—

Mr. CICILLINE. They are—they are beginning to think about doing it. The first wind farm is, of course, off the shore of Rhode Island. But go ahead.

[Laughter.]

Dr. NAHM. I think we need to think about this as a whole ecosystem of jobs that is created as a result of this, right. And so this goes down to the local metal welding companies that are welding together the pylons on which these turbines are being constructed.

A lot of the components are being shipped from all over the world. But the construction of these and the sort of assembly of these large turbines actually has to have a locally—you need to have a port, a maintenance facility for these—for these turbines, and you have the people with the food trucks that are selling lunch to the port workers that are shipping the repaired equipment to the turbines.

And so I think we really need to think about the whole chain of employment opportunities that exist there. When I was doing my Ph.D. at MIT there were a lot of debates about the Cape Wind project at the time, and I know that Rhode Island, you know, forged ahead.

But we interviewed a lot of local companies and all sorts of different businesses that were banking on this project happening and hoping for economic opportunity, going all the way down to steel tank companies that were, you know, doing propane tanks but had now acquired the sort of capability of welding for these things.

And so this can have a large impact on many different kinds of businesses. And I do not want to go over too much, but maybe one more point. If you think about the same amount of power generated, say, in a coal power plant there is actually not a lot of employment in that particular plant, right.

There might be employment in my end and so on, earlier on. But on average, renewable energy installations have no fuel costs but instead employ a lot of labor and maintenance and the sort of infrastructure that happens around it.

Mr. CICILLINE. Thank you so much.

I yield back, Mr. Chairman.

Mr. KEATING. Thank you, Representative.

I am going to see if Representative Burchett was able to get back on.

Mr. BURCHETT. I am here.

Mr. KEATING. Oh, great. The chair recognizes Representative Burchett from Tennessee.

Mr. BURCHETT. I know you could not tell if it was me or not, Mr. Chairman, because, as I have Stated, this unnatural light does not capture my beauty that is so misplaced in these videos.

Mr. KEATING. Well, we will not ask the witnesses to comment on that.

[Laughter.]

Mr. BURCHETT. Thank you, Mr. Chairman.

Hey, I would like to ask Dr. Rohac a question, if it would be all right. Do you think it is a good idea to expand the Development Finance Corporation's mandate to allow for the funding of nuclear projects?

Dr. ROHAC. I think it is. So when you look in Eastern Europe, there are a number of countries that are either considering or in the process of actually expanding their nuclear operations and by and large Russian companies, especially Rosatom, have the upper hand in bidding for those contracts.



In Hungary, the Paks II expansion has been given to Rosatom without going through a competitive vendor. Now Poland is considering opening up to six new nuclear reactors.

So for Westinghouse and these companies, more broadly, this has been a challenge. The question is so there is the Eximbank, which I think can play an important role.

The DFC—the question is, I believe, how far can its mandate go because so many of these countries are—they are developing countries. So I think within the DFC mandate they would be only Bulgaria and Romania that would count as possible candidates for—eligible for funding among the EU countries.

Romania, by the way, is—has now scrapped an agreement with the Chinese and is looking for new bidders for the expansion of its reactor in Cernavoda.

So I think it's important to be—that the U.S. is in this game. I think it is equally important that the U.S. is at the gate for a supply of nuclear fuel in response. So Westinghouse has a plant in Sweden, which has created a consortium with various European institutions, tried to provide safe fuel supply for the Soviet-style reactors that were—replaced coal.

But also I think it is important that this be also given attention by U.S. policymakers because I think it is very much in our interest that especially smaller European countries are—do not become dependent on Russian energy, whether it takes the form of natural gas or, indeed, nuclear power.

Mr. BURCHETT. Did I hear you say correctly early on that the Russians have the advantage in the bidding process? You cut out a little bit and I wasn't sure if that is what you said or not.

