

RPTR MERTENS

EDTR SECKMAN

LIFT AMERICA: REVITALIZING OUR NATION'S

INFRASTRUCTURE AND ECONOMY

MONDAY, MARCH 22, 2021

House of Representatives,

Committee on Energy and Commerce,

Washington, D.C.

The committee met, pursuant to call, at 10:59 a.m., via Webex, Hon. Frank Pallone [chairman of the committee] presiding.

Present: Representatives Pallone, Rush, Eshoo, DeGette, Doyle, Schakowsky, Butterfield, Matsui, Castor, Sarbanes, McNerney, Welch, Tonko, Clarke, Schrader, Cardenas, Ruiz, Peters, Dingell, Kuster, Kelly, Barragan, Blunt Rochester, Soto, O'Halleran, Rice, Craig, Schrier, Trahan, Fletcher, Rodgers, Burgess, Latta, Guthrie, McKinley, Griffith, Bilirakis, Johnson, Long, Bucshon, Hudson, Walberg, Carter, Palmer, Dunn, Curtis, Lesko, Pence, Crenshaw, Joyce, and Armstrong.

Staff Present: Billy Benjamin, Systems Administrator; Jacquelyn Bolen, Health Counsel; Jeff Carroll, Staff Director; Jacqueline Cohen, Chief Environment Counsel; Paul Desai, FCC Detailee; Jennifer Epperson, Counsel; Adam Fischer, Professional Staff

Member; Waverly Gordon, General Counsel; Tiffany Guarascio, Deputy Staff Director; Anthony Gutierrez, Professional Staff Member; Caitlin Haberman, Professional Staff Member; Perry Hamilton, Deputy Chief Clerk; Anne Marie Hirschberger, FERC Detailee; Alex Hoehn-Saric, Chief Counsel, Communications and Consumer Protection; James Johnson, Policy Coordinator; Zach Kahan, Deputy Director, Outreach and Member Service; Rick Kessler, Senior Advisor and Staff Director, Energy and Environment; Mackenzie Kuhl, Press Assistant; Brendan Larkin, Policy Coordinator; Dustin Maghamfar, Air and Climate Counsel; Aisling McDonough, Policy Coordinator; Dan Miller, Professional Staff Member; Elysa Montfort, Press Secretary; Meghan Mullon, Policy Analyst; Joe Orlando, Policy Analyst; Lino Pena-Martinez, Policy Analyst; Kaitlyn Peel, Digital Director; Tim Robinson, Chief Counsel; Chloe Rodriguez, Deputy Chief Clerk; Nikki Roy, Policy Coordinator; Andrew Souvall, Director of Communications, Outreach and Member Services; Medha Surampudy, Professional Staff Member; Terry Sydney, Policy Coordinator; Rebecca Tomilchik, Policy Analyst; Kimberlee Trzeciak, Chief Health Advisor; Tuley Wright, Senior Energy and Environment Policy Advisor; David Brodian, Minority Detailee, C&T; Sarah Burke, Minority Deputy Staff Director; Michael Cameron, Minority Policy Analyst, CPC, Energy, Environment; Jerry Couri, Minority Deputy Chief Counsel for Environment; Diane Cutler, Minority Detailee, O&I; William Clutterbuck, Minority Staff Assistant; Sean Kelly, Minority Press Secretary; Theresa Gambo, Minority Financial & Office Administrator; Marissa Gervasi, Minority Counsel, O&I; Grace Graham, Minority Chief Counsel, Health; Caleb Graff, Minority Deputy Chief Counsel, Health; Brittany Havens, Minority Professional Staff Member, O&I; Jack Heretick, Minority Press Secretary; Nate Hodson, Minority Staff Director; Peter Kielty, Minority General Counsel; Emily King, Minority Member Services Director; Bijan Koohmaraie, Minority Chief Counsel; Tim Kurth, Minority Chief Counsel, CPC; Mary Martin, Minority Chief Counsel, Energy &

Environment; Brandon Mooney, Minority Deputy Chief Counsel for Energy; Kate O'Connor, Minority Chief Counsel, C&T; Clare Paoletta, Minority Policy Analyst, Health; Brannon, Rains, Minority Professional Staff Member, CPC; Kristin Seum, Minority Counsel, Health; Kristen Shatynski, Minority Professional Staff Member, Health; Olivia Shields, Minority Communications Director; Alan Slobodin, Minority Chief Investigative Counsel, O&I; Peter Spencer, Minority Senior Professional Staff Member, Energy; Michael Taggart, Minority Policy Director; Evan Viau, Minority Professional Staff Member, C&T; and Everett Winnick, Minority Director of Information Technology.

The Chairman. The Committee on Energy and Commerce will now come to order. And today, the committee is holding a hearing entitled "LIFT America: Revitalizing our Nation's Infrastructure and Economy." And, of course, due to the COVID-19 public health emergency, today's hearing is being held remotely. All members and witnesses will be participating via videoconferencing. And as part of our hearing, microphones will be set on mute for purposes of eliminating inadvertent background noise. Members and witnesses will need to unmute their microphones each time they wish to speak. Documents for the record can be sent to Rebecca Tomilchik at the email address we provided to staff, and all documents will be entered into the record at the conclusion of the hearing.

So I am going to start by recognizing myself for 5 minutes for an opening statement. And as I said, today, we begin the process of rebuilding and revitalizing our economy by modernizing our Nation's infrastructure. Over the last year, we have seen the devastating results of inaction: major power outages, water disruptions, healthcare facilities stretched to the limit, and communities left behind due to the digital divide.

The LIFT America Act, which was introduced last week by all 32 committee Democrats, will help build back a better economy. It invests a total of \$312 billion in clean and efficient energy, safe drinking water, expanded access to broadband, brownfields cleanup, and improving our Nation's healthcare infrastructure. This legislation will serve as the blueprint moving forward, and it provides us an opportunity to work together in a bipartisan fashion to deliver a robust and comprehensive infrastructure package. And I am hopeful that we can work together to find bipartisan solutions.

So I want to stress, and I said this to our ranking member. I mean, this is a

beginning, you know. We introduced this as Democrats, but we would like to have Republican input into this, you know, before anything moves forward. And there are a lot of bipartisan provisions included in the overall bill in, you know, measures that were introduced by Republicans, so the bill itself does have a number of Republicans initiatives in it.

But be that as it may, we look at this as a work in progress. The LIFT America Act will help us combat the climate crisis by investing more than \$69 billion in clean energy and energy efficiency. We include funding to modernize our electric grid to accommodate more renewable energy and make it more resilient, funding to help rapidly deploy new technologies aimed at reducing emissions, and funding for energy efficiency. And, you know, we worked a lot on energy efficiency and resiliency in that energy package, a lot of which was included in the omnibus at the end of the year.

We also invest more than \$41 billion in the deployment of electric vehicle infrastructure, including \$12.5 billion to accelerate domestic manufacturing of batteries, power electronics, and other technologies for use in plug-in vehicles. Collectively, these investments will help us take an important step in combating the climate crisis while also rebuilding our economy, creating good-paying jobs, and providing much-needed relief to consumers on their energy bills.

We also invest more than \$51 billion to protect Americans' drinking water. The legislation extends and increases funding for the State revolving loan fund and other safe water programs targeting lead service lines, water systems resiliency, and water systems security. We also established a new \$2.5 billion grant program to help filter toxic PFAS chemicals or forever chemicals out of water supplies in affected communities and ensure that water systems in U.S. territories will have access to resources they need.

We also further fund the brownfields program, which has successfully helped

communities, including many environmental justice communities, clean up contaminated sites, remove public health threats, and prepare the sites for development.

And the LIFT America Act also makes significant investments in the expansion of broadband internet services. We invest \$80 billion for the deployment of secure and resilient high speed broadband. And this allows for 100 percent of broadband deployment across the country, closing the digital divide. Over the last year, we have seen essential how internet connectivity is, and this investment will lead to stronger small businesses and more jobs.

And the legislation also invests \$15 billion for the implementation of next generation 911 services that allow calls to send text messages, images, or videos to 911 in times of emergency. Again, very much a bipartisan initiative. And there is \$9.3 billion for broadband affordability and adoption to ensure that everyone can afford internet services.

And, finally, the LIFT America Act invests \$30 billion in our Nation's health infrastructure. The COVID-19 pandemic has exposed an alarming number of preexisting weaknesses in our Nation's healthcare infrastructure, and the pandemic has also stretched our health infrastructure to the breaking point. And this funding will be used to upgrade hospitals and community health centers, improve clinical laboratory infrastructure, support the Indian Health Service, and increase the overall capacity for community-based care in America.

So I don't think there is any better way to stimulate the economy for the future than to modernize our badly aging infrastructure, and I obviously want to work on this together as much as we can over the next few weeks.

So, with that, I will yield back, and I will recognize Mrs. Rodgers, the ranking member of the committee, for 5 minutes.

[The prepared statement of The Chairman follows:]

\*\*\*\*\* COMMITTEE INSERT \*\*\*\*\*

Mrs. Rodgers. Good morning, Mr. Chairman. Good morning, and to all my colleagues, I will start by reflecting on what life was like before the pandemic. Just over a year ago, our economy was booming. It was the hottest job market in half a century after a decade of people asking, "Where are the jobs," wages were rising. More jobs were available than people looking for work. People were coming off the sidelines. More people, including a record number of women and people with disabilities, were coming off the sidelines. This economic boom was driven by lifting the regulatory burden as opposed to more government mandates and requirements. As a result, there was optimism again. People were hopeful, not fearful.

Today, we should be leading to replicate this success. The hardworking people of this country are anxious for the days when we had hope and optimism driven by jobs, which brings me to this progressive wish list which is before us today. It is the complete opposite of what will deliver results. It is more regulations and mandates and less freedom to innovate and create jobs.

The LIFT Act was first introduced in 2017 with a price tag of \$85 billion. Today, it is a whopping \$300 billion for the government to regulate the cars we drive and how we heat our homes and businesses. This is not the American way. It is another example of how Speaker Pelosi wants to take us back to the dark ages, rolling blackouts, uncertainty as to whether the lights will come on when we turn on a light switch, people having to buy generators to ensure heat in their homes.

The LIFT Act will hurt our energy security, affordability, and reliability. It establishes a multibillion dollar slush fund for the Green New Deal to subsidize the left's mission to nationalize California's downfall. It fails to include solutions Republicans are focused on to secure cleaner American energy, to unleash private investment, and



remove barriers for new energy infrastructure and natural gas pipelines, nuclear licensing, and clean, renewable hydropower.

On broadband infrastructure, I will leave it to former FCC Commissioner Michael O'Rielly to explain how this bill wastes billions without actually closing the digital divide and even setting rural America back further.

Overall, I hope that we can have an honest debate on how this bill forces a regulatory regime and higher costs on Americans who have struggled enough in the worst economic crisis in our lifetime. For our economy to boom again, we should be lifting the regulatory burden. If the majority is sincere about turning this partisan bill bipartisan, we stand ready to engage. We are bringing solutions to the table to secure our clean energy future and boost broadband connectivity. I would offer I am ready. We should be working together rather than holding these virtual hearings where we are all guilty of just making our own points and not listening. I long for the day when we can work to counter the forces that keep us from building trust, better relationships, and workable solutions. May this committee lead something new and lead the way. Thank you. And I am going to yield the remainder of my time to whoever --

[The prepared statement of Mrs. Rodgers follows:]

\*\*\*\*\* COMMITTEE INSERT \*\*\*\*\*

Mr. Guthrie. Brett Guthrie.

Mrs. Rodgers. Brett Guthrie. Sorry about that.

Mr. Guthrie. Thank you, Ranking Member Republican leader. I want to thank you for yielding.

In order for lessons to be learned from this pandemic on how to strengthen our public health infrastructure, it would be a wasted opportunity not to examine what areas need improvement after being tested from the pandemic of a century and finding solutions to enhance our public health infrastructure. I am pleased the chairman has said that we want to work together with these bills that have been put forward, as he said, from the Democrat perspective.

The current text of the bill is essentially copied and pasted from a 2019 bill. And since the 2019 bill was filed, Congress has provided billions and billions of dollars because of the pandemic in discretionary spending and even more in mandatory spending for States, Federal, and local public health projects. This includes workforce data systems, lab equipment, and some of which we will still spend more than -- the moneys 2 years more from now to be spent, according to the CBO. We do need to work together not to authorize duplicate streams of funding but to identify what we need to do as we move forward.

I appreciate the gentlelady for yielding, and I yield back.

[The prepared statement of Mr. Guthrie follows:]

\*\*\*\*\* COMMITTEE INSERT \*\*\*\*\*

The Chairman. Thank you.

So what we are going to do now is allocate 5 minutes to each side before we go to our witnesses. And so the Democrats divided it amongst the chairs of jurisdiction. They will get 1 minute each, and then I believe that the Republicans have divided it between two, so they will get like 2 and a half minutes each.

So, with that, I am going to go through the Democratic 5 minutes and recognize first Mr. Rush, chairman of the Subcommittee on Energy. But each of you guys only have 1 minute.

Mr. Rush.

Mr. Rush. Well, thank you, Mr. Chairman. And I want to begin by thanking you for your tenacious leadership in introducing the Leading Infrastructure for Tomorrow's America Act, the LIFT Act. And as chairman of the Energy Subcommittee, this important bill is the top priority for me, especially considering the bill's strong support from all 32 committee members on the Democratic side.

The LIFT America Act makes critical investments to combat the climate crisis, expand broadband internet access, and revitalize America's lagging healthcare infrastructure. This bill also makes a serious and sizable investment to modernize our grid after recent grid failures, improve energy efficiency, and rejuvenate our communities, all while driving job creation. Much-needed investment in these areas will support our Nation in building back better, a top priority --

The Chairman. Bobby, I have got to interrupt you. Otherwise, the others aren't going to have a chance.

Mr. Rush. I yield the balance of my time, Mr. Chairman.

[The prepared statement of Mr. Rush follows:]

\*\*\*\*\* COMMITTEE INSERT \*\*\*\*\*

The Chairman. All right. Thank you. Next, we are going to go to Chairwoman Eshoo.

Ms. Eshoo. Good morning, colleagues, over the past year, our country has really undergone profound changes because of COVID-19, and it has laid bare a glaring shortcoming that our Nation's public health infrastructure is outdated and unprepared for crisis.

Today's legislation invests over \$36 billion to renovate and modernize public health departments, local hospitals, community health centers, the Indian Health Service, and the public health labs. The bill rebuilds our health system after a year from hell.

As chairwoman of the Health Subcommittee, I am proud that the legislation counteracts our Nation's chronic underfunding of public health and closes the disparities in public health infrastructure and data systems between regions and the IHS.

I am very pleased that two of my bills are included, one that will upgrade thousands of legacy call centers, emergency call centers, and the other protects municipal broadband, which expands access to broadband and offers higher speeds at lower prices. This would really be a vitamin B shot in the arm.

The Chairman. Anna, I am going to have to interrupt you too.

Ms. Eshoo. I yield back.

[The prepared statement of Ms. Eshoo follows:]

\*\*\*\*\* COMMITTEE INSERT \*\*\*\*\*

The Chairman. All right.

Next, we have Mr. Doyle.

Mr. Doyle. Thank you, Mr. Chairman, for holding the hearing. The LIFT America Act is a transformational investment in the future of our Nation. We have been talking about closing the digital divide for as long as I have been on this committee. For far too many Americans, broadband is unavailable, too slow, or too expensive. This legislation will change all of that by delivering on the promise of universal high-speed broadband for all. We upgrade our Nation's 911 system, giving our first responders more effective and reliable tools. We make massive investment in upgrading our Nation's water and infrastructure.

Good to see Ernie Moniz and Tom Wheeler here. I will yield back.

[The prepared statement of Mr. Doyle follows:]

\*\*\*\*\* COMMITTEE INSERT \*\*\*\*\*

The Chairman. Thank you, Mr. Doyle. Short as always.

And then last is Mr. Tonko.

Mr. Tonko. Thank you, Mr. Chair.

The LIFT America Act includes important contributions from E&C's subcommittee perspectives. It reauthorizes several drinking water programs, including the drinking water State revolving fund. It is funded at increasing levels and reaches \$5.5 billion annually. This long overdue investment is responsive to EPA's sixth Drinking Water Infrastructure Needs Survey, which found over \$470 billion is needed to maintain the Nation's drinking water infrastructure over the next 20 years. LIFT also authorizes \$22.5 billion for lead service line replacements. The bill creates a new EPA grant program to reduce emissions from ports and reauthorizes EPA's brownfields program at increasing levels, reaching \$550 million for fiscal year 2026. It is all about creating jobs and securing a stronger economic development.

Thank you, and I yield back.

[The prepared statement of Mr. Tonko follows:]

\*\*\*\*\* COMMITTEE INSERT \*\*\*\*\*



The Chairman. Thank you, Chairman Tonko.

So now we are going to recognize the minority for 5 minutes to be evenly divided between Mr. Latta and Mr. McKinley, and I will recognize Mr. Latta at this point.

Mr. Latta. Well, thank you, Mr. Chairman.

During the several Congresses that Republicans led this committee, we have been working with you all to pass substantive bipartisan policies that move the country forward. We are seriously disappointed we have not been able to reach the same consensus we have had in the past years, and the importance of bipartisanship has been seemingly forgotten.

The issues before us today should not be partisan. They impact Americans in each of our districts, regardless of their political party, and we owe it to them to work together on their behalf. Republicans on this committee recently reintroduced the boosting broadcast connectivity agenda to help Americans get broadband more quickly, and not a single one of those proposals is included in the legislation before us today.

The same goes for broadband mapping, which has historically been a bipartisan issue. Acting FCC Chairwoman Rosenworcel, who has several times stated no money before maps, is now saying that it could take up to a year to complete the maps. Yet, here we are today evaluating legislation that pushes \$80 billion out the door before the maps are completed. We have made this mistake before, and it appears we could make it again if this legislation proceeds.

Furthermore, it has long been a bipartisan effort to upgrade our 911 networks to NextGen 911. In fact, we have been working with you and your staff diligently over last several years on legislation to authorize this program. But in this legislation, you threw away all the bipartisan work. On top of that, I am not convinced that the \$15 billion in

this bill for NG 911 will actually accomplish the goal of an interoperable nationwide 911 network. I could go on, but I will leave it there for now. I am truly disturbed by the actions.

It is clear that this legislation is a partisan wish list. We must strategically and smartly fund programs that have real impact only after evaluating what we have done already in order to see if it is working or not. Unfortunately, this bill does not do that at all but instead throws money thoughtlessly at every problem in hopes that it will be fixed. I can tell you right now that isn't how we make long-lasting solutions.

Mr. Chairman, at this time, I am going to yield the balance of my time to my colleague, the gentleman from West Virginia, Mr. McKinley.

[The prepared statement of Mr. Latta follows:]

\*\*\*\*\* COMMITTEE INSERT \*\*\*\*\*

The Chairman. Thank you.

Mr. McKinley is recognized.

Mr. McKinley. Thank you, Mr. Latta, and thank you, Chairman Pallone.