Dr. ROHAC. Yes. Oddly, that might have to do with sort of, you know, historical legacies and the presence of Rosatom in this—in these economies, but also on the cost basis it has been—you know, there are these sort of offers. Some of them by Rosatom have tended to be—than the U.S. or the Western solutions.

[Pause.]

Mr. KEATING. I think we have a technical difficulty there. Let us just pause for a minute, see if that comes back. And if you—if you can, Representative Burchett, if you have questions of another witness, perhaps you could ask those now.

Mr. BURCHETT. That is okay, Mr. Chairman. I am good. I will yield back the remainder of my time. Thank you for your patience, sir.

Mr. KEATING. Well, thank you and thank you for your questions.

Mr. BURCHETT. Yes, sir.

Mr. KEATING. We are also having technical difficulty. See if Mr. Costa is back. If not, we will ask Representative Gonzalez if he has any questions.

[No response.]

Mr. BURCHETT. Mr. Chairman, it is Tim Burchett again. It might help—when we get off it says there is a bandwidth problem. If we would—maybe if we—after we finish our questions if we get off that might help. I am not sure.

Mr. KEATING. Well, thank you. If people are off, perhaps you might want to get off because of a bandwidth issue. Thank you.

Representative Burchett, you are far more advanced than I am at even spotting these things. See if that helps.

Again, I think we have Representative Costa, Gonzalez, and then Sherman. If—Representative Sherman will ask unanimous consent to—that he join us.

Representative Sherman, how are you doing technologically?

Mr. SHERMAN. Doing just fine.

Mr. KEATING. The chair recognizes Representative Sherman for questions.

Mr. SHERMAN. Oh. I just want to thank you for holding the hearing. I thought my time to ask questions would be at the end. Are we at the end?

Mr. KEATING. Well, you're technologically at the forefront in terms of having access.

Mr. SHERMAN. Why do not I pass to the end? I want to hear what other people have to say.

Mr. KEATING. Okay. Thank you. I will—thank you. I will just recognize myself for a couple of things I did not get to ask I thought might come up in the questionings. They might have. Especially Dean Kyte and—

[Audio interference.]

Mr. KEATING. Representative Costa, are you on or—

No?

[Audio interference.]

Mr. KEATING. Let us move on. Listen, let us everyone pause for a second.

[Pause.]

Mr. KEATING. All right. I am going to continue and ask a question if I—

Mr. GONZALEZ. I am trying to be on. Can you hear me?

Mr. KEATING. Is this Representative Costa?

[No response.]

Mr. KEATING. Representative Gonzalez.

Mr. GONZALEZ. Here, Chairman.

Mr. KEATING. Ah, Representative Gonzalez, there you are. You are now recognized for questions.

Mr. GONZALEZ. Thank you. Thank you, Mr. Chairman.

My question is for Mr. Morton.

Mr. Morton, based on your work on the National Security Council, how would you shift away from fossil fuels that affect our national security and our environment, and are there particular energy sources that would allow us to maintain energy independence during a transition to renewables?

Mr. MORTON. Thank you, Congressman Gonzalez, for your question. I mean, I think—I think the first thing to recognize is that we have come a long way in the last—in the last 10 years, and if you look at the trajectory and pace of travel that we are already on, it is—it is significant and it is more than most people recognize.

So I am not saying we should rest on our laurels but it is worth realizing that in the past 2 years, if you look at the U.S. the percentage of new annual power generation installed capacity each year has been about 75 percent for renewable energy over fossil fuel, and that is a market-driven—that is a market-driven movement, right?

Mr. GONZALEZ. Right.

Mr. MORTON. We are already installing three-quarters—almost three-quarters of our annual energy installation capacity each year as renewable energy, largely in the form of solar and wind.

So that is happening, and it is producing good jobs and it is producing jobs that cannot be outsourced on the service side. The fastest growing jobs segments in the U.S. in the last 2 years, according to the Bureau of Labor Statistics, were solar photovoltaic installers and wind turbine technicians.