This massive partisan -- partisan -- bill seeks to further carry out Biden's environmental agenda, and part of that includes the infrastructure needed for electric vehicles. Look, I am one of those engineers that you mentioned earlier as a civil engineer, that they would be great on the infrastructure, but I am fascinated by the injection of political timelines and ideology into an engineering decision.

Fundamentally transforming our entire transportation away from the dependable internal combustion engine is one thing, and I don't really have a serious problem long term on that, but performing open heart surgery on such a crucial component of our economy should demand more than an academic exercise. Congress needs to grasp the economic consequences.

So I will ask a number of questions like, how do we ensure a stable and resilient electric grid? What is the impact on jobs in refineries, pipelines, and drilling? How do we develop a domestic battery supply chain? Will America have a reliable source for lithium, cobalt, nickel, and other critical minerals? How do we replace the gasoline tax that will be lost for road maintenance? What about the time lost in recharging stations? What about accounting for the lack of trade-in values for people trying to get rid of their internal combustion engine? They are going to pay -- nurses and school teachers are going to have to pay 100 percent? Is this another unfunded government mandate? Or what about addressing the increase in landfill waste from batteries and renewable energy pieces?

Wouldn't this transition be less stressful if it occurred using free market forces?

Wouldn't that be a novel thing in Washington to use the free market approach. Not unexpectedly, California and Massachusetts already are banning the sale of cars with internal combustion engines as early as 2035.

So, Mr. Chairman, this debate is no longer the same as legislating against plastic straws and Styrofoam. This is real world, what we are talking about, people's jobs, economy and communities. Congress should find the answers to questions like I have just phrased before we move headlong into something so transformative.

Thank you, Mr. Chairman, and I yield back.

[The prepared statement of Mr. McGinley follows:]

\*\*\*\*\* COMMITTEE INSERT \*\*\*\*\*

The Chairman. Thank you. So I just want to remind members that, pursuant to committee rules, all members' written opening statements shall be made part of the record. So that is the end of our opening statements, but please submit written statements if you like.

And now I am going to introduce our witnesses. I just want to give a little background on each of them. First is the Honorable Ernest Moniz. He is president and chief executive officer of Energy Futures Initiative and, of course, the former Secretary of the U.S. Department of Energy. Then there is Dr. Tom Frieden, who is president and CEO of Resolve to Save Lives, an initiative of vital strategies, and he is former Director also of the Center for Disease Control and Prevention. We have the Honorable Michael O'Rielly, who is a principal of MP0rielly Consulting, LLC, and former Commissioner of the Federal Communications Commission, and the Honorable Tom Wheeler, visiting fellow at the Brookings Institution, senior fellow at Harvard Kennedy School, and of course, former Chairman of the Federal Communications Commission.

So I want to thank all of you for joining us today. We are definitely looking forward to your testimony, and we will start with Dr. Moniz who is recognized for 5 minutes at this time. Thank you.

**STATEMENTS OF THE HONORABLE ERNEST J. MONIZ, PRESIDENT AND CHIEF EXECUTIVE OFFICER, ENERGY FUTURES INITIATIVES, FORMER SECRETARY, U.S. DEPARTMENT OF ENERGY; TOM FRIEDEN, PRESIDENT AND CEO, RESOLVE TO SAVE LIVES, AN INITIATIVE OF VITAL STRATEGIES, FORMER DIRECTOR, CENTERS FOR DISEASE CONTROL AND PREVENTION; THE HONORABLE MICHAEL O'RIELLY, FORMER COMMISSIONER, FEDERAL COMMUNICATIONS COMMISSION, PRINCIPAL, MPORIALLY CONSULTING, LLC; AND THE HONORABLE TOM WHEELER, VISITING FELLOW, BROOKINGS INSTITUTION, FORMER CHAIRMAN, FEDERAL COMMUNICATIONS COMMISSION, SENIOR FELLOW, HARVARD KENNEDY SCHOOL**

**STATEMENT OF THE HONORABLE ERNEST J. MONIZ**

Dr. Moniz. Thank you, Mr. Chairman, Ranking Member Rodgers, members of the committee, for this opportunity to discuss the LIFT America Act. Coming on the heels of the disaster in Texas, this hearing and the LIFT America Act's focus on improving the Nation's energy infrastructure is very timely. We made energy infrastructure an early priority in my tenure as Energy Secretary with development of the Quadrennial Energy Review, and I am pleased to see close alignment with the LIFT America Act.

The urgency of upgrading our energy infrastructure in a changing climate is painfully clear. The weather patterns of the past are not adequate to inform those of the future, and this profoundly affects infrastructure planning.

In looking ahead to infrastructure needs, it is useful to note a number of technologies that will drive major infrastructure needs: Electricity and the grid: A reliable and resilient grid is the infrastructure on which others depend. Electrification of

other economic sectors, especially transportation and a continental scale charging infrastructure. Large scale carbon management: CCUS and gigaton scale and several carbon dioxide removal pathways will depend on large-scale carbon management infrastructures. Fuels that complement fuel electricity: A low carbon fuel will be needed, and hydrogen is the most likely candidate, requiring yet another major infrastructure.

In this opening statement, I will highlight only a few of the observations and recommendations in my written testimony. Electricity grid modernization must reach multiple objections, but transmission buildout is challenging. Permitting could be streamlined in a number of ways in a broad stakeholder process, such as harnessing existing rights-of-way, and Congress could initiate a review of Federal policy on wholesale market design.

Electric vehicle infrastructure must be scaled up rapidly in the next 3 to 5 years, consistent with social equity. Battery supply is also a critical need. Incentives for domestic battery manufacturing and IP protection in an area of intense international competition are critical. Battery supply considerations illustrate the importance of supply chains for critical metals and minerals, such as lithium and cobalt, suggesting development of sustainable domestic mining. Offshore wind is a good example of the importance of infrastructure planning to enable a critical low carbon pathway and create lots of good jobs. New Federal policy for transmission system buildout could include expanding DOE's loan program funding to enable offshore wind, extending investment tax credits, and reinstating 48C, advanced energy manufacturing tax credits. Decarbonization of port infrastructure operations through electrification or use of hydrogen or other net-zero carbon fuels should be integral to infrastructure modernization.



For the natural gas system to be leveraged as part of the clean energy transition, its emissions must be reduced to meet climate policy targets. Greatly reducing methane emissions deserves full commitment from industry. Hydrogen is a clean energy carrier with multiple applications across every sector of the economy. The infrastructures needed for hydrogen market formation tend to be highly regional. Finding synergies with other infrastructure needs for achieving deep decarbonization could lower the overall development costs of a hydrogen-fueled economy. Federal and State governments should work together to incentivize early mover hydrogen CO2 hubs perhaps through approved multistate regional compacts. Carbon capture utilization and storage will be an essential element in any portfolio of actions for meeting a mid-century net zero goal. Congressional action to encourage repurposing of existing rights-of-way to allow for CO2 pipelines to co-locate with other infrastructures would be beneficial. DOE's carbon safe program could be enhanced and accelerated to advance geologic storage hubs. New business models could encompass creation of third-party carbon management entities, perhaps a CO2 utility model transitioning firms and workers with expertise in managing fossil fuel production and processing.

Energy infrastructures are also increasingly dependent on digital technologies, making broadband access a critical part of modernizing those infrastructures. Smart cities and communities should focus on the digital backbone infrastructure, integrated smart electricity and telecommunications systems linked to Big Data sensors, real-time modeling, and artificial intelligence capabilities.

In concluding, I will note two broad themes. First is unequivocal support for a focus on good jobs as part of any successful climate action and clean energy infrastructure plan. At EFI, we have partnered with the AFL-CIO to form the Labor Energy Partnership. Without attention to jobs, we will face unnecessary headwinds in

reaching our climate goals.

Second, we strongly support a regional focus for solutions to climate change and the associated energy infrastructure needs. A one-size-fits-all approach to policy and financial support will likely impede, not accelerate, progress towards deep decarbonization.

Mr. Chairman, Ranking Member Rodgers, members of the committee, the LIFT America Act is a very important and necessary step towards supporting the infrastructure we need for deep decarbonization of energy systems and for building resilience into our infrastructures in anticipation of increasingly extreme weather patterns. I look forward to your questions.

[The prepared statement of Dr. Moniz follows:]

\*\*\*\*\* COMMITTEE INSERT \*\*\*\*\*

The Chairman. Thank you, Dr. Moniz.

Next, we have Dr. Frieden who is recognized for 5 minutes.

#### **STATEMENT OF TOM FRIEDEN**

Dr. Frieden. Good morning. Thank you so much, Chairman Pallone, Ranking Member Rodgers, distinguished members of the committee. My group, Resolve to Save Lives, partners with countries to prevent 100 million deaths from heart disease and stroke and to make the world safer from epidemics.

It has been more than a century since there has been a pandemic this disruptive, and we have to always remember that every case, hospitalization, and death represents a mother, a father, a neighbor, a colleague, or friend. And it has been unprecedented, but there is really room for optimism. The situation is much better than it was weeks ago. We are vaccinating more than 2 million people a day, and deaths are steadily decreasing as a result, but better doesn't mean good. Case numbers are still high. Declines have stalled or are even increasing in some areas of the country, and the emergence and spread of variant viruses is the wild card and single greatest concern about response to the pandemic. Accelerating vaccinations and other control measures as quickly as possible is the best way to save lives and decrease the risk of dangerous variants.

Now, here is the bottom line in terms of our health, and I can talk to that specifically. We have to fix our broken primary healthcare system. I won't talk more about that in this testimony. We have to fix our broken public health system, and we have to make the world safer because if people are stronger there, we are safer here, safer from epidemics.

And the plain truth is we haven't adequately invested in public health. We spend \$11,000 per person on healthcare, but 40 -- 4-0 -- times less, less than \$300 for public health. We are underfunded, understaffed, poorly coordinated, and not equipped for modern day crises. And the result was avoidable illness and death with the pandemic.

Now, we can do five things to make a difference. Sorry, six things. First, long-term investments. It is very important that you have made a down payment, but a sustainable system cannot rely on one-time funding. It is inevitable there will be future outbreaks. What is not inevitable is that we will continue to be so underprepared. One-time supplemental doesn't answer the question. We need an ongoing support.

Second, use a cross-cutting support. The Centers for Disease Control has more than 160 budget lines. The solution isn't to cut or merge or block grant those lines. The solution is to come up with new lines that are cross cutting that meet the needs at the local level, State level, city level, and global level.

Fourth, strengthen local and State health agencies so they can rapidly respond to outbreaks.

Fifth, address the chasms between Federal and State, and in most States, State and local public health agencies. That will mean greatly expanding CDC programs that embed staff for 2 to 5 years or longer in State, city, and local and global public health departments. That is how we move toward a more unified, effective, efficient system that we should all support.

And, sixth, strengthen global health security. Disease spread anywhere is a risk everywhere.

Last year, I testified about new ways to ensure sustained public health financing. We cannot build sustained infrastructure if our health defense agencies, including CDC, HRSA and others, have to compete with very laudable and important funding priorities:

Head Start, research at NIH and many, many more. We proposed a sustainable funding mechanism for public health infrastructure that would fund lines that are essential for preventing, detecting, and responding to health threats. We call this the Health Defense Operations Budget Designation, or HDO. It would exempt specific Congressionally designated health security infrastructure funding from the annual 302 spending caps. You decide in Congress what those lines are. This would not be a fund. Congress would maintain oversight on all programs, projects, and activities that you in Congress designate as essential to secure our health security. And you can mandate an OMB bypass professional judgment budget so that you can know the unvarnished truth about what is needed to provide sustained and sustainable funding so we can escape this terrible and deadly cycle of panic and neglect because that is what we are in now.

The HDO proposal has strong bipartisan support. 49 leading public health groups have signed on, and I hope that no matter how divided groups are politically, we recognize that we share a common enemy. That enemy is dangerous microbes. We need a sustainable public health infrastructure to defend our country, our people, from health threats, just as we depend on the military to defend us from threats foreign and domestic. We can prevent the next pandemic. This is the moment to do it. Thank you very much.

[The prepared statement of Dr. Frieden follows:]

\*\*\*\*\* COMMITTEE INSERT \*\*\*\*\*

The Chairman. Thank you. Thank you, Dr. Frieden.

Next, we have Mr. O'Rielly. He is recognized for 5 minutes.

#### **STATEMENT OF THE HONORABLE MICHAEL O'RIELLY**

Mr. O'Rielly. Members of the committee, thank you for inviting me to share my views on the communications portions of H.R. 1848, the LIFT America Act, and efforts to expand broadband deployment for all Americans. For clarity, I do not represent any public or private entity on this matter. These are my own views.

The availability of high-speed internet allows users around the world to communicate, learn, work, conduct commerce, and so much more. These benefits have never been so apparent than during the COVID-19 pandemic when Americans families have been isolated and quarantined, driving households to seek and use broadband technologies, whether via cable, fiber, wireless, satellite, or otherwise, to a far greater extent than ever before.

Despite dedicated efforts, there is no dispute that millions of American households are still without access to broadband. Thankfully, this situation is improving. Over the last several decades, the FCC has taken many steps to facilitate broadband deployment and greater access. During my tenure at the agency, in both minority and majority capacities, I helped spearhead efforts to reform and modernize existing programs and initiate key new ones. These programs are working and helping to shrink the unserved household population.

Respectfully, there are a host of issues addressed in H.R. 1848 that deserve more attention and major revisions, but I will focus my comments on the broadband access

provisions because they are so questionable.

Experience has shown that there are two leading ways to extend broadband to the unserved. First is through very targeted, well-thought-out subsidy programs that focus directly on unserved Americans and exclude areas that the private sector is already serving or ready to serve.

Second, barriers to private sector deployment must be reduced or completely eliminated. Again, respectfully, I find the LIFT America Act severely lacking for these reasons.

While I appreciate the interest of some to future proof networks, I disagree with the extensive funding and out-of-touch definition of broadband. For instance, the push for symmetrical speeds at exorbitant levels such as 100 and 100 megabits per second makes little sense. I couldn't figure out where the recommended upload speed came from, so I chatted with some experts in the space. The best anyone can figure out is it came, at least in part, from the Fiber Broadband Association filings.

In a 2021 table, the association assumed a household would have two HD video streams with an upstream requirement of 5 megabits per second, one AR/VR stream with an upstream requirement of 40 megabits per second, three securing monitoring streams with an upstream 2 megabits per second requirement, and a gaming stream with an upstream requirement of 20 megabits per second, for a total of 82. Think about that. Almost half of the upload speed is for AR/VR, which is, at best, extremely raw. And gaming for the average family, a 100 meg upload speed does not reflect reality for now or any time soon. And if I read the bill correctly, 20 percent of 80 billion or 16 billion will go to one gigabit upload. I also don't think the overall broadband can handle 80 billion, and I implore you to consider a level closer to 20 billion.

The consequences of these policies are very significant. Essentially, such a push

for inflated broadband speed will lead to gigantic level of subsidized overbuilding since most of the Nation does not meet the new definition. It wipes away any technology other than fiber and scraps all Federal broadband programs. This would not only be wasteful but discourage private sector investment and employment.

Equally important, government spending on served or scheduled to be served areas with very functional broadband siphons the energy and ability to address those Americans who are truly unserved. If passed, all efforts will shift to easier and richer areas over these unserved areas without 25/3 today. We are so close on this.

On a related topic, the simple fact is that some States and local governments and private company limitations are acting as barriers to greater deployment. I am pleased to see the broader rate of legislative efforts introduced by committee members to address many of these obstacles. The record is clear. Providers can face high fees to utilize existing communications infrastructures, poles, docks, conduits, and the like or conduit and processes to gain rights-of-way and zoning approvals. They also encounter limitations on the placement or expansion of wireless facilities. Yet the bill excludes any attempt to fix this colossal mess. By not addressing this, the committee is effectively making broadband deployment slower and more expensive.

On the positive side, I appreciate the efforts by the committee to continue to exclude State and local government 911 fee diverters, specifically New York, New Jersey, Rhode Island, and Nevada, from receiving any of the new Federal grant moneys identified for modernizing 911 networks.

I stand ready to answer any questions of the committee. Thank you very much.



[The prepared statement of Mr. O'Rielly follows:]

\*\*\*\*\* COMMITTEE INSERT \*\*\*\*\*

The Chairman. Thank you, Mr. Riley -- O'Rielly.

Next, we have Mr. Wheeler. You are recognized for 5 minutes.

#### **STATEMENT OF THE HONORABLE TOM WHEELER**

Mr. Wheeler. Thank you, Mr. Chairman, Ranking Member, members of the committee. It is a privilege to be back before you again.

The LIFT Act is historic, and that is not just hyperbole. It is historic because it recognizes that the almost 100-year-old approach that supported the expansion of electric and telephone service into rural America doesn't work for broadband. The legislation creates a new plan for universal service, a build-it-once plan, that not only will deliver broadband but also will finally stop the drip, drip, drip of billions of dollars constantly being paid out with limited results.

The bill is also historic in that it recognizes that the 40-year-old Reagan administration program to support low-income telephone service is inadequate to support broadband. The Lifeline program was the right idea, but it was built for telephone service, not broadband. It was built for the ability to call 911. But in terms of both costs and capabilities, that is far different from the needed support to go online to go to school, to apply for a job, or to get a COVID shot. So I am not engaging in hyperbole when I say this is a once-in-generation, maybe once-in-a-century, opportunity.

A few quick points that are covered in more detail in my written testimony. Solving the rural broadband problem once and for all requires supporting the buildout the same way we build highways. Pay it once. The 1930s model that subsidized rural telephone and electric service is inadequate for subsidizing broadband. You build a

telephone phone network to get a dial tone. You build an electric network to flip a switch. But building a scalable broadband network is not as simple because of the ever-increasing demands for throughput. Thus far, we have repeatedly subsidized just good enough networks that were soon outdated. This bill focuses on subsidizing future-proof networks. The bill focuses on unserved rural and tribal areas, breaking out of the trap of always having to hope for another round of subsidies just to catch up.

While I was chairman of the FCC, we increased the definition of broadband to 25/3, 25 megabits down, 3 megabits up, and today that is only inadequate. I have included in my written testimony AT&T's forecast of how usage in 2025 will far exceed today's usage. And it is because of that exponentially expanding usage that today 80 percent of Americans can get 1 gigabit service -- 1 gigabit service. Private capital didn't build that capacity to waste money but to meet demand. Public moneys have an even higher obligation to prevent 20 percent of Americans from being trapped in second-class service and to spend taxpayers' dollars as wisely as private capital is spent. To catch up on the other 20 percent of Americans means building with fiber and hybrid fiber coaxial.

I have appeared many times before this committee promoting the wonders of wireless connectivity, and I remain a wireless advocate, but wireless is constrained by the finite nature of spectrum from being a full-fledged substitute for wider broadband. At last week's analyst meeting, AT&T reported that average household data would grow to 1 and a half terabytes by 2025 and that usage of this magnitude won't be supported by mobile networks on frequencies below 6 gigahertz and that the traffic mix will shift towards the uplink, thus favoring fiber and full duplex HFC. If AT&T is spending private capital to build that future, public funds must have an equal discipline to invest for that future.

The LIFT Act also is historic in its funding of broadband subsidies for low-income Americans through the emergency broadband benefit program. The EBB is a breakthrough because it identifies that broadband support should be different from telephone support. The LIFT Act appropriately funds the EBB, but, ultimately, what is necessary is a permanent solution for low-income consumers in rural and urban America just like a permanent solution for rural development. The LIFT Act is also historic because of its pro-competitive initiatives, such as transparency, noncorporate network ownership, and the collection of pricing information.

And, finally, Mr. Chairman, a personal observation. I made it a point in every single appearance I made before this committee as chairman to highlight the need for support to upgrade our Nation's 911 capabilities. This bill does that. This bill will save lives. Thank you.

[The prepared statement of Mr. Wheeler follows:]

\*\*\*\*\* COMMITTEE INSERT \*\*\*\*\*

The Chairman. Thank you, Mr. Wheeler.

And that concludes our witnesses' opening statements. So we are now going to move to members' questions. Each member will have 5 minutes to ask questions of our witnesses, and I am going to start by recognizing myself for 5 minutes.

I want to get to three questions, so I am asking you each to be brief.

First, to Secretary Moniz, I appreciate your hard work at DOE and especially the comprehensive Quadrennial Energy Review reports, which we would always mention. The committee is actually going to hold two hearings on the Texas power crisis this week, and I think that highlights the need for robust grid infrastructure.

So my question is, what are the specific benefits of good modernization, especially as it relates to resiliency and also meeting our climate goals? Does the Texas power crisis present any specific lessons about not prioritizing investments in our Nation's energy infrastructure? You are supposed to answer that in about a minute.

Dr. Moniz. Well, thank you, Mr. Chairman. A few comments on Texas. One of the major lessons, very important, is that, as we do grid modernization, we have to look at the intersections with other infrastructures. In particular, the failed approach to integrate response on the gas side and the electricity side was a huge problem in Texas, so that is important.

Secondly, I would just add more generally, it is the integration of IT and the electricity system on both the high voltage transmission and the distribution system that will be extremely important for new services and for resiliency and reliability. So, actually, I would just link that as well to your broadband initiative, which is very, very important because that will be part of this integration of IT and grid that is so important.

If I may make one quick observation, I have a rural place in southern Colorado,

and we just got fiberoptics, and it is a revolution in what you can do in a rural setting, so I just wanted to make that observation. Thank you, Mr. Chairman.

The Chairman. And Ms. DeGette just put fingers up on that one.

Let me go to Dr. Frieden. I know you really stress that the COVID has, you know, highlighted the chronic underfunding of State and local health departments as well as the Federal public health system. Can you explain why a predictable, stable, and consistent funding for public health infrastructure is so critical? And even though we have provided some funding during CARES Act, that it isn't sufficient for the long-term sustainability of the public health system? Again, you have about a minute.

Dr. Frieden. Let me just give you the experience of someone who has run public health agencies for decades. When you get one-time money, there are certain things you just cannot do. You can't necessarily recruit the best staff because they know that in 2 or 3 or 5 years, they won't have a job. You can't necessarily hold contractors accountable because if they don't do a great job, they think, eh, the money is gone next time. You can't have partnerships with State, local, county, or global partners who can trust you because when the money dries up, you are going to pull the rug out from that partnership, and that is exactly what happened after Ebola.

Congress devoted hundreds of millions of dollars to really important programs, and we worked hard, hard, hard to collaborate, figure out who to work with, and then the money dried up, and dozens of countries had to be defunded. CDC operations stopped, including China. And that might have changed -- we don't know, but it might have changed the trajectory of the pandemic. So we need a consistent approach, not an on-and-off approach.

The Chairman. I agree. Thank you so much.

And then, finally, Chairman Wheeler, I know you said that the bill before us is a

good approach, but if you just would spend a minute telling us again why it is important that we make a really bold investment in broadband right now at this time.

Mr. Wheeler. Well, thank you, Mr. Chairman, but I mean, let's look at we are confronted right now with multiple existential crises, and the fascinating thing is that every single one of those can be attacked using broadband. Broadband helps alleviate those crises.

We are facing a pandemic, but responses could be coordinated, and surely shots -- you have to have broadband to be able to get a shot. We are facing an economic crisis. The new digital economy, the creation of jobs and economic growth, builds on broadband. We are facing a social justice crisis: 10 million school kids can't have distant learning because they don't have broadband; 40 percent of seniors don't have access to broadband. And we are facing a climate crisis, and broadband does help reduce emissions. So my point that I would make in response to your question is here is one tool that can attack four of the major existential crises that we as a Nation are facing today.

The Chairman. Thank you.

Now I am going to go to Mrs. Rodgers, the ranking member, for 5 minutes. I yield to her.

Mrs. Rodgers. Thank you, Mr. Chairman.

Thank you, Mr. O'Rielly. You are the only minority witness today to discuss this massive bill, and I look forward to hearing you on the important topic of broadband deployment.

However, this bill does much further than just wasting billions of taxpayer dollars on an ineffective broadband deployment program. It also contains over \$100 billion in funding to subsidize unreliable renewables over clean baseload power, like natural gas,

nuclear, mandates electric vehicles and electric vehicle infrastructure which will further burden our grid.

That is why I requested another witness, former Deputy Secretary for Energy, Mark Menezes, to testify on the massive expansion of government in the energy sector. Unfortunately, this request was rejected by the majority. We did have two minority witnesses for our last full committee hearing on this bill when it was less than half the cost of the current bill.

Had he been allowed to testify, I would have asked him how the LIFT Act further weakens our grid reliability, increases our dependence on China, and prioritizes urban areas at the expense of rural America. These are important questions that we should have been allowed to explore today.

But the negative effects of this bill and what it would have on our broadband deployment are equally important. The legislation spends over \$100 billion on broadband funding, but I am concerned that it will only widen the digital divide. It increases the minimum speed thresholds for areas to be considered severe so that every part of America will be eligible for this funding.

What does this mean? It means that Americans with zero broadband service today will even move further to the back of the line while ambiguous, quote, anchor institutions get gold-plated service. This bill also directs the FCC to expand the E-Rate program to serve households in addition to schools and libraries, something already funded by other Federal programs.

Mr. O'Rielly, what are some of the real impacts to Americans and the communication landscape in this country if this bill passes?

Mr. O'Rielly. Thank you for the question. You are absolutely right that if this



bill were to pass, the dollars would go to those areas that are easier and more well-to-do than those Americans who don't have broadband today, depending how the count, whether it is 14 million or 20 million Americans don't have broadband.

And I would agree with Tom Wheeler's point that he just made on the benefits of broadband, but all of those things that he highlighted can be done with the current speeds, certainly on the upload side. You know, in terms of getting your pandemic appointment, you can do wirelessly in most instances. So the idea that you need this advanced network that we are talking about in the bill is not necessarily true to his point.

But to yours, and it is very valid, you know, that the anchor institutions will have extensive buildout and serving the community, which will depress the private investment by those communities trying to survive with small providers with very little money. I have dealt with those companies, and I have sat in those kitchens of those Americans without service, and they will be deprived. They will be put at the back of the line and dealt with another day as other things become priority.

Mrs. Rodgers. Thank you. You know, in my district, we have needs in urban Spokane. We also have needs in the rural underserved areas. I represent remote and very difficult to serve counties in eastern Washington. In your opinion, Mr. O'Rielly, will this bill close the digital divide between urban and rural areas?

Mr. O'Rielly. I would think that it would widen it in terms of my previous experience, and I happen to have visited your district or just outside and some of the rural parts. My sister lives there, and so I have seen the territory and the mountainous regions where she lives. And so I believe that this would make it harder to serve those communities that don't have broadband today.

Mrs. Rodgers. So what would be the best way to close the digital divide, once and for all?

Mr. O'Rielly. I would target the money towards those programs that are already operating and focus on those 14 to 20 million Americans or whatever the exact number is. The Commission has been working hard on this. It is taking criticism for the RDOF program, but the heart of the RDOF program will be beneficial in getting to phase two and getting the maps. All the things that are in line to be addressed will be incredibly beneficial and help solve the problem for those that don't have access today.

Mrs. Rodgers. You brought up the important work of the maps and updating the maps. What is the status of getting the maps updated? It has been over a year since the bill was signed into law.

Mr. O'Rielly. In fairness, I don't have a great answer. I have been removed for a number of months from the Commission, and what I did hear from my last Senate hearing, that there was talk of doing the maps in 4 months. And I welcome that because they are absolutely needed to move forward on on at least two programs, but that is if the rest of the bill doesn't wipe off those programs completely.

Mrs. Rodgers. Okay. Thank you, Mr. O'Rielly.

Thank you, Mr. Chairman. I yield back.

The Chairman. Thanks to the ranking member.

Now we are going to move to members. Now, you know, back and forth, Democrat, Republican. I just want to tell everyone, and I know some are going to get not happy with this, but, you know, is based on seniority at the gavel. If you weren't present on camera at the gavel, then you go to the back of the line, okay.

So the first person is -- Ms. Eshoo is recognized for 5 minutes.

Ms. Eshoo. Thank you, Mr. Chairman, and thank you to each one of the witnesses. It is an all-star cast, and it is really wonderful to see each one of you and to not only read your testimony but to hear you make your comments this morning.

I want to go to former Chairman Wheeler for my first. Your colleague, former colleague on the Commission, has offered his critique of the bill. Can you, in a minute, respond to what he has put forward? I think I am hearing in each area essentially people looking in the rearview mirror and thinking they see the future. This bill is all about building out our future in specific areas, whether it is energy, broadband, public health. So can you -- would you just respond for a minute?

Mr. Wheeler. Thank you, Ms. Eshoo.

Ms. Eshoo. Yeah.

Mr. Wheeler. Thank you very much. You know, I have the greatest respect for my former colleague, and we did work together on --

Ms. Eshoo. And I do too. And I do too.

Mr. Wheeler. But, frankly, I don't get this back of line stuff, all right. I mean, the reality is that under the \$80 billion plan, which is based on the study that we did in 2017 as to what would it cost to add fiber to every location in America, okay, under that plan, everybody gets access to the network. There is nobody that gets access to the money. There is nobody in the back of the line. Everybody gets the same opportunity to bring their service up to the kinds of levels that the vast majority of America enjoys.

And I agree entirely with your point that we can't fall into the trap of defining tomorrow in terms of yesterday. And what I was trying to point out in my testimony is that AT&T has told us that is not how they are spending money, and they are telling us they are spending money on fiber. This is just in the analysts meeting last week, and that is the kind of approach that public moneys ought to take as well.

RPTR MARTIN

EDTR ROSEN

[12:00 p.m.]

Ms. Eshoo. Thank you. Thank you very much.

Dr. Frieden, you rolled out six major points relative to public health. Do you see the LIFT Act addressing those?

Dr. Frieden. I think it is really important. The investments are crucial for our future. What is also crucial is to ensure that they are sustained over time.

Ms. Eshoo. Right. Now, we know that somewhat from NIH. You know, we increased, at one point we doubled the funding, but we went through a period of time where funding was not sustained, and it didn't cover the increased costs of living and all of that. So, I agree with you.

Do you think that this bill meets those six points, or is there something missing?

Dr. Frieden. I think what is missing is the long-term sustainability, that addressing is very important. I also think it is very important we look at primary healthcare. I didn't address that in either my written or oral testimony, because I was focused more on public health; but if you look, very frankly, the U.S. does not have primary healthcare at the center of our system. And this is something that I truly do believe, like public health, is a bipartisan issue that everyone can agree on. People should have a family doctor, family clinician, urban and rural.

Ms. Eshoo. They are the entry point to the system, they really are, the primary care.

Secretary Moniz, it is wonderful to see you, hear you, read your testimony, and to all of you, your contributions to our country are really significant.

Have we missed something in this legislation?

Dr. Moniz. I think the infrastructure bill, LIFT, really will make tremendous across-the-board advances. I do think that there is another emphasis that could be stronger in terms of things like the integrated infrastructures, as I mentioned, like large-scale carbon management with hydrogen, for example. If we are going to make net zero and eventually net negative, we will need technologies like carbon dioxide removal from the atmosphere in multiple ways, including terrestrial and mineralization. We need to have our infrastructure minds also focused on these new infrastructures that we will need.

But I think the bill certainly moves across the board on each of those four areas I mentioned at the beginning of my testimony.

Ms. Eshoo. Thank you very, very much to each one of you.

Dr. Moniz. Mr. Chairman, if I may add one other note, Mr. Chairman, besides the -- it is just -- it reinforced what Tom Frieden said. I also serve as the CEO of the Nuclear Threat Initiative, and in 2019, we issued a public health -- a Global Health Security Index. The world was unprepared. The United States was relatively prepared, but the big markdown was lack of access to a robust public health system, just as --

Ms. Eshoo. Thank you. I yield back. Thank you to each one of you.

The Chairman. Thank you.

Next is Dr. Burgess is recognized for 5 minutes.

Mr. Burgess. Thank you, Chairman.

Dr. Frieden, good to see you again. You spent a lot of time in this committee over the last 20 years. It is good to have you back in the committee again.

You know, I don't disagree with many of your points. I do suggest that there is a bit of a disconnect between the bricks and mortar and the actual people who are working

within the bricks and mortar.

The reason I bring this up, I was visiting a hospital down in the southern part of Texas last week, and hit hard by coronavirus, the area. Community spread was just beyond what anyone expected in the early days of the illness, and they got hit pretty hard. Now, they managed, and they are coming through, but their biggest problem today is they can't keep staff.

We have made so much money available through other things that their staff kind of gets pulled away by, oh, contract labor arrangements and emergency department staffing arrangements, such that although they have managed during the crisis, they are really having a tough time with their staffing. And I know that is not the purpose of this bill; but I just ask us to be careful when we are pumping money into systems, it is not always done -- sometimes there are unintended consequences in places where you might not have expected them.

But kind of along those lines, when you look at all of the healthcare infrastructure investment that has been made going back even to the 1940s, how do we make sure that we are putting the proper emphasis on the staffing, the men and women who are actually going to deliver the healthcare rather than just the facilities themselves?

Dr. Frieden. Thank you, Dr. Burgess. That is a great question. I am really delighted to dig into it with.

I am going to make three suggestions, because I think it is a really important issue. We have a shortage of public health staff, 50,000 lines lost in the past 10, 15 years in public health departments. We have a shortage of primary care doctors, because, quite frankly, we don't pay enough for primary care. There is no mystery why there are fewer primary doctors; they make a lot less doctors than other doctors, and it is supply and demand.

So, I think there is three things that we need to do to address the personnel issue.

First, we need a robust Federal program that embeds staff in State, city, and local health departments, thousands of people who will be on the Federal payroll and rotating from cities and States into and back to Atlanta CDC. We started this in my time with something called the Public Health Associate Program. It is a big success story, but it is a drop in the bucket compared to what is needed. 200 people on top year, we would get 4- or 5,000 applications in just a week. So one is CDC embedded staff.

Second, in the healthcare system, we need to embrace team-based care, where every member of the team practices at the top of their license. That will make our healthcare system more efficient and better for people. Right now, we don't do that. Pharmacists, nurses, nurse practitioners, physician assistants, and physicians only should practice at the top of their license. That makes our system much more efficient and the outcomes can be much better.

And, third, we have to address some of the efficiencies. One of them is telemedicine. There is a lot that can be done on telemedicine. Maybe this is one area where the broadband issue and the health issue intersect, because we have seen parts of the country where you can't do telemedicine, because you don't have high-speed internet. I have worked on electronic health record programs, both in central city areas, impoverished central city areas, and in rural areas where you can't do it because you don't have fast enough internet connection, however you define broadband.

And you also have to think about the interstate agreements, and this is an issue that I think, you know, would have both bipartisan support and maybe bipartisan opposition. But, fundamentally, what you have in this country is different States have guilds, and they make it difficult for perfectly qualified practitioners from other States to practice in those States.

Mr. Burgess. I am going to interrupt you there. We call those professional standards.

Dr. Frieden. Sure.

Mr. Burgess. But I understand what you are saying. Look, I just want to ask you another question, and it kind of goes back to when we talked about the telecom side and the issue was made about the private sector. The private sector is moving faster in the telecom side than, say, the public sector, and this is, to some degree, true of public health. We saw it big time with the testing available for coronavirus in those early days.

Frank Pallone always said he wanted to see a national testing strategy. We had that at the CDC and, unfortunately, it failed us. We only got on top of the testing when we embraced what the private sector could bring to the equation as well, and we saw the same story, essentially, in vaccines.

So it is not a silo. We do have to allow the participation and the energy and enthusiasm of the private sector as well.

Dr. Frieden. Total agreement. It is an all-of-the-above need. The CDC provides public health laboratory testing, academic medical centers provide great testing for their centers, and the private sector, well-regulated and supported, provides quality testing for the country.

The Chairman. All right. Thank you.

Thank you, Dr. Burgess.

Next is Mr. Doyle.

Mr. Doyle. Okay. Thank you, Mr. Chairman.

Chairman Wheeler -- and Tom, it is good to see you back here in front of the committee.

Mr. Wheeler. Mr. Chairman.



Mr. Doyle. I just find it amazing that my colleagues on the other side of the aisle seem to be telling their rural constituents that any kind of broadband is better than no broadband at all, and that you should be happy to get yesterday's broadband, because right now you don't have anything. But it seems to me if we are going to keep building networks that are already antiquated, by the time we put them in the ground, we are just setting up people and the networks being built for failure. So I think you have made that point pretty clear.

I want to talk, you know, the LIFT America Act includes billions of dollars for broadband adoption and language to ensure that people have access to affordable service. In communities like my own in Pittsburgh, our main problem isn't deployment, although more competition would be nice; but the big barrier to adoption is the high price of service.

So why is closing the affordability gap more important than ever in this bill?

Mr. Wheeler. Well, thank you very much, Mr. Doyle.

I mean, the fascinating thing is that more people could get broadband but don't get broadband than the number of people who can't get broadband. And why is that?

Mr. Doyle. Can't afford it?

Mr. Wheeler. The principle reason -- Pew Research went out and did a study, and they found the principle reason was price. The average broadband monthly fee is \$70 and up. Benton Foundation, now I guess called the Benton Institute, did a study of low-income Americans of which they said, you know, With all of the other priorities we have in life, we can afford about \$10 a month.

There is the answer to your problem, sir. It is what does it cost versus what is affordable. And it is wonderful what EBB has done to address that affordability problem. The point that I have been making in my prepared, as well as my direct

remarks here, is that we have to find a permanent solution that enables the access to for those that have the wire going past their door, but they can't afford to bring it in.

Mr. Doyle. Right. Chairman Wheeler, my colleagues seem to think that their constituents in rural communities are going to someday be served by 5G; but we both know that if you don't have dense fiber networks, you can't have 5G.

Mr. Wheeler. Right.

Mr. Doyle. So how does the legislation serve the dual purpose of bringing high-speed broadband to the whole country, and enabling rural communities to get access to 5G? And do you see any other way for rural communities to get access to advanced wireless services without this legislation, such as through the deregulatory proposals that my colleagues on the other side of the aisle like to talk about all the time?