So that is happening, but it is not happening at the speed that it could and it is not happening at the speed, I think, that the—that the market demands and that—and that economic support.

And so there is a lot further we can go there.

In terms of next-generation, looking forward, you know, I think energy storage in particular, how we actually ensure that there is a smoothing of solar and wind supply, is—so energy storage, battery storage will be a huge area of competition and long-term competitive advantage.

The hydrogen economy is, clearly, an area where many, many economies are pointing and where we have to have, to Chairman Keating's point of view, an opinion. We need to have a perspective and a set of policies that I think enable that industry because it will be huge and it will be big and it will be global.

So I would think that a continued rapid deployment of solar and wind, leaning in on geothermal, which is a tremendous resource for this country, and a focus on energy storage and the hydrogen economy would be areas that I would prioritize on the energy generation and energy storage fronts.

Mr. GONZALEZ. So are you saying that would be enough to maintain energy independence if we made those changes that you just mentioned?

Mr. MORTON. I think—I think energy independence is a tricky word because it means—I think it means different things to different people, right.

You know, the global energy market is a—is just that. It is global. Sometimes we are net producers of energy.

Mr. GONZALEZ. That is what I mean. That is exactly what I mean. Are we net producers. Would we be net producers during that period of transition?

Mr. MORTON. I think we are getting close to a point where we—where we can be and that—you know, whether or not that is our Stated goal or whether or not that is an outcome of a—of a much more intentional set of green growth-related policies I do not have a strong opinion on. But I—

Mr. GONZALEZ. Thank you.

I have one more question. Several months ago, the Select Committee on Climate Crisis related a report that contained policy recommendations for addressing the climate crisis and ensuring that our transition to a greener energy mix does not leave workers in communities of energy-producing States like Texas, where I represent, behind.

Dr. Nahm, what steps are other countries taking in their green recovery package to assure that those employed in and relying on traditional energy such as Texas sources are equipped to make this

transition and what steps are other countries taking to promote new jobs in clean energy that are distributed fairly, paid fair wages, and are integrated with trade unions?

Dr. NAHM. Thank you for that question.

If you look at the European recovery packages, both in Germany but also at the European Union level, there are measures for what they call a just transition fund that involves both compensation but also investment in training facilities and retraining facilities to help people transition to other sources of jobs.

And so, you know, that is sort of one approach that is being taken, and a State like Texas, which has one of the largest wind industries in this country, there have been plenty of new opportunities that also have been created, you know, over the past two decades.

And so the question is are these in exactly the same locations as the old jobs and can we somehow match the technical capabilities or train people in the way or give them opportunities for training so that they can take advantage of these new opportunities.

And I think—I am sort of heartened to see that the European recovery packages are taking that on and trying to facilitate that directly.

Mr. GONZALEZ. You know, my concern on wind—for example, we have a wind farm in the adjoining district—is that once they are built they do not produce that many jobs in the long term.

In fact, that wind farm that we have next to us I think employs 15 people, and when you compare that to traditional energy employment in the region, I just do not see how it could keep up.

I mean, I am all for it. Don't get me wrong. But I am just—that is just a concern for people that live in Texas.

Thank you very much. I yield back.

Mr. KEATING. Thank you, Representative.

The chair recognizes Representative Sherman.

Mr. SHERMAN. Thank you.

We are all anxious to resume life, and so the first bit is how can we just go back to exactly what we were doing before COVID.

But, in fact, it makes a lot of sense for a country, and I see you are doing this, to look at how are we going to rebuild better, and what area is electric vehicles where you have, like, a triple chicken and egg problem.

We need demand for electric vehicles so that they will make vehicles with better range. You have range anxiety that prevents people from buying the vehicles. With fewer vehicles you have fewer recharging stations, and if you do not have the recharging stations that cuts your range.