Mr. Wheeler. Well, let me answer that in reverse, Mr. Doyle. You cannot deregulate your way to full coverage.

Mr. Doyle. Yes.

Mr. Wheeler. Which is not to say, by the way, that there aren't some legitimate issues, intentions that exist between local and national governments, and those can be resolved through common efforts. The fiber issue is fascinating in its -- you know, everybody thinks about 5G, it is all about the airwaves. One of the reasons that China got out front on 5G is their fiber infrastructure because, in using the spectrum made available for 5G, the physics of that spectrum limit the propagation of the signal. Therefore, you have to have more antennas, and those antennas need to be connected by more fiber. And, so, 5G is a fiber issue as well as a spectrum issue, and if we don't have the fiber backbone, you can have all of the spectrum in the world and you are not going to have an effective service.

Mr. Doyle. Yes. Let me just, last question. Some people on the other side of

the aisle aid that the Federal Government doesn't need to invest in Next Gen 9-1-1 technologies for the systems to be universally deployed. Why is that wrong? And what will we lose if we fail to upgrade these systems in a prompt, organized, systematic fashion?

Mr. Wheeler. Well, Mr. Doyle, we are stuck with the buggy whip era, the horse and buggy era of analog 9-1-1. There are things that you could do on your cell phone that the first responders, who will have the chance to save your life or keep your house from burning down, do not have. They can't get video. They can't get pictures. They can't get precise locations. They can't get all kinds of data.

But the other fact is -- and when I was chairman, I would go out and tour Next Generation 9-1-1 operations, and I found that not only did it increase capabilities, but it lowered costs --

Mr. Doyle. Yes. Thank you.

Mr. Wheeler. -- and investment.

Mr. Doyle. Thank you. Good to see you back, Tom.

Mr. Chairman, I yield back.

The Chairman. Thank you, Mr. Doyle.

Now I will move to Mr. Latta to recognize for 5 minutes.

Mr. Latta. Thank you again, Mr. Chairman.

Commissioner O'Rielly, it is great to see you again, and also, I want to thank you again for coming to my district twice when you were with the FCC.

You know, it was almost exactly a year ago tomorrow that President Trump signed the bipartisan Broadband Data Act into law to update our Nation's broadband availability maps. As you know, these maps aren't completed. The LIFT Act would create several broadband grant loan programs totaling over \$80 billion. The timeframes in this bill

would require the FCC and States put this money out the door likely before the FCC is able to complete its maps.

What are the risks of this \$80 billion being spent before the broadband maps are completed?

Mr. O'Rielly. Well, it looks to be -- your point is exactly on point -- is the timeline will be dollars going out before the maps are done. Now, even if the maps are done in 4 months, you are going to have to restart the maps and restart the data collection based on the new definitions that are put forward.

I don't want to give anyone the impression that everything is copacetic, and that everything is going great or we should remain with the status quo. We still need to solve the broadband issue for those that don't have access, and the maps that you speak of are so critical, it will be completely wiped out, as I see it, by the new bill.

Mr. Latta. Thank you.

Commissioner, follow-up. While there are plenty of questions and concerns about what is in the bill, I am also stunned as to what is not in the bill. Under Republican leadership, we enacted the bipartisan, bicameral RAY BAUM's Act, which included permitting proposals through a bottom-up, regular order process. Republicans also recently introduced 28 bills as part of the boost in broadband connectivity agenda, none of which are also included in the LIFT Act.

Would you discuss the importance of Congress enacting permanent regulatory and permitting reforms to close the digital divide and lower prices for consumers through competition?

Mr. O'Rielly. Absolutely. I think I heard Tom Wheeler agreeing that there were some issues here that could be resolved, and relying on just cooperation in it is not going to get you there. In both the Spectrum Act of 2012 and RAY BAUM's Act, Congress came

together and said, We need to resolve these sticking points that we have identified that are preventing the extension of networks. Multiple layers, whether they be in environmental, whether they be in the permitting process, whether they be Federal ends, now exist and those are being -- you know, we are facing tons of lawsuits. Every time the Commission tried to do something, it is getting sued on this exact point, and those things need to be resolved in order to move forward and get deployment to the hardest corners of America.

Mr. Latta. Thank you.

Mr. O'Rielly. In my opinion, to exclude them is missing a vital opportunity in this bill, whether it is all 28, or even more, things that I would recommend, should be included.

Mr. Latta. Thank you very much. Thank you.

Secretary Moniz, it is good to see you before the committee again.

And the court authorized \$22.5 billion for State and local governments to support projects that encourage the use of EVs. In comparison, this bill would authorize \$375 million to expand development of alternative fuel infrastructure and the expanded use of alternative fuel vehicles.

With the billions of dollars of investments that this bill would make in EVs and electric vehicle infrastructure, do you think automobile manufacturers would be more likely or less likely to invest in vehicles that use other sources of fuel, such as biodiesel, natural gas, ethanol, hydrogen, or propane?

Dr. Moniz. Well, thank you for the question, Mr. Latta, and it is a pleasure to be back with you and the committee.

Look, in my view, the reality is that we have seen the auto companies make their declarations; GM with their commitment to all electric by 2035; Ford not to be outdone;

stratospheric valuations for Tesla. So, I think there is no doubt that electric vehicles are going to be a very central part of our path forward.

Now, there still may be alternative fuels as well in there, particularly with plug-in hybrids, for example, but the reality is, I see the EV infrastructure being invested in early as something that enables our companies, our manufacturers to go where they want to go. They have made it very, very clear. As well, what we are seeing is an enormous increase in the battery manufacturing industry in the United States. We have just heard multiple commitments made, again, Ford and GM driving much of the construction.

So I think the -- I do support very strongly the EV infrastructure charging. I do think there are many challenges that have to be met, particularly with regard to social equity issues, because, clearly, the architecture for urban environments, for suburban environments, and for rural environments, are going to look very, very different. So we have got to think it through; but that is what will allow our companies, our manufacturing companies, to follow their commitments that they have made as far as EVs critical to our future.

Mr. Latta. Thank you very much.

Mr. Chairman, my time has expired, and I yield back.

The Chairman. Thank you, Mr. Latta.

Next, we go to Ms. Schakowsky.

Ms. Schakowsky. Thank you. Thank you, Mr. Chairman.

I want to start by just saying we have learned a heck of a lot about the need for a more robust public health infrastructure during this COVID time.

I wanted to particularly emphasize now and focus on community health centers, several of which I have, many of which I have in my district, and they are a real godsend.

So, Dr. Frieden, I am so happy to see you again. I want to thank you for all of

your past service and for being with us today.

As you are aware, community health centers play a critical role in providing care to vulnerable populations who are predominantly lower income, people of color. And Black and Brown and indigenous and immigrants in immigrant communities across our country share a disproportionate burden of the illnesses and death caused by COVID and other diseases. In the response and aftermath of the pandemic, we must prioritize addressing these disparities that are so chronic in our society.

So here is my question: We know that COVID led to more severe consequences in the communities that I described. They have higher rates of certain chronic illnesses. What does the correlation between minority communities and a higher burden of COVID tell us about what we have to do about our public health infrastructure?

Dr. Frieden.

Dr. Frieden. Thank you so much, and it is nice to see you and your colleagues again, Congresswoman.

I think, first, we have to look at the cause, three things: One, in the disadvantaged, underrepresented communities, you see more exposure, more underlying health problems, and less access to care and vaccination. So Black and Latinx Americans are twice as likely to die from COVID and half as likely to get vaccinated. And that is not because of resistance or reluctance. That is because of a lack of access and appropriate outreach to the communities.

So what do we need to do differently? We need a much stronger public health and primary care system. We need sustained investments. And when it comes to primary healthcare, I am big fan of community health centers. My first job was working for a community health center before I went to medical school.

But I have to say, that they need to be fully supported, but they are only going to

address 10 or 15 percent of the population need, and, therefore, we really do need to fix the way we fund healthcare, so that we have an ongoing support for primary care. Primary care has to be central to our healthcare system. That includes community health centers and, as the bill has, Indian health services and others, but it also means looking at how we make sure that doctors, nurses, pharmacists, physician assistants, and others can play a critical role in quarterbacking and improving care.

It is quite striking. It is not just about the minority communities. The U.S., as a whole, lives on average about 4 years less. In the time we are alive, we live with more disability than other countries in Europe and elsewhere and that is because we [inaudible] meet primary care.

Ms. Schakowsky. That is an unacceptable number that you just gave us.

I wanted to connect, though, what we are talking about to what people commonly think about infrastructure. A recent survey of health centers across the country found that capital project investment through 2025 would cost about \$17.5 billion. The top areas of focus for current planning has to do with medicine, medication, mental health, et cetera.

So how do we link this to infrastructure? What are the infrastructure issues that are going to address the problems that we are facing?

Dr. Frieden. So, briefly, one of them is data. Data systems need to be updated and maintained over time. Another is training of staff. So we need to upgrade the number of people. A third is actual facilities. Four, primary healthcare, community health centers and others. In addition, we need to ensure that we are strengthening not just the people and not just the informatics, but also the broader systems that collect information, surveillance or monitoring systems, so we can track diseases and track the effectiveness of primary care programs, because we are not getting the kind of health



value for our health dollars that we need.

So we need data systems. We need information systems that are broader than data systems, and we need the people and the places to do it right.

Ms. Schakowsky. Thank you so much, and I look forward to addressing some of these in this bill that we are discussing today.

Thank you. Good to see you, Tom. Bye.

The Chairman. Thank you.

Next, we go to Mr. Guthrie.

Mr. Guthrie. Thanks, Mr. Chair, I appreciate the recognition.

To Dr. Frieden, according to the American Journal of Managed Care, hospital acquisitions of physician practices increased from 35,700 hospital and practices in 2012 to 80,000 in 2018.

Further, according to a March 2021 Medical Payment Advisory Commission report, hospital access to capital remains strong due to years of relatively high pay or profit margins. The report states that access to capital, and I quote, "is reflected in significant hospital construction, in strong bond offerings at relatively low interest rates."

So my question is, given that hospitals and facilities have access to adequate access to capital, why should Congress authorize Federal funding for capital improvements?

Dr. Frieden. I think what we see is in the hospital sector, you have the haves and have nots. And in rural hospitals, and places that are dealing with the kind of patient population that gives lucrative reimbursement, you have real needs. But the bigger problem, I want to come back to, is primary healthcare. Quite frankly, all over the world, including in the U.S., we have an imbalance where the relative funding of hospitals versus primary care is not what will maximize health, and we need that sustained

investment in primary healthcare to keep people out of hospitals, and let hospitals focus on the conditions that absolutely need hospital care. But if we don't invest in primary healthcare, we are never going to have enough money for the hospitals that our aging population needs.

And, remember, our population isn't just aging. We also have a high rate of obesity that increases the need for hospitalizations. We continue to have a high rate of tobacco use, which increases the need for hospitalizations. We have unhealthy nutrition and lack of physical activity so that people aren't active. All of those things result in more expensive care with not as good healthcare outcomes.

Mr. Guthrie. Okay. Thank you.

And I will ask you a second question. In section 40004 of the LIFT Act, it authorizes \$4.5 billion to support the modernization and improvement of testing in clinical labs. Would you agree that instead of creating a brand new program, Congress should work with the CDC on expanding and improving the epidemiology and laboratory capacity for infectious diseases cooperative agreements?

Dr. Frieden. So I do I think the ELC, as it is called, the epidemiology and laboratory capacity, that is one of the best grant programs of CDC. It works very effectively. It has been used in a series of emergencies, and we need to build on that program over time.

I do think that laboratories tend to be the poor relation in public health. They tend to be neglected. And, quite frankly, CDC didn't get it right with the laboratory work this time around, and that didn't happen before, and we still don't have a clear public accounting of what went wrong. So I think that is needed.

During my time at CDC, when a pandemic hit, H1N1, we had a lab test approved within days, it was 1 million tests were distributed. But as Dr. Burgess indicated, it is not

just about the public health laboratory system. You really have three-legged stool: You have the public health laboratory system. That needs to be much stronger, including genomics. Then you have academic medical centers that make their own tests. That is largely a FDA regulation issue of allowing them to do that. And then, commercial laboratories, which need to be given standards because, quite frankly, during COVID, we spent, as a country, hundreds of millions of dollars for tests that came back so late that were virtually useless. And we need to tell the commercial sector, you are great, you can move faster, and at scale in a way that other sectors can't, but you have to meet these requirements for performance, for example, results in 24 hours.

So I think there are multiple areas. But remember that laboratories do tend to be the poor relation and neglected. It took us a long time to get even a little bit of money for things like genomic surveillance at CDC, and strengthening of laboratories.

Mr. Guthrie. Thank you. Thank you very much. I appreciate the answers to those questions.

I want to move to Mr. O'Rielly. During your time at the FCC, Open RAN is something that you worked on, as well as I worked on with several of my colleagues last Congress. Can you tell us about the benefits of adopting to a software-centric virtualized network can bring to other telecommunication networks?

Mr. O'Rielly. Absolutely. Simply put, Open RAN can provide two things: One, it can increase the security of the network, plugging in a critical new piece of equipment by software rather than requiring an end-to-end solution through hardware. And, two, it can reduce the cost for wireless providers that are trying to deploy these networks as soon as possible and get to the technology certainly at the edges if they can.

So Open RAN has great promise. I want to be careful, though, there are some concerns, and I have been mindful of this, technology neutrality in terms of vendor

mandates. We want to make sure we do it and don't cause harm by doing so. But Open RAN has quite the promise.

Mr. Guthrie. Thank you. I yield back.

The Chairman. Thank you.

We are going to go now to Mr. Butterfield.

Mr. Butterfield. Thank you very much, Mr. Chairman. Let me say good morning and good afternoon to my colleagues. It is good to see all of you today. And thank you to you, Mr. Chairman, for your leadership. Thank you for this very, very important and enlightening hearing today. And last, but not least, thank you to the witnesses. It is good to see all of you again.

You know, Mr. Chairman, as you have heard me say over the 14 years that I have been on this committee, I represent a rural district in eastern North Carolina where some communities still today, 2021, lack access to high-speed broadband that has become so necessary for us to participate in the modern world, especially since we have had the pandemic.

Qualified broadband providers are being discouraged. They are being discouraged from participating in FCC programs that could expand broadband access into these underserved and unserved communities. These communities are -- they are outdated. There are inconsistent eligible telecommunication carrier requirements that we have to deal with. The ETC requirements are out of date, and they need our attention. In addition to expanding access, removing the ETC designation will spur competition, in my opinion, improve both efficiency and quality of service for consumers.

So last Congress, I introduced the Expanding Opportunities for Broadband Deployment Act, a bill that would retire this unnecessary restriction so that providers will no longer have to wait for State-by-State approval to participate in the FCC's lifeline and

broadband deployment program.

Similarly, the funds included in the bill before us today for broadband buildout across the country do not require an ETC designation for their use, and so, I will introduce, Mr. Chairman, reintroduce this bill very soon, and I intend to work with my colleagues on this committee, on both sides of the aisle, toward passage. I am pleased that the ETC requirement is not included in the LIFT America Act, because retiring the ETC designation requirement is critical. It is so critical to reducing variance to broadband deployment.

So in the little time that I have left, Mr. Chairman, I am going to start with Tom Wheeler. It is good to see you, Mr. Chairman, again. I remember the first time you met with a small group when I came on to this committee. At the end of the meeting, I approached you and told you that you were one of the few witnesses that we had that I understood 100 percent of what you said.

So often it is above my head and sometimes I can't get my hands around it, but you have such clarity.

Chairman Wheeler, I understand that you tried to address the ETC issue in the lifeline program and, Commissioner O'Rielly, I understand that you have written about this as a barrier.

Could each of you, starting with Mr. Wheeler, talk a little bit about that?

Mr. Wheeler. Mr. Butterfield, thank you. It is great to see you. And I am reminded of that quote of Robert Browning, to have great poets, there must be great audiences.

Mr. Butterfield. Yes.

Mr. Wheeler. But I think that this is a situation where Commissioner O'Rielly and I could be in violent agreement that ETC doesn't make any sense anymore. And it is a

legacy of the fact that we are dealing with a telephone program that wasn't designed for broadband.

You are right, I tried to do something about it when I was chairman. Unfortunately, I couldn't get a majority of the votes to do it. But it makes no sense to continue ETC as one of the tests.

So, Mike, take it away.

Mr. Butterfield. Yes, Mr. O'Rielly take it away, please.

Mr. O'Rielly. Thank you, Tom, and I really appreciate your leadership on this issue. I completely supported your bill last go-around and will do so in this one.

Tom is right, I wasn't able to support his effort, and it wasn't because I disagreed on policy, it was with some legal matters, and that is why Congress is so actively inured, so your engagement is so critical on this point. The ETC designation no longer makes any sense, if it ever did, and it is preventing providers from participating in FCC programs, and building out and extending networks in nearby areas because it crosses street lines in some instances, and that burden isn't worth the cost they would have to go through. So they don't participate and it raises the cost.

So, I think it is absolutely something that should be corrected going forward. And we have an example. The EBB program, that I am in favor of, and Tom has spoken about, doesn't include this, and you mentioned the LIFT Act, which I have a lot of problems with, but here it is not included as well. And you will run into some problems with State regulators on this issue, but it absolutely has to be done to get rid of the ETC designation.

Mr. Butterfield. Thank you for your clarity. You are so enlightening, and for those of you, my colleagues that don't fully understand this issue, I know you can't get your hands around everything that we talk about, but if this is something that you have

an interest in, we would be delighted to talk with you about it, because it is a big deal and it makes sense.

Thank you so much. I yield back.

The Chairman. Thank you.

Next, we go to Mr. McKinley.

Mr. McKinley. Thank you, Mr. Chairman.

And I direct my comments to Dr. Moniz. I am looking for you again on this -- someplace on here. There you go.

Listen, I have missed having you testify before us for the last few years. I always enjoyed your insight into it. Listen, I have got to say, I agree with you not including carbon capture in this bill does not make sense. It really doesn't. But since this bill -- if I could direct my questions to you, since this bill begins the transition of the Federal fleet to electric vehicles by 2025, beginning of 2025, and hybrid fuels could be banned by 2050 if President Biden has his way.

So, let's talk a little bit about the Federal fleet. It is about 650,000 vehicles. And according to the Journal of Power Sources and testimony we had a few weeks ago from Mark Mills of the Manhattan Institute, to acquire the critical minerals of lithium, cobalt, nickel, graphite, copper, we will need, manufacturers will need to excavate 250 tons of earth, 250 tons of earth, to get enough materials just for one battery.

So just imagine what that would be over 650,000 vehicles. I did some math on that, and so, if we don't have available biofuels or hydrogen as an alternative, and we have to go to electric vehicles, we are talking about a dump truck filled with dirt, just for the Federal fleet, to go around the world, a convoy around the world twice, just to get the materials we need to build the batteries for our Federal fleet.

So I am just wondering about, since the other Nations are going to say we are not

doing this in our backyard, we are getting it out of Chile and Colombia and other Nations all around the world, how long are they going to tolerate us taking all of their raw materials and tearing up their hillsides? How long? Do you think they will continue to think that is okay?

Dr. Moniz. Well, Mr. McKinley -- and it is good to see you again, indeed. It is a very important issue, this question of critical minerals, and metals, and the whole supply chain. There is no doubt that we need to reevaluate this. I mentioned in my remarks that we have to look at environmentally improved mining in the United States because the critical minerals will probably go up by a factor of 10 to 100 in many cases, except that innovation will also come in. So on lithium, for example --

Mr. McKinley. I would like to reclaim my time, if I could, Doctor. And I would like to get back -- you and I could have more of a conversation. I have got to slip in two more quick questions, one to you and one to O'Rielly.

So let's go to the grid for a minute. The Boston Consulting Group said if 15 percent of the vehicles are electric vehicles by 2030, that we will have to have a 25 percent increase in our electric generating capacity. So once -- if this mission is ultimately to get to 100 percent of electric vehicles, that means we are going to have to have 165 percent more power generated in America than we currently have today. I just -- I am wondering, are we ever going to be ready for something like that?

So, in deference with the time on it, so if I could switch over to O'Rielly on this --

Dr. Moniz. Could I just note, Mr. McKinley? I don't understand those numbers. I don't agree with them, but we can discuss later.

Mr. McKinley. From one engineer to a scientist, you might be able to keep up. You know, we will see.

Dr. Moniz. Right.



Mr. McKinley. Okay. Let's go to O'Rielly for a minute, please.

So I want to switch to the jobs impact. I want to understand the refineries, because if the purpose of this ultimate legislation that the administration is pushing by 2050 to ban all fossil fuel emissions, and fossil fuels, what will happen to the jobs and the refinery-driven economies of Texas, Louisiana, Oklahoma, and elsewhere? What will happen to those? What will happen to those jobs if we can't use gasoline or diesel fuel?

Mr. O'Rielly.

Mr. O'Rielly. Okay. I appreciate your question. I can speculate and would agree with your --

Mr. McKinley. I know it is not your field.

Mr. O'Rielly. It is not my field, yes.

Mr. McKinley. You are an FCC guy. If we do this, what happens?

Mr. O'Rielly. They are going to evaporate.

Mr. McKinley. Thank you.

Mr. O'Rielly. They are actually going to evaporate and not going to be addressing critical States that are so important.

Mr. McKinley. That is why I want people to just slow down sometimes, and think about the consequences of this. I know we are ultimately going to get to there, but to do this so quickly as we are doing right now, I don't know that we have thought about the consequences with it. So thank you very much.

And, Frank, I yield back to my chairman the balance of whatever time I have got left, Frank.

The Chairman. Thank you.

So next, we have Ms. Matsui.

Ms. Matsui. Thank you very much, Mr. Chairman. And I want to thank all of

the witnesses who are here today, many of whom I have worked with in the past. It is great to see you.

The COVID-19 pandemic has only reinforced the value of and growing demand for telehealth. This committee has made funding available to support telehealth through the FCC's telehealth program, but because of overwhelming demand, just 539 of the more than 5,000 applications have been funded. Clearly, the want and need for us to properly equip our health systems is there and providers broadly recognize the 21st century healthcare is so much more than just the four walls of a clinic or hospital.

Dr. Frieden and Chairman Wheeler, do you both agree that we should prioritize digital infrastructure alongside physical infrastructure within our healthcare system? And I would like comments from both, even though I have a lot more questions to ask.

Dr. Frieden. Well, if you have a lot more questions, I will keep my answer simple. Yes. We need a much stronger, more robust digital infrastructure, and we definitely see gaps in rural areas, definitely see gaps in some central city areas.

Ms. Matsui. All right. Thank you.

Mr. Wheeler. And I will be equally short. The answer is yes. And one of the good things that is in the LIFT Act is prioritizing into central locations in a community to make sure that they get connectivity such as hospitals.

Ms. Matsui. Sure.

Mr. Wheeler. And that also, by the way, opens up the ability to interconnect and get beyond there to the rest of the community.

Ms. Matsui. All right. Thank you very much.

Climate change is reshaping our country's needs. My district faces both severe droughts and devastating flooding requiring --

[Audio interruption from another Member.]

Ms. Matsui. Okay. Do I have my time here?

In Sacramento, I have been working with the CITY and Regional Water Authority on the Sacramento water bank, which will increase the region's storage and recovery capacities by more than 50 percent. Similarly, the flood agency is proactively looking at upstream reservoir modifications to increase capacity for flood protection during a severe weather event, or providing water for groundwater storage.

Secretary Moniz, beyond hydropower, how do you believe we can effectively use our waterways, particularly in dry western States, to both minimize flood risk while maximizing water use for our communities?

Dr. Moniz. Well, thank you, Ms. Matsui, and, again, good to see you back here at the committee.

First of all, I might just add that broadly, the need to address our whole dam system in the United States is absolutely critical, and there have been some very encouraging activities jointly between those worried about emissions for climate, those worried about conservation, about preserving ecosystems.

So I think that this committee moving forward on those issues of water infrastructure would be very important. And, in fact, of course, as you know, we have extremes that will be getting worse from drought to flood and a lot of them providing public safety issues. We saw the disasters, for example, in Michigan, in terms of some dam failures and tragic consequences.

So, in other parts of the country, I might add, the inland waterway infrastructure is also badly in need of being addressed for energy and other commodities. So I would just reinforce what you have indicated, that we need a comprehensive look. And it must be regional because the regional needs are going to be very different in, let's say, the Sacramento water basin and other parts of the country.

Ms. Matsui. Thank you, Dr. Moniz.

I joined a bipartisan group of lawmakers who meet with the President to discuss important issues in supply chain security, including the strategically important semiconductor industry. This meeting built on the progress we had in Congress by including the CHIPS Act in the NDAA and to support American semiconductor manufacturing and R&D.

Chairman Wheeler, can you discuss the role of a reliable semiconductor supply chain plays for innovation? And you have got 15 seconds to say that

Mr. Wheeler. Without it, it does not compute, right. The 21st century and modern telecommunications and the benefits of what that delivers has been built on Moore's law, the constant improvement of semiconductors. If we have a problem with semiconductors, we have a problem writ large.

Ms. Matsui. Right. Thank you very much, and I want to thank all of the witnesses.

I yield back.

Dr. Moniz. Mr. Chairman, may I just add a note that the SolarWinds cyber event also pointed out the importance of supply chain security for our infrastructure.

Ms. Matsui. Right. Thank you.

The Chairman. Thank you. Thank you, both.

So next we have Mr. Griffith, Morgan Griffith.

Mr. Griffith. Thank you very much. I appreciate it, Mr. Chairman.

Mr. O'Rielly, I am going to ask you a couple of questions, and I appreciate all that you have done to narrow the digital divide and advocate for the truly unserved out there in our rural communities. Although hearing some of the discussion today, I am reminded that sometimes people in my district feel like they are Charlie Brown and the

Federal Government is Lucy. We keep promising and we keep promising and we keep promising, that we are going to do something on broadband, and we keep pulling the football away. And I think this bill does that too, although I think it is well intentioned.

And the problem is, as you have pointed out, trying to get 100/100 before we get big chunks of my district to 25/3, it is going to open up the areas where some -- a lot of companies are going to put the money into servicing areas that already have some broadband. We don't have any in many parts of my district. In fact, as it would be timely, The Roanoke Times ran an article this weekend by Amy Friedenberger on March 20th -- that would be Saturday -- "Can Starlink Solve Virginia's Broadband Challenges?" And it talks about a Mr. Markham, who has called Verizon every couple of years about getting internet cable to his household in Kohala in Wise County, Virginia, and the answer is always the same: They will get it there for \$23,000. That is one household. That is not a cul-de-sac. That is not a community. That is one household. And, obviously, it is too expensive for Mr. Markham's family to do that.

The Governor's team, Governor Ralph Northam's Chief Broadband Advisor, Evan Feinman, says that, you know, there is a lot of things that we can be doing. They are a little uneasy about doing the satellites, but there are 300,000 locations in Virginia, mostly in southwest -- that would be mostly my district -- and south side, part of which I represent, and then the tidewater region that don't have broadband access. And the Commonwealth has been pouring dollars, more and more dollars all along.

And another constituent, Mr. Short, lives about 600 feet away from relatives who have broadband through Comcast. Now, I am not sure it is 100/100, but he has got something. But for him to get it to his house 600 feet away, it is just too expensive.

I fear that we are going to eliminate services like Starlink or their competitors down the road, as they come on board, from being able to provide in some of these rural

areas, and right now it looks like they might be -- when they get all of their satellites up, they might be able to service a big chunk of the territory. But it doesn't look like they are going to be able to do it necessarily in a cost-effective means. But I am not sure they get to the 100/100.

Do you know about that? And do you think, as you said earlier, or do you believe that this is part of why it is going to intensify, or widen the divide between those who have broadband and those who don't?

Mr. O'Rielly. You are absolutely right on the point that parts of Virginia do not have broadband. I visited them myself. I have represented different members over my timeframe in my career.

The cost of construction to areas such as that you represent are higher than they are to other places. So the dollars, if the LIFT Act were to be enacted, would shift to other places. So we would not deal with the communities that you represent. The dollars would go elsewhere. It doesn't mean that eventually they couldn't get to your point, but every time we kind of get to that point to deal with the absolute people who have nothing today, we move the goalpost. We did it when we were at 4/1. We did it when we were at 10/1. We did it when we were at 25/3. And every time we get close, we get into the population that has absolutely nothing. And I have sat in those kitchens and talked to the people. You represent a lot of those folks.

That is absolutely a big, big problem, and that is why my point was get everybody to 25/3 before you figure out how to shift the agenda.

But your points in term of satellite, I am a big fan of satellite. It has got a critique, and a lot of people disagree with the Satellite, and I like Starlink and what they are able to do. In terms of 100/100, I can't promise you any speeds. I don't think they would promise you any speeds. But I know when I did a demo, we got 150 down. We

didn't get 150 going up. The upload speed is what I've been criticizing from the LIFT Act. I don't think it matches up with reality. You don't need synchron -- [inaudible]

Mr. Griffith. All right. Quickly, because my time is running out, for folks back home who might think 25/3 is nothing, what can you do with 25/3?

Mr. O'Rielly. You can do everything that is being done today under the pandemic almost everywhere. I was criticized for my speeds in the Senate hearing, and I will tell you, I came back and tested my speeds. I am at 30. I am 30 in my household, and I can operate my business, my wife's operating her work. There is a lot of things that can be done with 25/3 --

Mr. Griffith. So we can watch Netflix, and we can do homework, and we can do telemedicine at 25/3.

Mr. O'Rielly. Absolutely.

Mr. Griffith. I appreciate it very much.

Mr. Chairman, I yield back.

The Chairman. Thank you.

Next is Mr. Sarbanes is recognized for 5 minutes.

Mr. Sarbanes. Thanks very much. I appreciate the hearing, and I am a very proud sponsor of the LIFT America Act. This is a terrific bill, represents a lot of collaboration by many members and, obviously, experts who have helped to provide perspective on it.

The average American, I think when you say infrastructure to them, they tend to think of highways and bridges and tunnels. We know it is much more than that. We have talked about public health infrastructure. We have talked about broadband. We know we have to lift up the water infrastructure across the country, the electric grid, et cetera. So, infrastructure means many, many different things, and the LIFT America Act

is trying to address those.

Secretary Moniz, I wanted to talk to you today a little bit about the electric grid. It is an area that I have had a keen interest in when it comes to this discussion about upgrading our infrastructure. We know there is challenges. There is growing demand. There is the need for reliability.

Of course, we saw what happened in Texas recently, which was a commentary on lack of reliability under some very difficult conditions. All of that shows that we have got to adapt our grid to 21st century requirements.

Could you talk a little bit about how modernizing the grid is a smart investment, both from the standpoint of helping to address carbon emissions as well as just promoting reliability and affordability?

Dr. Moniz. Yes. Thank you, Mr. Sarbanes.

First of all, I think we all recognize, and it is really always important to remember, how the electricity infrastructure is like the Uber infrastructure. We saw that with Texas when electricity went down. The gas supply was suffering. There were some poor policy choices, clearly. But the interplay of infrastructures means electricity must be reliable and resilient, especially as its role in society grows with the electrification of other sectors.

As I have said before, the integration with IT being able to make near real-time measurements in the grid will both stabilize it, and provide, on the distribution side, new services that entrepreneurs can take advantage of.

So it will help with efficiency. It will help with demand management, which is a big part of reliability and resilience. So it will help with emissions, and it will help with the economy. It also will be a big job driver. The electricity sector is already the home to about almost 1 million workers.



Mr. Sarbanes. Thanks very much.

And I am thrilled that we have included in the LIFT America Act the 21st Century Power Grid Act, which I was privileged to work on over the last couple of Congresses. That would empower the Department of Energy to support projects and improve grid performance, security resiliency, and so forth. We have got to make that kind of investment if we are going to meet these 21st century challenges.

Let me talk briefly about green buildings in the time I have left. And, again, Secretary Moniz, you in the last appearance before this committee, I believe, talked about investing in Federal buildings to reduce emissions, create jobs at a time when the pandemic had severely impacted our economy. Of course, that continues to happen.

Since then I have joined with my colleague on the committee, Congressman Welch. We have introduced the Federal Buildings Clean Job Act, which would invest funds and leverage private funds to make Federal buildings more energy efficient, resilient, reduce green gases and, as you were indicating in the other context, create a lot of very good jobs, creating construction, and so forth.

Secretary Moniz, with the substantial building portfolio the Federal Government has, how important is it do you think that the Federal Government get into the business of building efficiency and resiliency projects in its own buildings? And is the Department of Energy in a position to assist in this effort through programs like the Federal Energy Management Program?

Dr. Moniz. Yes. Thank you. I think it is a very, very important initiative.

I will note that when I was Secretary, we pushed very hard on energy efficiency standards, saved consumers over a half a trillion dollars up to 2030. There is no reason why the Federal Government shouldn't enjoy those same savings on its energy bills, and, so, I think advancing that is absolutely critical.

And I would just add, if I may, I strongly support the LIFT Act's focus on residential. I strongly support your focus on Federal buildings, and I would urge going further to have energy efficiency programs that support State, county, and local public buildings as well, an enormous opportunity, and, often, public budgets, especially in rural America, otherwise don't support those money-saving upgrades, both emissions and money-saving upgrades.

Thank you.

RPTR MERTENS

EDTR HUMKE

[12:57 p.m.]

Mr. Sarbanes. That is a terrific suggestion. I yield back. Thank you.

The Chairman. Thank you.

Next we go to Mr. Bilirakis. Gus?

Mr. Bilirakis. Two Greeks back to back. It is Greek Independence Day on March 25th, Mr. Speaker. So thank you Mr. Speaker.

The Chairman. Amen.

Mr. Bilirakis. Appreciate it. Thanks for giving us the opportunity.

And in regards to broadband, this committee, the FCC and the private industry spent years and tens of millions of dollars, as you know, on broadband so we could get funds to the truly underserved and stop wasting by needlessly overbuilding our areas. The LIFT Act ignores all of that work, in my opinion. Rather, it allocates upwards of \$100 billion to deployments that unnecessarily move the goal posts and target it to areas that are already served.

And I know that that my good friend from Virginia mentioned this, and I know there are a lot of people that face this issue, the same issue. I am sure many of our colleagues, as I said, in these areas are livid. They will never see broadband if there are more populated areas eligible for funding. And this legislation will only widen that digital divide. And I recommend that we, and I strongly suggest that we address this issue, Mr. Chairman. Meanwhile, my constituents will continue to pay for the failed results.

A better impact on underserved areas is removing regulations that prevent

effective market participation.

Consistent requirements will help small businesses and startups compete and grow in these areas. And then we can leave the funding -- again, we don't want our constituents paying, and we need to leave the funding to the truly unserved areas, and I really feel like everyone agrees with that. Everyone could get the help they need, all of our constituents.

So my question is to Mr. O'Rielly related to regulatory burdens and past experiences. What are the lessons learned from the FCC's RDOF auction as the broad participation by providers means more consumers will be served with far less funding? What Can be learned from that experience as we prepare for the second round of RDOF?

Mr. O'Rielly.

Mr. O'Rielly. Yeah. I appreciate your question. I think you set it up quite nicely. You are absolutely right that the RDOF had wide participation, and we had a number different of technologies that were able to be part of it. And if you look at what, you know, is contemplated in this bill, I think I have -- and other people have said it, it is just about fiber and every other technology pretty much gets ignored by moving the goalpost, as you indicated, and so I think that is incredibly problematic.

As we get to RDOF phase 2, that really comes down to having the maps done, and hopefully, the maps -- as I understand it, they are going to be done relatively quickly. But if you move the goalpost on the first part, then the maps unravel, and you have got to restart the data collection or you have got to try and figure out how to recontain that and repopulate it for different purposes, and you restart that timeframe.

So I disagree with doing that because then you just -- you don't get to RDOF phase 2. You don't get to those areas. And these are the areas, not the hardest to reach, not in terms of we know there is absolutely no one in a block. These are the places where

they are partially served blocks.

There is a house or a location or in many locations, but part of the block is not being served, and how do we deal with that? And that is having accurate maps, and it is not by moving the goalposts.

Mr. Bilirakis. Thank you.

I want to yield the rest of my time to Mr. Griffith if he would -- Morgan, would you accept that? Okay.

Well, thank you, Mr. Chairman. I hope that in the end, this is a bipartisan bill because as you know, we are famous for bipartisanship in this committee. And for it to become law, of course, we need the other chamber as well. So thank you very much for the input. I yield the rest of my time to Mr. Griffith.

Mr. Griffith. Thank you very much. I appreciate it, Gus.

Mr. Moniz, you and I have discussed in the past the importance of the U.S. maintaining its leadership in clean fossil fuel technologies because coal will be around globally for decades. As you note in your testimony, carbon capture utilization and sequestration will play an important role in the future. How important will permitting reforms be in getting CCUS projects off the ground?

Dr. Moniz. Yes. Thank you. There is no question that I remain convinced, and many others like the International Energy Agency, that carbon capture and sequestration will need to be a central technology complementing renewables and nuclear and others.

The permitting issue. You put your finger on one of the major issues. A CCS project can be very complex in terms of its permitting requirements at Federal, State, and often local levels as well. So what we need is at the Federal and at the State levels, ways of streamlining, not short cutting, but streamlining the permission process. We looked very carefully in California as one example, and we found that there were multiple

permitting requirements that were not being pulled together coherently, and that was a major obstacle to getting projects done. So a very, very important issue.

Mr. Griffith. I yield back to Mr. Bilirakis.

The Chairman. Thank you.

Mr. McNerney is next.

Mr. McNerney. Well, I thank the chairman. I thank the witnesses. It is great to hear you all and see you all again.

Mr. Wheeler, my Republican colleagues tend to focus on deregulating the infrastructure signing process and taking away the local authority, believing that this is the silver bullet that will bring broadband to everybody in the country.

Please, with a yes or no, Mr. Wheeler, will this approach get us to a universal high speed broadband access with the option to every American in this country?

Mr. Wheeler. The way you outlined it, the answer is no.