So and it takes geniuses to invent better batteries, and there are some geniuses working on that. But a country with a good government could arrange a circumstance that when you drive to where you are going to go, you can recharge so that when you get back in your car you have topped up your electric tank.

What is Europe doing to make sure that where you park your car you recharge your car?

And I realize this is a question right out of the blue, and if our witnesses do not know I will just submit that as a question for the record.

Mr. KEATING. Any takers on that question?

Ms. KYTE. This is—this is Rachel Kyte.

It is a really good question and it harks back to an earlier question about what is the role that the government needs to play.

And so what I think is clearer in Europe is both a combination of car companies themselves making very explicit statements about when they will stop producing the internal combustion engine mixed with a policy dialog around what is the infrastructure that should be provided in order to ensure that you can have multi modal electrical clean energy transportation.

So the conversation is in different countries, including the Netherlands, Germany, Denmark, even now beginning in the U.K., a conversation around how do you decarbonize cars, move people onto healthier mobility, so that is electric bikes and public transportation.

And so you are actually seeing this coming from the European Union level in terms of the package. You are talking about national conversations.

But also, cities are playing an important role in the European debate as well and you have a number of cities coming forward with very, very aggressive targets around how to move goods and people around the city cleanly and healthily.

And then the car companies, again, take their cue from that. So it—sorry.

Mr. SHERMAN. Thank you.

I would like all witnesses to tell us what European countries are doing to require that major parking lots and structures have recharging stations, that they are consistent with the kind of technology that the cars have, are adaptable to it, and that so many apartment buildings also, in effect, have parking lots or structures for their—for their tenants so that they—whether they are required to have recharging.

Because I, personally, I go to my district office, there is no place to recharge the car, and that does not affect me now because I have got a 10-year-old car. But it is going to be very hard for me to buy an electric car or for any of the hundreds of people that work in that building to do so if there is no recharging station. And that is more than you wanted to know about my district office, and I yield back.

Mr. KEATING. Well, thank you. Thank you, Representative.

I do not think Representative Costa, whose district is really plagued by wildfires, is able to reconnect. But I will—there is a question that has been—it should be asked that I am glad I have the opportunity to ask in this round, and Dean Kyte and Dr. Nahm, perhaps you would be able to address this but anyone can.

Those are the—that is the unintended consequences of moving ahead and, again, they need to really strategize and make policy on this. But what concerns do you have about marginalized and systematically, you know, disadvantaged communities, whether they are here in the U.S. or abroad, being left out, and also making sure that when we are doing this it is along the lines of Representative Gonzalez's concern about jobs, to make sure there is a fair distribution and fair wages, integrated with unions and that kind of support.

So it is one of—the question is one of unintended, I think, exclusion and planned inclusion in terms of those other factors. Does anyone want to take a stab at that?

Ms. KYTE. Well, I will take a first go and then I am sure colleagues will have more to say.

So, first of all, this is all the more reason to plan for the transition. If we can plan for the transition then we can take care of communities who are, you know, heavily invested in and have historic ties to parts of the carbon-intensive economy, which are not going to be competitive in the future and are not competitive now.

And that does require dialog with those communities and it does require setting aside funds for retraining, for reskilling, for imagining what new industries can take place.

And there are examples of that. The dialog in Alberta between unions, global companies, local companies, provincial government, and government. There is also plans for just transition dialogs taking place in cities and counties around the United Kingdom and across Europe but also in South Korea and elsewhere.

So this is a very important part of it. It can be planned for. We have had transitions before and we have been able to help communities through that, which brings me back to, for example, in the northeast where I live now, and wind.

So here, you know, the detailed conversation around making sure that we have got the training and the education for the skills, the blue-collar and the white-collar jobs.

You know, the expansion of the job—the amount of jobs we will lose from saying goodbye to the tail end of the carbon economy, is very small in comparison to the number of good jobs that can be recreated.