Mr. McNerney. Okay.

Mr. Wheeler. There are -- the problem is, Mr. McNerney, one thing is that each side comes in. The industry says this is my wishlist. I want all of this. Some folks come in and say not in my back yard. I want all of this. We need to be working to how do we get to common ground.

Mr. McNerney. Okay. Well, thank you, Mr. Wheeler.

My district includes the City of Stockton. It is kind of close to Silicon Valley, but it is very different. It is a low income area. A few years ago, the city wanted to build an open access, fiber-based broadband network, but the startup the city was relying on went under, and the project wasn't able to move forward.

Now, I recently introduced the Broadband Infrastructure Financing and Innovation Act, BIFIA, now included in LIFT, that would provide \$5 billion in Federal funding for low

interest financing of eligible broadband infrastructure deployment projects.

Can you explain, Mr. Wheeler, as briefly as possible, why the BIFIA program would help for open access projects like the one the City of Stockton was hoping to do?

Mr. Wheeler. Well, BIFIA opens up for multiple uses, but for instance, one of the uses that it could be put to is funding the middle mile to connect to the Stockton project, funding the Stockton project.

Let me -- this is apropos of that. I need to correct something that Commissioner O'Rielly has now said twice which is incorrect which is how the maps have to be redone. What we are talking about when we are talking about maps, quote, unquote, are not maps. This is not an atlas that you take off the shelf and turn to a certain page. This is a database.

This has to be a quasi, real-time, ongoing database that matches the lines of the companies and 160 million residences and businesses and keeps evolving. It is not a frozen document. That capability is what needs to be available and I believe will be available at the time that the Congress makes the funding available, and that is important for BIFIA.

Mr. McNerney. Thank you. Well, in your testimony, you stated that the other great failure of our national policy is how low income Americans may have broadband passing through their front door -- in front of their front door but don't bring it inside. This is the case for too many of my constituents. They either can't afford it, or they don't have the digital literacy skills.

I introduced the Digital Equity Act with Representative Clarke, also included in LIFT, would be used to fund a wide range of digital equity projects. In a few sentences, please, why is it critical that we address gaps in broadband adoption and broadband literacy?

Mr. Wheeler. So Pew did a great study on why people who could, don't describe. First, about half of them was about cost, but there was also understanding, fear, lack of equipment, and intimidation. One of the great things that the LIFT Act does is to -- and your bill does is to move to the States the opportunity to work with the people that they are closest to to help overcome some of those obstacles.

Mr. McNerney. Thank you.

Dr. Moniz, it is great to see you again, and I am glad that you are continuing in the field.

In your testimony, you highlighted cybersecurity as it relates to energy infrastructure. This is something I care a lot about. How concerned should we be about the growing cyber threats to our Nation's grid infrastructure?

Dr. Moniz. Well, I definitely think we should be concerned. Mr. McNerney, by the way, good to see you as well. Again, for example, the solar winds event, as I have already said, really should catch our attention. It was undetected for so long. It was found only because it wandered into one of the cybersecurity companies, and it has certainly penetrated the cloud. And I am not sure we even know today exactly what all of those issues are.

So I think the Department of Energy is doing a good job, actually, with its ESEC process, but the issue is in the utility space. There are clearly very variable capabilities.

So I think that the Department and the Department of Homeland Security could really increase their assistance, especially to some of the smaller utilities that don't have quite the capabilities of the large IOUs.

Mr. McNerney. All right. Thank you.

Dr. Moniz. And I might add not only for the electric grid but also especially for the interactions and interdependencies, for example, with the gas grid.



Mr. McNerney. Certainly. Certainly.

Mr. Chairman, I yield back.

The Chairman. Thank you.

Representative Johnson, Bill Johnson, is next.

Mr. Johnson. Thank you, Mr. Chairman.

Mr. O'Rielly, it is really good to see you again. Thanks for being with us today.

You know, Chairman Wheeler in his opener said in reference to the Lifeline program that a law designed for telephones doesn't work for broadband. This demonstrates his extreme ambivalence on these important issues because he has consistently advocated for regulating broadband under those old laws, to regulate them as a utility.

So do you agree that laws designed for telephones doesn't work for broadband?

Mr. O'Rielly.

Mr. O'Rielly. Yes. I would agree that we shouldn't use old statutes that aren't applicable for these purposes. I have supported Lifeline in the past. I think we should migrate away from that. Something like an EBB makes a lot more sense or something that Tom was talking about on affordability, but your point is very well taken. He wants the positives and not the negatives.

I do want to address the one point he made in terms of maps, and I apologize for using up some seconds of your time. The maps are static, and they reflect what it looks like at a given moment. The data is not coming in on a constant basis, so new houses that are or new locations that are deployed are not constantly populating into the commission database. It is not something that is living and breathing. It is something you could make to do that, but that would be incredibly burdensome on the providers to do so.

And so when I am suggesting the maps need to be done, it is the data that may

have to be recollected or, at a minimum, the data that is there will have to be reanalyzed and set to these new standards. And I apologize for using your time.

Mr. Johnson. That is okay. I have heard that if new programs open up to eligibility to areas that lack service at 100 megabits per second upload and download, more than half the country would be considered unserved which means that funding is now eligible for half the country. That sounds like the exact opposite of what needs to happen to target funding to truly unserved areas.

If broadband funding is available in areas that don't have 100 megabits per second symmetrical service, doesn't that mean that the funding is most likely to be used for upgrading places that already have broadband while rural consumers continue to wait at the back of the line to get service?

Mr. O'Rielly. Absolutely. The dollars will flow to those areas that are easier and cheaper to upgrade and provide a greater return on investment. And I have been to your district, and I have seen how hard the geography is. I have seen the mountainous regions and how you have many of your consumers and many of your constituents who would be happy to have broadband at 25/3 who have nothing today. I remember being at the school. It had no wireless connection in your district. And so when people say we want 100/100, I am very mindful of the areas that I have visited such as your district and how they and many consumers have nothing. They are at the back of the line.

Mr. Johnson. Well, I know you are kind of alluding to it. You are kind of alluding to it. So what does that mean for digital equity? It seems like that would be going in the wrong direction.

Mr. O'Rielly. I would think so. I would think that the hardest to reach parts of rural America will take longer to implement, and we will have to see if the dollars stretch as far as they want to, depending on what is the funding level. But the priority will be

the other areas that are easy to serve. And the consumers, in terms of equity, I would suggest the consumers that have been left off before will continue to be left off.

Mr. Johnson. Okay. Continuing with you, Mr. O'Rielly, the COVID-19 pandemic shined a really bright light on the devastating impact of social isolation, particularly with our senior population. Everything from remote working, distance learning, the need for telehealth, nowhere was that seen more clearly than in our Nation's senior care settings.

So do you agree that investment should also be made in broadband connectivity for senior care facilities? Not only would this investment save the healthcare system critical dollars in the future, but it could ultimately save lives should safe isolation be required in the future. What do you think?

Mr. O'Rielly. Well, you make a lot of sense. I haven't analyzed the cost of doing so, and that is something that you have in your capable hands. I don't have in mine in terms of policymaker, but it makes a lot of sense. My mom's in a center today, and broadband was very critical to try and keep her connected as she has some serious health issues.

Mr. Johnson. Well, I am sorry to hear that about your mom, but I absolutely believe we have got to be very, very careful on all of these issues that we are talking about, the unintended consequences of going 100100 symmetrical and what that will do to locking out rural America and especially with seniors that live in rural America that really enjoyed the expansion of telehealth. And I really appreciate my colleagues like Doris Matsui that has worked with me so strongly on telehealth issues. Thanks, Mr. O'Rielly.

Mr. Chairman, I yield back.

The Chairman. Thank you.

The next member is Peter Welch. Peter, you are recognized.

Mr. Welch. Yeah. Thank you. Pardon me. Thank you very much. I have some quick questions for an incredible panel. I really appreciate every one of you.

Dr. Frieden, I want to go back to you. I totally am in support of your view that we have to have regular and steady funding for public health and for primary care. I want to ask a question. I am truly shocked at the failure of our Congress, Republican or Democrat, to start addressing the extraordinarily high cost to healthcare in our country. It is brutal. It means that taxpayers are hammered, employers are hammered, and so are individuals. Workers lose wages.

Is it the right way to go that we just put more money into a place where I do agree we need it, primary and public health, without addressing what I regard as the totally out of control and unsustainable cost in the healthcare system?

Dr. Frieden. Well, if I may, Congressman, I will enter into the record two articles I wrote just 2 weeks ago published about this very topic. I think we can control healthcare costs. It is shocking. We pay more for less life expectancy, for more disabilities than any other country in the world, and there are ways to fix that. Those include a payment system that rewards health, not volume of care.

[The information follows:]

\*\*\*\*\* COMMITTEE INSERT \*\*\*\*\*

Mr. Welch. Right. I agree with that. I will distribute those articles to the committee with the chair's permission, but thank you.

Second. Secretary Moniz, very good to see you. I just want to report that those tight, small tiny homes that you visited, they are doing great here in Vermont. Super energy efficient.

Dr. Moniz. Great.

Mr. Welch. Mr. McKinley and I had hoped for homes, it had been helpful in the past that would provide incentives to homeowners, \$2,000 if they did retrofitting that reduced by 20 percent what the energy consumption was, 40 percent if -- or \$4,000 if it were 40 percent. Do you continue to advocate as one of your comprehensive approaches strong commitment to energy efficiency that creates local jobs and saves on carbon emissions and saves people money?

Dr. Moniz. Absolutely. It is the best investment we can make, and typically, we do see typically north of 20 percent energy savings, so it is great. As I said earlier, I would even like to expand it further to other things like local and public buildings and the like for energy efficiency gains. But starting with residential certainly is --

Mr. Welch. Thank you. Yeah. And we have had some good bipartisan on that.

Mr. Wheeler, you know, I listened to Mr. O'Rielly, and actually, I take quite seriously his cautionary observations because when you have a big program and you can get money out, there is an excitement to just, quote, get something done. But my understanding of what we are doing here is essentially making the public decision in LIFT America Act that was made in the 1930s with electricity. We have to have high speed broadband.

First of all, is there a reason that we would not want to have symmetrical speeds in rural areas just as when in the 1930s, we didn't have a different kind of second rate electricity that couldn't keep up with the progress that was being made? Can you address that?

Mr. Wheeler. Thank you, Mr. Welch. I am at a loss as to why there ought to be second class service for anyone, particularly when 80 percent of America can get a gigabit. But there is a misassumption that has percolated through this discussion about this back of the line business.

The 2017 study that we did that said how much would it cost to build fiber to every home, every home, not just those that are picked and chosen, every home, was \$80 billion. And if I am the CEO of a small telephone company in Vermont, and I have got an unserved area next to me that I would like to get revenue out of, and the Federal Government says to me, we will pay you a subsidy to build that out to urban quality standards, and I say no to that, I ought to be fired. And my understanding of what LIFT does is like our 2017 study that says this is what it takes to connect everybody to urban quality broadband.

Mr. Welch. Thank you very much. I yield back. My time is up, but I thank all the panelists. They were terrific.

The Chairman. Thank you, Mr. Welch.

Next is Congressman Long, Billy long.

Mr. Long. Thank you, Mr. Chairman, and thank you all for being here today. And before I start my line of questioning, I would like to paraphrase something that Ronald Reagan once said. He said that the trouble with our liberal friends is not that they are uninformed; it is just that they know so much that isn't true, and I think something that was said earlier by Mr. Doyle kind of falls into that category.

Mr. Doyle said that -- he made kind of an accusation about NextGen 911, that Republicans, you know -- what he said, you know, that us not being supportive and whatever, but Republicans were very supportive of moving forward on NextGen 911, and we were working diligently with our Democrat friends. We really, really were, and we were working in earnest until they walked away, literally, the night before they dropped the LIFT Act. So I think that is more accurate of what actually happened here.

I have a question here for Commissioner O'Rielly. This legislation, the LIFT Act, tilts the preference for the Federal money towards projects that will delay open access broadband service networks. If an area already is so uneconomic to serve that it requires government subsidies to sustain even one provider, what are the impacts of favoring projects in this way, and is that an efficient way to use Federal dollars?

Mr. O'Rielly. Well, it is going to make the cost of those networks more expensive. It may introduce, you know, potential competitors to an area that can't support them, and that becomes, you know, uneconomical, depending on the provider.

But I do need to respond to Tom's previous point. I didn't suggest that they wouldn't get -- that the rural areas today wouldn't be addressed. I said that they would be addressed later because the earlier, the easier areas would be tackled first. And it is one thing to talk about a small company in Vermont. It is another to talk about larger companies that serve greater areas and where they are going to upgrade first and where the dollars are going to flow, and that is my point that he seems to miss.

Mr. Wheeler. Well, the dollars flow to the unserved areas, Mike. You set the standards, and then they flow.

Mr. Long. It is my turn. It is my time.

And I am concerned that some of the funding conditions on the preferences in this bill such as State regulation, open access requirements will mean that fewer qualified

broadband providers will apply for the funding. And still with Mr. O'Rielly, isn't that the opposite of what we need to serve rural America, much of which I represent here in the Seventh District of Missouri?

Mr. O'Rielly. I would absolutely agree.

Mr. Long. And what changes do you suggest to make to this bill to be more effective to close that digital divide that we hear so much about?

Mr. O'Rielly. Well, I would focus on a laser perspective on those that don't have service today, 25/3, figure out how to get them, and we already have programs that are working. We need to finish the work that the commission is doing. That means upgrading the maps and dealing with the programs.

If additional funding -- I wouldn't put \$80 billion for it. I think that the ecosystem can't handle it, and I would say that the symmetrical speeds that we have been debating don't make any sense. And it is not because I want one part of the population to have -- another part of the population have less. It is that you don't need 100 and 100, and you don't need symmetrical speeds for the current activities and even the growth of the current activities. So to go to symmetrical speeds makes no sense, in my opinion.

Mr. Long. Yeah. The LIFT Act includes an additional \$6 billion for emergency broadband program subsidy. Congress authorized \$3.2 billion at the end of last year in a bipartisan manner in response to the COVID-19 pandemic, not for a permanent subsidy program, and that program is not yet up and running.

What are some concerns about Congress authorizing more money for a program without first understanding what the need is, especially as we restart opening schools and our economy with the new CDC guidelines saying 3 feet of social distance is sufficient?

Mr. O'Rielly. Well, that -- look it. I think the program, you know, get it up and running, and figure out where the problems are and if it is working before you add -- you



know, double its cost or double the amount of money going for it. I mean, if you compare it to Lifeline which maybe is running last year maybe \$800 million, this is four times as large as the money that Congress has already appropriated on a bipartisan basis and then add another \$6 billion. I would just say get the program up and operational and figure out the problems before you add new money, but that is for you to make the decision.

Mr. Long. Okay. Well, I appreciate that.

And with that, Mr. Chairman, I yield back.

The Chairman. All right. Thank you, Billy.

Next is -- Paul Tonko is recognized for 5 minutes.

Mr. Tonko. Thank you, Mr. Chair.

I want to quickly highlight a couple of provisions that we might call environmental infrastructure, but I think we will see these are as critical to job creation and our economic growth as anything in this bill.

So, Dr. Frieden, forgive me if this is a little beyond the scope of your testimony, but how important is safe drinking water to our Nation's public health?

Dr. Frieden. Safe drinking water is very important, and it is one of those areas of infrastructure that hasn't been adequately supported. There are significant problems in urban and rural areas, places ranging from Alaska to Florida, and it is a problem that is likely to increase because of changes in our environment.

Let me just make one broader comment, if I may. From my perspective, having been a city health commissioner and working in my organization more than 40 countries around the world, most governments have a capital budget and an expense budget. The U.S. Government doesn't have that. If we had that, investments in infrastructure would be much easier to maintain, but I certainly agree that drinking water is crucially

important for health.

Mr. Tonko. Well, thank you. And so if we improve water quality by investing in treatment facilities and getting lead pipes out of our systems, will that have a positive public health benefit?

Dr. Frieden. Absolutely. The lead service line replacement issue is one that has really stressed public health for decades. The cost is high to replace them. And it is an example of what happens if a technology that is used turns out not to be safe. But the sooner we get lead down, not only will we have less health problems, but the societal and economic benefits of reducing exposure to lead are quite substantial.

Mr. Tonko. Well, you say the cost is high, but then is it safe to say we will create jobs building that infrastructure?

Dr. Frieden. The actual act of -- the actual work of replacing the lead service lines will be an employment generator. In addition, there is strong evidence that suggests that lower lead levels are associated with higher economic productivity and activity in the people who are no longer having their brains poisoned by low levels of lead.

Mr. Tonko. Thank you very much.

Secretary Moniz, great to see you. This bill also has money to remediate formerly used industrial sites known as brownfields, many of which are good candidates for renewable energy projects. Is putting brownfields back into productive use a good investment?

Dr. Moniz. It certainly is, and it also often has very, very strong environmental justice components as well. One of the approaches that I particularly like for brownfields is community solar because often, especially in disadvantaged communities, there aren't roofs to put solar panels on in any practical way, for example. And

community solar is a wonderful way of serving these communities using brownfields, perhaps a couple of megawatts at a Brownfield site. Also when done well, employing some of the local citizens in those projects.

Mr. Tonko. Thank you. And the LIFT America Act also makes significant investments in zero emission vehicle infrastructure, including a bill that I authored to provide rebates to build charging stations to workplaces, multi-family apartments, and publicly accessible locations. So Secretary Moniz, we know most EV drivers primarily charge at home. But as more people adapt to EVs, will it be important to provide more charging options?

Dr. Moniz. Yes. In fact, we are doing a study in New York City, and just basically in the center of New York City, we see the need for about a half a million charging stations. But, of course, urban environments, suburban environments, and rural environments will need very, very different architectures. But we need them all because it has to be an integrated system where people with EVs have the confidence to be able to drive as they need to, whether it is for work or for pleasure or for vacation and the like.

Mr. Tonko. Thank you. Are workplaces in publicly accessible locations such as grocery stores and public buildings good complements to ongoing EV infrastructure buildout for at home charging and fast charging along long distance and interstate corridors?

Dr. Moniz. It is absolutely essential because otherwise, we will be limiting the market when we know that EVs are already economically competitive with internal combustion engines. So it would be the height of unfairness, frankly, to exclude the charging infrastructure to those who could benefit from those vehicles with their lowering costs.

Mr. Tonko. Thank you so much.

With that, Mr. Chair, I yield back.

The Chairman. Thank you, Mr. Tonko.

Next is Dr. Bucshon.

Mr. Buschon. Thank you, Mr. Chairman. I appreciate it.

This committee has a strong history of working across the aisle, crafting real and helpful legislation for the betterment of the American people and consumer. This partisan bill expands authorizations leading to massive taxpayer spending during a time when Americans are trying to return to normal life, and I think that is unfortunate.

Two Congresses ago I had a bill, H.R. 2872, the Promoting Hydro at Existing Non-Powered Dams Act, that became law. This bipartisan legislation created real world change for the betterment of the American people. It cut through the red tape and instructed FERC to create an expanded permitting process.

The clean energy resource provides benefits in the form of jobs, economic investment, and improved public health. EIA reported that as of December 2020, 39 non-powered dams and 305 megawatts of capacity are planned for commercial operation as a result which is an increase from 2018.

The United States has been a leader in reducing its emissions, and in order to continue that leadership, advancing technology and innovation is key. However, this legislation lacks any meaningful permitting or licensing reforms to remove barriers to deploying new technologies, thus, in my view, stifling innovation.

Instead of rushing to yet another partisan costly and duplicative package through the process, we should all be working with the Biden administration to implement the appropriations from the Energy Act of 2020. The bipartisan provisions included \$35 billion of R&D and grants and technical assistance programs for developing and deploying

clean energy and reducing emissions.

Let's work together on bipartisan bills that actually improve our Nation's infrastructure, provide greater broadband access to rural America, pave the way for reliability and resilient electrical grid, and make electricity affordable for all Americans.

With that in mind, Commissioner O'Rielly, are you aware of anything in the bill that will actually cut through the bureaucratic red tape and allow for a more streamlined permitting and licensing process which will lead to greater innovation and more efficient broadband buildout?

Mr. O'Rielly. On the communication side, those provisions didn't seem to make the cut as of yet. But I have endorsed the package that is 28 different bills, and there are more ideas that should be included. It is not an all-or-nothing thing.

I think my colleague, my former colleague, has suggested that we are trying to deregulate our way to network build, and that is not right. But they are a critical point to reform, and they need to be addressed, or all you are going to get is litigation which we have dealt with, and the commission has tried to deal with for such a long time. And these problems need to be addressed and should be addressed here in this bill.

Mr. Buschon. Let me just say as far as my bill, the hydro bill goes, we went from a process potentially of 10 to 12 years to convert a non-hydroelectric dam to a hydroelectric dam, and our bill has cut that down to about a 2-year process, and it hasn't taken anything offline as far as the review process. It has just forced FERC to actually make a decision and to get the decision -- up or down to get that decision out there. So I firmly believe that unless we do those things, we can have all the programs we want.

But if it takes 10 or 12 years or longer to develop any kind of infrastructure project, what part of the private sector is going to play with us, play in that ballpark, right? They just can't. They just can't do it economically.

Also, Commissioner O'Rielly, in light of broadband funding, subsidies from the FCC's USF program, USDA, and now the Treasury Department allowable use funds to States. What modifications to the new FCC program proposed in the LIFT Act do you think are needed to ensure broadband companies can meet the obligations of this program in light of other programs potentially subsidizing the same areas?

Mr. O'Rielly. Well, I think you are going to have overbuilding of Federal programs. And I am just unclear how that is going to work, how the \$80 billion in the LIFT Act or the LIFT America Act would operate when you just put -- when Congress just put all of this money through these other funding sources for different standards. I just don't know how that is going to be coordinated.

First of all, the coordination is poor, but even then, I don't even know how these would act. And I would say that the LIFT Act seems to wipe away most Federal programs through the FCC programs in favor of its own.

Mr. Buschon. Yeah. I mean, you know, the Federal Government has a tendency of putting a lot of money out there that people actually can't use, you know. I mean, this is common across the Federal Government. We do that to the agency -- we do that to parts of our economy all the time.

It seems to me that we want to ask people who are actually in the game, hey, what actually amount of money do you need to do what we are proposing, we are asking you to do. And so my concern is, as is yours, is that this kind of funding is -- it may not actually be necessary, or they can't use it.

I represent a very rural district. I just want to say this in closing, Mr. Chairman, and broadband access is critical. You can't have economic development, you can't do telehealth medicine, and you can't do distance learning if you don't have it.

So I am hopeful whatever we do here in Congress that we find a bipartisan

solution to that problem.

I yield back.

The Chairman. Thank you.

Next is Congressman Cardenas.

Mr. Cardenas. Thank you, Mr. Chairman. I would like to thank all the members for attending this important hearing, also to the ranking member.

It is our responsibility as we build for the future to provide a safe, sustainable environment for everyone today, especially for our children and grandchildren and future generations. In Los Angeles, we continue to work on reducing emissions so we can breathe cleaner air. That includes investing in our public transportation which will greatly benefit families in the San Fernando Valley and throughout the region. The LIFT America Act includes language from my bill, Clean Commute for Kids Act, language that will help provide communities with zero emission school bus fleets.

There are nearly 500,000 school buses across our great country. Nearly 95 percent of America's school buses run on diesel, yeah, diesel, a fossil fuel that has been shown to cause numerous health problems including asthma, bronchitis, and cancer. And the most vulnerable among us are our seniors and children when it comes to health effects of things that cause cancer.

Transitioning to cleaner buses would prevent the release of 5.3 million tons of greenhouse gas emissions each year to protect our children and their lungs and to keep our diesel fumes out of the air and inside of our school buses and also to have a better benefit for the world at large. The LIFT America Act puts our goal to transition the entire fleet to zero emission buses over the next decade. This is the most aggressive attempt for us to do the right thing in America for our children and for the environment.

Secretary Moniz, transitioning to clean school buses includes the cost of the bus

which is currently around \$300,000 each bus. The cost of buying and installing charging infrastructure and the cost of training employees in the new technology, the LIFT America Act authorizes grants for all of these costs and also includes strong Buy America language for the school bus program.

LIFT America authorizes \$650 million over the next 5 years to begin this transition, but recently, the World Resources Institute wrote a letter noting that this amount would definitely not be adequate.

Mr. Secretary, would you agree with me that Congress needs to commit significantly more funds if we are trying to transition the fleet over the next decade?

Mr. Moniz. I would, sir. The electric buses are having their costs come down rapidly. Charging these fleets is a natural, and frankly, there would be some environmental justice benefits as well in many, many cases.

Mr. Cardenas. Okay. So it is multiple benefits, not just the children.

Dr. Moniz. Yes.

Mr. Cardenas. How would -- yes. And how would a significantly higher financial commitment from the Federal Government paired with the Buy America requirement influence the private sector's decisionmaking regarding investing in manufacturing capacity here at home, including for components like batteries?

Dr. Moniz. We need to really up the game in our supply chain for these vehicles. Right now, electric buses are dominant in China. We would like to get a domestic supply chain here for the vehicles and for the batteries.

It is encouraging on the battery side that we are seeing many new battery factories going up to serve the EV, the light duty vehicle market. But, of course, they would also serve the electric bus market.

And the bus market has not only the school bus market but, of course, urban



buses would also be quite natural if we can build our supply chain.

Mr. Cardenas. Yes. Thank you. The LIFT Act also includes language from my bill, the Affordable Solar Energy for our Communities Act. This language provides funding for community solar installations for underserved communities as well. Everybody who wants to have a safer and cleaner environment should be able to participate.

Secretary Moniz, in addition to helping increase access to clean energy, can you please talk about the role of small solar installations Like community solar in our energy transition?

Dr. Moniz. Yes. Again, as I said earlier, I am a big fan of community solar. Certainly in many underserved communities, there is very limited opportunity, even if you had the resources, to do a rooftop solar installation. So this way, in those communities, you could, in effect, own a piece of a 1- or 2-megawatt facility and lower your energy bills typically.

So I think this is a major opportunity. And going back to the earlier question, it also would link in with a brownfields program.

Mr. Cardenas. Thank you. The LIFT Act is something that we should move forward, and I support it wholeheartedly. And, also, I think that we have had the worst example of bad government when it comes to Texas and the failure for them to require redundancy in their systems and to make sure that they do not fail the people.

So with that, I will yield back my time.

The Chairman. Thank you.

And now we go to Congressman Walberg for 5 minutes.

Mr. Walberg. Thank you, Mr. Chairman.

Let me first echo my colleagues in recognizing how deeply troubling it is that the

majority has decided to forego some bipartisanship in working on an issue that we can all agree on, I truly, believe, investing in our Nation's infrastructure instead of reaching out to Republicans to find areas of common ground. There was a decision, I guess, to introduce a partisan wishlist that lacks the very basic principles of good governments.

While the provisions in the package appear well intended, many of them actually undermine the larger objectives that this bill seeks to address. For example, while setting lofty standards for higher broadband speeds and trying to future proof network technology, which is a good thing, the reality is that this provision in this bill would actually drain limited resources to upgrade existing networks rather than expanding underserved areas.

I am also disappointed that there has been a decision to abandon our previous bipartisan work on NextGen 911 services. NG 911 is critical for the safety and security of our communities, yet 911 dispatchers in my district and in the State have raised serious concerns that provisions in this bill would strand millions of dollars in taxpayer investment over the last decade.

Let me start by saying that expanding broadband to rural America is vital, and as someone who was recently connected to the internet, thanks to the Connect America Fund, I understand how important it is that we use our dollars wisely. The bill --

The Chairman. Did we lose Tim? Did we lose -- now I can. Now I can't. I can't hear him. Is anybody else hearing him? Now we can hear you. Go ahead.

Mr. Walberg. We will do our best.

The Chairman. I don't know if -- it appears that you have lost me again. Now we can hear you again.

Mr. Walberg. Let me move closer to the screen. Maybe that will do that.

The Chairman. And ask your question, and then go ahead.

Mr. Walberg. The question is this: Commissioner O'Rielly, I have heard concerns that this program could be used to overbuild existing broadband networks with fiscal infrastructure that are, in many cases, already funded by other Federal programs. Does this bill have sufficient safeguards to address this concern?

Mr. O'Rielly. I don't believe so. I don't --

The Chairman. I think he asked it, Mike. You can answer.

Mr. O'Rielly. Okay. I will answer. I don't believe the bill addresses that, and I worry the money that is invested in other Federal programs is either going to be wasted or conflict and definitely lead to the point of overbuilding, to subsidized overbuilding. Overbuilding is fine. It is competition. But subsidized overbuilding is incredibly problematic and harmful to those that don't have service.

Mr. Walberg. Thank you. Two years ago, I talked about the disastrous, heavy-handed Title 2 net neutrality regulations would destroy pro consumer service offerings like sponsored data plans, and now a California net neutrality law has done exactly that. Once again, it looks like heavy-handed regulations like those in this bill are poised to hurt consumers.

Commissioner O'Rielly, can you talk about how the heavy-handed regulations in the bill's Title 1, subtitle C broadband programs would prevent small providers from being able to participate and undermine their ability to bring broadband to rural Americans like mine?

Mr. O'Rielly. I think the bill has a number of requirements, and you outlined one section. I think there are a number of requirements that will make certain providers not want to participate or unwilling to participate or unable to participate. And the California example highlights that situation. The zero ratings, for instance, in a case that California has as part of its prohibition is something where big providers and small are not

going to be able to -- they are going to have to change their practices because of.

And then that, to me, is a detriment to actually getting all and having many competitors in the space that we want to compete for these dollars and having a full on competitive bidding situation.

Mr. Walberg. Thank you. Moving to 911, Commissioner O'Rielly, what would be the impact to States like Michigan who have already spent over a decade investing in planning and executing NG 911 if we were to restrict existing technologies from being used?

Mr. O'Rielly. Yeah. I am not sure why the bill goes in this direction. I am worried. We tried flexibility, bipartisan structure in the Spectrum Act of 2012 to make sure that the States had an ability to work through their system, and need is so important in this equation.

And I have visited those call centers, many visited during my time period at the commission. And I am leery if they are saying there is a problem in the States that the value of the dollar that they are investing and also the program direction they are going is being Federalized. I think that is incredibly problematic and should be reviewed.

Mr. Walberg. Thank you, Mr. Chairman. I yield back.

The Chairman. Thank you.

Next is Dr. Ruiz.

Mr. Ruiz. Thank you, Mr. Chairman. I am actually wearing my white coat today because I am actively participating in vaccinating some of our hardest hit, highest risk community members in my hometown of Coachella. So if you see me wearing my white coat, it is not without its context.

The LIFT America Act that we are considering here today will help our Nation build back better and deliver much needed infrastructure improvements for our districts.

There are a couple key parts of this bill that I would like to touch on today. The first issue is ensuring that tribal nations --

The Chairman. Well, we lost your voice. I don't know if he is muted or what happened. Can't hear you. We may have to come back to him. Former FEC commissioners are not allowed to laugh. All right. We will have to come back to him.

Next is -- I guess it is -- Debbie's not on. Debbie's there. All right. We will go to Ms. Dingell next, and then we will come back. Debbie.

Mrs. Dingell. Thank you, Chairman Pallone, and thank you for hosting this hearing.

As we look to shift from relief to long-term economic recovery from the COVID pandemic, we have got a real opportunity to make bold investments in our infrastructure, to build back better, and at the same time, rapidly transition to a clean net zero economy that will support good-paying American jobs, protect public health and the environment, and invest in frontline communities, allowing all of us to thrive.

I am proud that this bill has a number of my legislative priorities and bills, including the dam and hydropower safety establishing a green financing accelerator and makes investments in electric vehicles manufacturing retooling, expands the advance technology vehicle manufacturing program, and helps deploy a network -- it helps deploy the EV infrastructure that we desperately need in this country.

Secretary Moniz, I am talking fast because I would like to move right to some questions focused on the future of electric vehicles and the clean energy and sustainability accelerator as we aim to rebuild our Nation's infrastructure and economy.

And as you know, several of our auto manufacturers have said that they are committed to an EV future, but that means three things. We have got to build consumer confidence which means they have to be able to afford the car. They need a

battery that has got range, and they need to know that they can charge it when they are out there.

So my first question to you is how would -- so, and you noted in your testimony today's domestic battery manufacturing capacity is thanks, in part, to DOE's advanced technology vehicles manufacturing or ATVM long program. The ATVM program still has \$17 billion in lending authority.

The LIFT America Act and the standalone legislation I will be introducing soon would expand and modernize the ATV programs to include low and zero emission medium and heavy duty vehicles and make it easier for component manufacturers to qualify. LIFT America would also update and reauthorize DOE's, domestic manufacturing conversion grant programs, at \$2.5 billion per year.

So my questions for you are how would these revitalized programs help with our economic recovery, increase domestic manufacturing of clean energy supply chains, and that is something we really have to talk about. We need to build those batteries here, not overseas. Those jobs need to be here. And three, accelerate the deployment of clean energy infrastructure. Thank you.

Dr. Moniz. Well, thank you, Mrs. Dingell. It is good to see you again. Well, you have put your finger right on it. First of all, the ATVM program, for those who are not familiar, really helped a couple of major battery production factories to be built. And modernizing through the LIFT Act the ability to support supply chain, EV supply chain development, I think is really right on.

And I might say that quite bluntly, the last 4 years have seen the loan program pretty much on hold. Secretary Granholm has appointed an excellent, experienced investor to head the program now, and I believe that it will be very, very active, and this area of transportation should be a focus.

And I think, just to repeat, the fact that our domestic manufacturers are so committed in this direction, they have made those business model choices. The cost of ownership is going to equal and then drop below that of an internal combustion engine. So I can see why GM and Ford, et cetera, are saying that this is their future.

Mrs. Dingell. Let me ask you another quick question, and then I have questions for the record. What do you think the growing adoption of electric vehicles will mean for the grid which has come up in other questions. And in addition to charging infrastructure, what grid upgrades are needed to support the increased demand? But we need to not complain about needing to do it; we just need to do it for the future.

Dr. Moniz. No. In fact, I think we have heard some statements here that, frankly, overstate the needs on the grid. For one thing, because we will continue to see much more efficiency, and this will contribute to some low growth for the utilities. But we could also remember, the utilities are in the lead in terms of decarbonization, so it kind of -- it all fits together in a sensible way.

The other thing is, and this is more speculative, I have to admit, but we know that vehicle-to-grid integration will also be part of the new infrastructure and can supply some new grid services. So I think this is opportunity. To me, it is not a concern.

Mrs. Dingell. Thank you. And I guess I am out of time, Mr. Chairman, although I am not sure I didn't have a little taken away from. I yield back.

The Chairman. Thank you.

We will go now to Congressman Palmer who is recognized for 5 minutes.

Mr. Palmer. Thank you. You know, as my colleagues have said, billions of dollars in the Federal programs, and yet, we are failing to address one of the biggest obstacles that we have in terms of getting the infrastructure built that we need just to maintain our economy, much less move to a cleaner energy infrastructure.

Last week in our hearing, I asked a witness how long it takes to get newer, cleaner infrastructure built. He stated that underneath a Federal administration-related infrastructure project takes upwards of 7 to 8 years just to get the paperwork finished. A project to expand public transit outside of Philadelphia has been underneath a review since 2012. I would think if we want to encourage more people to use public transit that we would make it a priority to get it built.

Now, these delays are not rare, and it doesn't only relate to transportation infrastructure and other infrastructure. It will relate to broadband as well. I asked the Army Corps of Engineers to give me a list of outstanding feasibility studies, and it took nearly 9 months for them to respond to that. And when I did get it, I got a list of 97 studies that have been underway for hundreds of months at the cost of millions of dollars.

And my point about this is that since some of my Democrat colleagues have predicted that we only have 10 years before we have a worldwide climate catastrophe, shouldn't we be looking at ways to expedite our permitting process for infrastructure, maybe for building nuclear power plants that have no CO2 emissions? Mr. Moniz.

Dr. Moniz. Yes. I agree that, as I said earlier in the context of CCS, and it is true in many other contexts, that we often have too many serial permitting requirements. What we need to have is at the Federal and State levels processes that involve all the stakeholders, again, do not cut corners, but provide a coherence that allows the end-to-end permitting process to be much shorter because, frankly, I would share the concern that some of these processes are going on so long that they conflict with the time scale in which we need to introduce new technologies.

So I think that is a very important overarching issue, and it is one where I think we need to have real serious coalition building to bring together the different constituencies



who really have legitimate claims to be addressed in the permitting process.

RPTR MARTIN

EDTR ROSEN

[1:57 p.m.]

Mr. Palmer. That is one of the things that I worked on when we were in the majority and I chaired the Subcommittee on Intergovernmental Affairs, was getting rid of the duplicative, the obsolete regulations. I would also think that we would do well if we had a portal, where it was a one-stop shop, for permitting to expedite this, and not only for building an infrastructure that my Democrat colleagues advocate, but for doing basic things like -- for instance, there was a study undertaken after a flood in 1983 in Louisiana to build a diversion canal from the Comite River over to the Lilly Bayou, and it took 38 years before anything was done, and that was only after a devastating flood in 2016.

So, I appreciate your candid and accurate response to that, Secretary Moniz.

Dr. Moniz. In fact, if I could add, in some cases, California, for example, does appoint one of the multiple agencies to be the lead, so it really kind of coordinates it. That is the kind of thing we need more of.

Mr. Palmer. If nothing else out of this hearing, I would hope that we can come up with a productive solution to this. If we are going to waste hundreds of billions of dollars, let's build it as efficiently as we can.

And with that, Mr. Chairman, I yield back.

The Chairman. Thank you.

So now, I am going to try and go back. I see that Dr. Ruiz has his lab coat on there. Can we hear you? You are recognized again.

Mr. Ruiz. Now, can you hear me?

The Chairman. Yes.