Think of all of the built environment that is going to have to be refurbished to be made resilient to climate change. Think of all of the electricians, the carpenters, the new materials, the manufacturers of those new materials, et cetera, et cetera, and then think about the future where we have green hydrogen because we have so much offshore wind that we have surplus energy.

And then New Bedford is not just, you know, a place where we are putting turbines out into the ocean. It is also a green energy hub that can serve the northeast.

So these are the kinds of exciting things, I think, that when you start planning for it and working to it, you can take those communities behind.

For developing countries who are heavily in debt and need to work their way through this crisis, there are also opportunities to both solve their indebtedness and help them in the clean recovery, and there is some interesting work going on now around thinking through debt for climate and things like this.

But there are transitional innovations that can also help inclusion at the global scale. Thank you.

Mr. KEATING. Thank you.

I think Representative Meeks has joined us. I do not know if, Representative Meeks, if you have any questions.

Mr. MEEKS. Yes, I do. Thank you very much, Mr. Chairman.

Mr. KEATING. Great. Representative Meeks?

Mr. MEEKS. Thank you for—thank you for all the witnesses for their testimony here today.

Mr. KEATING. If you could move closer to your microphone. I think we are having a little trouble here.

Mr. MEEKS. Can you hear me now?

Mr. KEATING. A little better. Thank you.

Mr. MEEKS. Okay. Thank you.

I just want to thank all the witnesses for their testimony and thank you, Mr. Chairman, for this important topic.

I would like to ask Ms. Kyte, that when talking about climate diplomacy, international coordination as essential, especially with the large growing economies such as China and India, they are committing to carbon neutral futures as we are still committed to coal.

What will it take for the world to come together to energize our collective policies and can saving our planet be done without international political cooperation?

Mr. KEATING. And you need to unmute.

I think that—

Ms. KYTE. One point—sorry. Excuse me. Just one point.

International cooperation is needed now more than ever because it is the global energy economies. It is a global food value chain. We are—we are only going to solve this problem together.

And, you know, yesterday the Chinese government made an announcement that it aims to be zero-net carbon as an economy by 2060 and that it hopes to reach peak emissions by 2030.

This is a substantial ramping up of their ambition, and so now we have two of the three biggest emitters, historically, ratcheting up their ambition, which means that there is a cooperation.

There is a race to the top, and I think the danger is that for individual Americans, individual American families, communities, those of us who live here, we want to be in that race to the top and the—despite other geopolitical tensions, such as a cooling of the atmosphere in some of the discussions between these major power blocs. The possibility of a race to the top would benefit everybody, race to the top being a cleaner environment.

And so the EU have now said that they have this new ambition. China came out, I think surprising a lot of people with their new ambition statements yesterday, and I think that it is difficult to imagine how we can optimize for the new jobs for the stability that we need if we are not part of that race to the top.

Mr. MEEKS. Thank you very much. That is exactly, you know, my thoughts as well as much more with the data that used to be and, you know, one thing that we share is this planet and so, therefore, there should be a race to the top by all of us, particularly the largest countries in the world and have—that uses the most, you know, carbon.

But so let me ask Mr. Morton. You know, I sit on both—I think there is an interconnection in the Foreign Affairs Committee and the Financial Services Committee, and to see money move, guided by an invisible hand to where profits are and it is often driven by short-term thinking in quarters or even maybe years—you know, this very short term.

And in reading your statement you used a Wayne Gretzky metaphor about going to where the puck is headed when describing in-

vestments. How can finance better prepare us for what is ahead so that it can be going to where the puck is headed?

Mr. MORTON. Thank you, Congressman Meeks. It is a great question, and I think before you joined I—you know, I highlighted the recent statements from BlackRock about climate being central to their investment strategy, going forward.

The CFDC announcement from 2 weeks ago about how climate risk is a risk to the U.S. economy—a fundamental risk to the U.S. economy unless it is—unless it is better addressed. Two days ago, JPMorgan came out with its announcement about being, essentially, financing only having a net zero portfolio investments within a relatively short period of time.

We are beginning to see the pieces fall in place for what will become a rush to the exit, and this is the—this is the concern—the rush to the exit out of fossil fuels, and this is the concern that many in the financial community have had for a long time about this issue of stranded assets.

When people realize that carbon is, in fact, this liability and we begin to treat it as what it rightly is, which is a—which is today an unpriced pollutant which will be priced in the future and is increasingly being priced, financial markets will respond not in a trickle but in a flood.

And it is really important that our financial institutions and we, as investors, and as shareholders and as 401(k) holders begin to hold our financial institutions accountable for the carbon in their portfolio because it is going—the moment of reckoning is going to come soon.

And it is, therefore, I think imperative upon policymakers to send the signals to the financial institutions that this moment is coming and that we need to harden our financial institutions against the kind of and carbon risk in their portfolios.

I do not think we have got 10 years before this happens. I think it is two or 3 years before the financial institutions really, really, really begin to price carbon in their portfolios, and then we are going to see a flood of investment capital away from climate—a carbon-intensive economies toward greener sectors and alternatives.

Mr. MEEKS. Thank you very much. I yield back.

Mr. KEATING. Thank you, Representative Meeks, and I would just like to have a couple closing observations, since members have asked their questions.

And I want to thank the members, by the way, on a very busy morning with much going on. We had nine members participating, which is quite few, and I think is a testament to the importance of this issue.

It is clear. It is clear from everything that we heard this morning. It is clear from the reality that we live in that the idea of decarbonization is one that is just not an environmental issue anymore. If you just view it as such, you are living in the past.

It is much more than that, and it is—the purpose of this hearing and the purpose of this committee moving forward in a global sense to understand this, that we have to stop living in the past and having debates on how to treat it as an environmental issue, and realize where we are now and where we are going to increasingly go in the future.



Now, the private sector is way ahead of this, and we have seen in the past—we have seen in the past instances where government has been a partner in the private sector just giving opportunities for incentives, and the private sector has just moved in to be a partner.

There is opportunities to increase that dramatically and move away from this concept that we are just regulating out issues. And also, we have to look at the fact that other countries are moving ahead of us and we are being left in a weak position. You know, just as the boat goes through we are left in the—behind in the currents, and they are ahead leading the way.

Now, there is a few things we can also be sure of. After the conclusion of this COVID-19 crisis and as we move from dealing with the immediate concerns, we are going to move unquestionably into a recovery package to bring our economy back and it is clear to everyone, I believe, that this would be the largest recovery package in the history of our country.

Now, we can incorporate forward thinking in that recovery package and move ahead and do things that are important, not just for our own futures but for generations to come to maximize those efforts.

Or we can move to focus that recovery package on outdated industries, industries that do not have a future but industries that might be politically connected and might be clamouring for resources and funds and advantages government is providing, even though that is not going to lead us to the future.

So we know where we are going to end up. We are going to end up in a place where we have to address carbonization and it will be addressed whether we act or not, or we can continue to muddle through, being followers, losing jobs, losing revenue, and also condemning the people in this country to not prospering in terms of the economic or healthcare security.

So it is clear where we have to go. But government will have a role. It has to, if we are going to maximize things. And it is clear from the testimony of the witnesses here that that must be the case.

So I really thank you for your testimony. The witnesses that could not get on will have 5 days to submit written statements and extraneous material for the record, subject to the rules.

We have not heard the last of this and it is important that we are talking about it at this time of necessity and this time of opportunity, and it is just important that we do not follow the path.

As committee members know in this committee that every hearing ends up saying, as a concluding note, well, we need a policy to go forward. We hear that in the Foreign Affairs Committee time and time and time again—what is needed is a policy.

Well, that is needed here, and it is not just empty words on a piece of paper. It is a strategic plan, moving forward, working with the private sector, working with our global allies.

And we can be bystanders or we can be leaders. I think we have no choice to be the latter.

So thank you so much to our witnesses for being here. I thank the committee members. This is one of the most important issues we are dealing with and will be dealing with in the years to come,

and we have not heard the last from all of you. Thank you for your participation.

With that, this hearing is closed.

[Whereupon, at 11:38 a.m., the committee was adjourned.]

APPENDIX

**SUBCOMMITTEE HEARING NOTICE**  
**COMMITTEE ON FOREIGN AFFAIRS**  
U.S. HOUSE OF REPRESENTATIVES  
WASHINGTON, DC 20515-6128

**Subcommittee on Europe, Eurasia, Energy, and the Environment**

**William R. Keating (D-MA), Chairman**

September 23, 2020

**TO: MEMBERS OF THE COMMITTEE ON FOREIGN AFFAIRS**

You are respectfully requested to attend an OPEN hearing of the Committee on Foreign Affairs, to be held by the Subcommittee on Europe, Eurasia, Energy, and the Environment via Cisco Webex (and available by live webcast on the Committee website at <https://foreignaffairs.house.gov/>):

**DATE:** Wednesday, September 23, 2020

**TIME:** 10:00 a.m., EDT

**SUBJECT:** Green Recovery Plans for the COVID-19 Crisis

**WITNESSES:** Rachel Kyte CMG  
Dean  
The Fletcher School of Law and Diplomacy  
Tufts University  
*(Former Special Representative of the UN Secretary-General and CEO of Sustainable Energy for All, and Former World Bank Group Vice President and Special Envoy for Climate Change)*

Mr. John E. Morton  
Partner, Pollination  
Senior Fellow, Atlantic Council  
*(Former White House Senior Director for Energy and Climate Change at the National Security Council)*

Jonas Nahm, Ph.D.  
Assistant Professor of Energy, Resources, and Environment  
School of Advanced International Studies  
Johns Hopkins University

Dalibor Rohac, Ph.D.  
Resident Scholar  
American Enterprise Institute

**By Direction of the Chairman**

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*EUROPE, EURASIA, ENERGY, AND THE ENVIRONMENT SUBCOMMITTEE HEARING*

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MINUTES OF SUBCOMMITTEE ON Europe, Eurasia, Energy, and the Environment HEARING

Day Wednesday Date 09/23/2020 Room Cisco Webex

Starting Time 10:04 Ending Time 11:38

Recesses ☐ (to to) (to to) (to to) (to to) (to to) (to to)

Presiding Member(s)

*William R. Keating*

Check all of the following that apply:

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TITLE OF HEARING:

*Green Recovery Plans for the COVID-19 Crisis*

SUBCOMMITTEE MEMBERS PRESENT:

*See Attached*

NON-SUBCOMMITTEE MEMBERS PRESENT: (Mark with an \* if they are not members of full committee.)

*Representative Brad Sherman*

HEARING WITNESSES: Same as meeting notice attached? Yes ☒ No ☐

(If "no", please list below and include title, agency, department, or organization.)

STATEMENTS FOR THE RECORD: (List any statements submitted for the record.)

*Dean Rachel Kyte's Testimony*

*Mr. John E. Morton's Testimony*

*Dr. Jonas Nahm's Testimony*

*Dr. Dalibor Rohac's Testimony*

TIME SCHEDULED TO RECONVENE \_\_\_\_\_

or TIME ADJOURNED 11:38

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Note: If listing additional witnesses not included on hearing notice, be sure to include title, agency, etc.

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Subcommittee Staff Associate

WHEN COMPLETED: Please print for subcommittee staff director's signature and make at least one copy of the signed form. A signed copy is to be included with the hearing/markup transcript when ready for printing along with a copy of the final meeting notice (both will go into the appendix). The signed original, with a copy of the final meeting notice attached, goes to full committee. An electronic copy of this PDF file may be saved to your hearing folder, if desired.