Mr. Ruiz. Okay. Good. So let's get right to it. You know, I already told you why I am wearing my lab coat. I am actually vaccinating people outside. I am at a community vaccination clinic in one of our hardest-hit, high-spread communities in my district. So that is why I am wearing the white coat, just so I didn't throw people off as to why in the hell am I wearing a white coat during a congressional hearing, but it is because I am doctoring right now out these doors.

The LIFT America Act that we are considering today will help our Nation build back better, and deliver much-needed infrastructure improvements for our district. I want to talk about two issues: One is the Tribal broadband prioritization in order to help our Tribes get the state-of-the-art healthcare, educational, and economic opportunities that exist. They have been the least to be connected in America. What was already a problem turned into a catastrophe once the pandemic hit. When schools closed and, in many cases, the nearest hospital or clinics was hours away, and without robust connectivity, people couldn't work remotely, or take advantage of telehealth services.

In 2018, as part of the RAY BAUM's Act, Congress enacted my bill, the Tribal Broadband Deployment Act, that required the FCC to study and report on tribal broadband connectivity. When the FCC finally issued its report in 2019, the data showed that there isn't just a digital divide in Indian country, it is a digital canyon. No matter what metrics you looked at, Tribal lands have significantly lower access to broadband than non Tribal lands.

That is why the LIFT America Act is so important. This bill will make historic investments to expand internet access to increase economic and telehealth opportunity for Tribal communities. To do this, the LIFT America Act includes my bill, the Tribal Internet Expansion Act. It amends the Communications Act to direct the FCC's Universal Service Fund to explicitly prioritize Tribal lands along with rural and low-income areas.

In addition, the LIFT America Act, which I am pleased to co-sponsor, dedicates \$500 million for Tribal connectivity, and sets aside funds to increase adoption in digital equity on Tribal lands.

Chairman Wheeler, much needs to be done to ensure that Tribal communities are fully connected, but in your opinion, will these provisions help increase broadband connectivity on Tribal lands?

Mr. Wheeler. You are absolutely right, Congressman. Your amendment -- your bill, for instance, to amend Section 254 to make it clear what the responsibility is in Tribal lands is important. What the LIFT Act does also includes Tribal lands.

Let me just make one quick point about another provision of the LIFT Act that is going to help Tribal lands and everybody else, and that is the requirement for transparency. You know, I spent a lot of time on Tribal lands when I was chairman, and what I was finding was that they were kind of given a take-it-or-leave-it choice for their local provider, and they didn't know what other areas were being charged for similar service, and the transparency that this bill does will help in that regard too.

Mr. Ruiz. Thank you. Thank you very much.

The other area of this bill I wanted to highlight is a section advancing residential solar energy for lower income communities. Climate change has most significantly affected many lower income communities; yet, too many of the technologies that will save our planet are still primarily available to those with higher incomes. Production of clean, renewable energy should be accessible to every community, regardless of their ZIP Code or economic status.

Especially in my district where we experience over 350 days of sunshine per year in southern California, Palm Springs area, there is huge untapped potential for every community to harness clean energy for their own homes.

Secretary Moniz, I want to talk to you specifically about access and equity in the energy transition. The LIFT America Act includes funding to build lower income community solar installations. Why is equitable access to clean energy important? And how do we ensure that our transition is actually equitable and inclusive? And, in addition to communities solar, what are other options that we can pursue?

Dr. Moniz. Well, Mr. Ruiz, certainly providing our reliable, clean electricity and affordable electricity in Tribal lands has always been a very, very high priority of mine, because it is -- well, it is the right thing to do, and it provides also the opportunity for education, for employment. It is an equity issue.

In 2016, I was very pleased with bipartisan support to finally get -- I think it was \$11 million appropriated to provide credit support for perhaps \$100 million of loan programs for energy projects on Tribal lands. I think it is time to employ that, and, frankly, I would love to see that increased by an order of magnitude.

Mr. Ruiz. Thank you very much.

And I yield back my time.

The Chairman. Thank you.

Next is Congressman Dunn.

Mr. Dunn. Thank you very much, Chairman Pallone.

I think we can all agree that some Federal investment aimed at improving our Nation's infrastructure is needed, and, surely, every one of us can think of infrastructure needs specific to our districts. I am disappointed, however, that this LIFT Act lacks a bipartisan buy-in and, like the American Rescue Plan, lacks targeted allocation of funds.

Has this committee taken the time to assess the status of the trillions and trillions of dollars appropriated just last year to many of the same departments and programs that the LIFT Act would pour money into? I know that my Republican colleagues and I

have not seen an accounting of these unspent funds or the timeline for spending those funds. So I would also hope, as this committee engages in a thorough legislative process, that we will see some data and analysis of the appropriated and spent funds as well.

I would like to focus my questions on what appears to be duplicative health policy in the LIFT Act.

Dr. Frieden, section 40001 in the LIFT Act requires the HHS Secretary to develop standards for voluntary accreditation of public health departments and labs. As you know, CLIA includes Federal standards for all labs, and labs that perform higher complexity testing are also issued accreditation approved by CMS. In addition to these requirements, the National Public Health Performance Standard, the Standards, assesses capacity and performance of public health systems.

Given that all labs already comply with the aforementioned requirements, and the labs were put through the wringer last year, why do we need a new set of standards for accreditation of public health labs? What is the problem with the current standards?

Dr. Frieden. Actually, Congressman, there are some gaps, and I think accreditation can serve as a way of advancing quality. Right now, there is something called the Public Health Accreditation Board, and that board set up voluntary standards for health departments, including public health laboratories. And what we really found was that the vast majority aren't up to speed, and so --

Mr. Dunn. You know, I would love to -- in 5 minutes, we can't answer that, but I would love to talk to somebody over there about that offline because this is -- or learn how --

Dr. Frieden. We would be happy to follow up with you, Congressman. I think that the big picture is that accreditation can set standards that can allow Congress and

other funders to hold entities accountable for where --

Mr. Dunn. I think we can do that, though, without adding too much more red tape to our public labs, which I don't think they need. So, if there is some problem, let's get what the problem is and add that to the accreditation that we have.

I want to shift to section 40003, hospital infrastructure funding. This section prioritizes grants for hospitals whose projects will, quote, "include by design public health emergency preparedness and cybersecurity against cyber threats," end quote.

Now, the already existing Hospital Preparedness Program is a dedicated source of Federal funding for hospitals and health systems to prepare for, respond to, and recover from all kinds of threats, including cyber.

In your opinion, do you think that the existing Hospital Preparedness Program is insufficient to address preparedness? And, if so, why does focusing Hill-Burton program funding on preparedness, why is that more appropriate than simply boosting the existing Hospital Preparedness Program?

Dr. Frieden. The Hospital Preparedness Program has not been run by the Centers for Disease Control and Prevention, which has directed that by, what is called the ASPR, the Assistant Secretary for Preparedness and Response. Funding for that program has been substantially reduced over the past decade, decade-and-a-half, and I think quite -- to be very blunt, that the impact of that program has been limited. It is important that it be focused, whether on this issue or others that Congress decides. It is a possible route for funding that has not been particularly effective in the past, and, I think, you don't need to look any further than COVID to see that. And this is one of the areas that a health defense operations approach would allow you, Congress, to decide on. You could decide which line --

Mr. Dunn. Sir, we are going to run out of time here, but I just want to say this is

two examples, among many, but it seems to me the funds in this bill could be targeted more specifically towards our goals. If the goal is to fund preparedness activities, and if the existing program is lacking funds, then some of the funding in this bill could be specifically targeted to, for instance, the Hospital Preparedness Program.

Surely, we could find those funds somewhere in the \$6 billion pot of money for open-ended -- you know, for public health infrastructure spending.

With that Mr. Chair, I yield back.

The Chairman. Thank you.

Now we are going to go to the gentlewoman from New Hampshire, Ms. Kuster.

Ms. Kuster. Thank you, Mr. Chairman. Thank you again for hosting this hearing.

I think it is really important for us to be addressing our infrastructure that has been crumbling all across this country, and right here in New Hampshire, we have red-listed roads and bridges. I understand the American Society of Civil Engineers has given American infrastructure a C minus. So, when Congress fails to make these investments, ordinary Americans are left holding the bag, unable to participate in the digital economy, or remote learning, or home healthcare, because of bad internet connections.

But the LIFT Act makes important investments in improving our infrastructure, including water infrastructure, and I wanted to discuss a "dam" good idea that I have come across. I am super excited about 21st century hydropower and projects to improve the vitality of our Nation's rivers. So this morning, I led a letter with 39 of my colleagues, including many on this committee, to the Biden administration to include funding to rehabilitate, retrofit, and remove dams, the three R's, in the next infrastructure package.



The letter is supported by both river conservation and hydropower groups. It is built off of the Stanford University Uncommon Dialogue Agreement that robust investments are needed in the three R's to reduce carbon emissions, promote healthy river ecosystems, and create jobs.

So, Secretary Moniz, I want to commend you and EFI for your leadership on the three R's. And my first question to you is this: Should the U.S. rehabilitate, retrofit, and remove dams to bring the clean energy benefits of hydropower and the environmental and economic benefits of healthy rivers to fruition?

And that is --

The Chairman. Secretary Moniz, you are muted, I think.

Dr. Moniz. Oops, thank you. Thank you.

I was thanking the Congresswoman for her leadership on this "dam" problem, as she referred to it.

This is a tremendous opportunity. And, by the way, we were pleased to help -- Stanford was really in the lead on this, but we were pleased to help. But it is an opportunity to for more hydropower. It is an opportunity for healthier rivers. It is an unusual coalition between conservationists and energy people. It is just a perfect program, and I think we should move out on this really, really fast.

Ms. Kuster. Great. That is why I call it a "dam" good idea.

What type of Federal investment would be most effective for increasing hydropower generation and electricity storage in improving the health of our rivers? And if you might quickly explain to my colleagues the benefits of storage with hydropower.

Dr. Moniz. Yes. Well, today, it is not commonly known that pumped hydro storage, essentially pumping water up so you can have it fall down and generate

electricity when needed, is actually the dominant storage technology today in this country; but you need to have the right water resources, the right topology, and maximizing that through this dams initiative -- by the way, we have about 90,000 dams in this country, some powered, mostly unpowered, and some safe and some unsafe.

So this has all kinds of dimensions, from providing storage for our wind and solar resources, to safety, to -- I am a very avid fly fisherman -- to better ecosystems for cold water fisheries as well.

Ms. Kuster. Great. Well, thank you for that.

Quickly now I am going to shift gears a bit.

Mr. Wheeler, I want to quickly touch on high-speed broadband. As Congress and the FCC look to deploy additional resources, can you speak to the importance of first deploying broadband to completely unserved communities?

Mr. Wheeler. Thank you, Congresswoman. That is a great question.

One of the things we have learned today, you all -- one of the things about this body is you are representative. You are also representative in what we have seen today in some of the connectivity problems that this country has. And one of the members said earlier that we need to use the dollars wisely. I think that is the point that you are making. We don't want to have second class service for rural areas, and the excuse that somehow unserved areas are going to get to the back of the line is just a figment. You run an auction, and you say, Y'all come, and everybody gets the opportunity to come to participate in that auction. And that is what can happen in your State, in rural areas, and elsewhere.

Ms. Kuster. Terrific. Thank you so much.

Mr. Chairman, I yield back.

The Chairman. Thank you.

We now go to Congresswoman Lesko.

Mrs. Lesko. Thank you, Mr. Chairman. And for the witnesses, I am a Congresswoman from Arizona. It is great to be in front of you today, and have you here.

I share the -- I don't understand, I should say, why the standard in this bill is 100 megabytes per second upload and download, you know, download and upload. I don't understand the need for that. And it has been said here that there is a concern that because that is the standard set in this bill that just about every single community in America, including communities that already have, you know, broadband services, are going to get the money as well, and these rural areas that don't have anything aren't going to get it.

So I am hoping, and I want to tell my colleagues that I am willing to work with you. It seems like a simple fix to me on that is to prioritize areas that don't have broadband at all in this bill. And, so, I am willing to work with my Democratic and Republican colleagues on that fix.

My question though, changing subjects, is for Mr. Moniz. You had brought up the mining of critical minerals, and I just want to read a couple of things that I had read first, and then ask you a question.

It says that 35 critical and rare earth minerals of strategic importance to energy applications, high-tech manufacturing and defense, have been identified by the previous administration. The energy applications of these critical minerals include magnets and wind turbines, batteries, and electric and conventional vehicles, phosphorous, and energy efficient lighting, and displays and catalysts for mitigating greenhouse gas emissions. The U.S. is entirely reliant on imports for 14 of the 35, while imports account for at least 50 percent of the supply for another 17.

And I think I read recently that, as far as lithium that is used in these electric

vehicle batteries, that most of it is produced in Australia, if I am not mistaken, and then Chile, and then China. But I am pretty sure -- and I want you to confirm -- that it said that China processes most of it using coal-fired plants.

So, first, I want you to confirm if China processes most of the lithium. But then my question is, how do we get more mining here of critical minerals, including lithium, and make sure that we are able to do so? Because there is a lot of environmental concerns, and so how do we balance that?

Dr. Moniz. So, Congresswoman Lesko, first of all, just let me reaffirm that the need for these critical minerals is going to just skyrocket, frankly, as we deploy new technologies. Number two, you are absolutely right that China -- it is not only lithium. Actually China dominates the processing of many of these critical minerals. So, I think there is no doubt as a -- you know, as a sane energy security issue, we need to work to diversify these sources of minerals and their processing.

Now, in the United States, we will be able to expand our production in some of these areas. In lithium, for example, there are initiatives in the salt and sea, initiatives in North Carolina, et cetera; but for other minerals, like cobalt, I just don't think we have the natural resource.

So, what we need to do is to really work with our allies, Canada, Australia, for example, which have significant mining experience, and active mining, so that we can have a balance, at least, against the Chinese processing dominance.

Now, in terms of reexamining mining, there is a lot of discussion going on, for example, in Minnesota, in the iron range, et cetera. But I think that this is, again, a case where constituencies need to come together, balance climate, environmental, improve environmental footprint. But I believe we do need to expand domestic mining as an energy security issue in a low-carbon world.

In fact, if I may just give one factoid that gives you an idea of the scale, one of the very large offshore wind turbines -- and where I live in New England, offshore wind has got to be a big part of the solution. Just one of those turbines requires a ton of a rare earth mineral. So this is big.

Mrs. Lesko. Yes. Thank you. It is really big. And so I hope all of our committee can figure out a way that we are not so reliant on hostile countries, including China, to process and also to mine. We have to come -- we have to do it.

And so, with that, I yield back.

The Chairman. Thank you.

Next, we go to Congresswoman Barragan.

Ms. Barragan. Thank you, Chair Pallone, for holding this important hearing on the LIFT America Act, which invests more than \$312 billion in infrastructure to reduce pollution, combat climate change, narrow the digital divide, create jobs, and increase access to healthcare.

I am especially proud that provisions from my bill, the Climate Smart Ports Act, have been included in LIFT to help ports reduce pollution by investing in zero emissions technology. Nearly 40 percent of Americans live within 3 miles of a port, including communities of color in my district near the Port of Los Angeles. While ports create jobs and help our economy run, they also are major sources of air pollution that often impact the public health of communities of color. Modernizing our ports is good for our climate, environmental justice, and our public health.

Secretary Moniz, America's trade volume is expected to see an increase of 300 percent by 2030. Do you agree that electrifying our ports is an important climate solution, given how connected they are to the goods movement system nationally and globally?

Dr. Moniz. Absolutely. In fact, I might say that in the Quadrennial Energy Review back in 2015, we made that recommendation, and your acting on it is really a very, very good idea. As you said, there are environmental justice issues. There is a lot of energy trade as well that goes through our ports. And I just mentioned offshore wind as an example. That is going to require a whole port infrastructure to develop, maintain, et cetera.

So electrifying that, and/or using hydrogen, clean hydrogen or zero carbon fuel, there are a few options. But going to zero carbon ports would be an enormous, enormous step forward.

Ms. Barragan. Thank you for that. I think it kinds of leads into my second question that you covered a little bit.

The LIFT bill includes a critical downpayment of \$3.8 billion over 5 years in decarbonizing ports. Given that there are 360 commercial ports in the United States, and we are hearing the average cost of decarbonizing a port is at least half a billion dollars, do you agree we need to be investing as much as possible to meet that need?

Dr. Moniz. Yes. I think -- but with the Federal funding, of course, as much as possible, leveraging other funds to come in with, perhaps, creative financing ways, because it will require a lot of resources.

I would also argue that environmental justice could be used as one of the priority factors in terms of how the investments will made.

Ms. Barragan. Well, thank you.

Mr. Secretary, for you next, the LIFT bill makes critical investments in grid modernization to improve resiliency during extreme weather events, which will become more frequent due to climate change. When you were Energy Secretary, your Department provided grants, small grants to towns and cities to assist in building

microgrids to support critical facilities, such as hospitals or fire departments during power outages.

Do you think LIFT should invest in clean energy microgrids for communities across the country as part of a climate resiliency strategy?

Dr. Moniz. Yes. And I might also add, by the way, of course, microgrids play a huge role in our defense facilities, our bases. But going back to the question, I think microgrids should be looked at as one integral part of the overall smart grid structure of the future, because it provides the ability, especially during risky periods for the grid stability, it provides the ability to, in a certain sense, decouple and serve a critical load in a reliable way during a stress on the grid.

Ms. Barragan. Well, thank you, Mr. Secretary.

I have a Clean Energy Microgrids bill with Representative Clarke that focuses these investments in the environmental justice communities. I hope as we markup LIFT, that we can include further support for microgrids in this legislation.

And with that, Mr. Chairman, I yield back.

The Chairman. Thank you.

Next, we go to Congressman Pence.

Mr. Pence. Thank you, Chair Pallone, and Ranking Member Rodgers, for holding this meeting today.

One-third of the legislation we are considering today authorizes clean energy programs, and so, I would like to focus my remarks today on these considerable provisions.

Following a long career in the petroleum industry, I came to Congress to address the challenges facing our critical infrastructure in both the short-term and on a long-term basis.

In Indiana, the crossroads of America, we have always recognized the importance of modernizing and investing in our aging infrastructure. We rank number one in roads. This contributes to the prosperity of not only Hoosiers, but all Americans. What the current administration fails to realize is that the demand for affordable, reliable energy is only going to increase. As my colleagues on this esteemed committee know, sources of clean and renewable energy will only be as useful as they are reliable.

I support an all-of-the-above approach to energy production, but the intermittent nature of solar and wind will leave a gap in baseload power that consumers need for reliable and affordable energy.

To support the robust network of electric vehicles that the LIFT America Act suggests, disruptions in available power will have even more disastrous implications in our economy and national security. Fossil fuels, like natural gas and coal, are needed to protect the integrity of our grid and affordability of electricity prices on a baseload basis.

Unfortunately, this legislation misses the mark on any meaningful expansion of the pipeline infrastructure that is needed for cleaner-burning reliable fuel. I hope that the majority will consider additional provisions that support the robust pipeline distribution that will be necessary to sustain energy needs for the electric vehicle network that this legislation envisions. Pipeline distributions will continue playing an important role in other clean energy technologies.

I am proud that Cummins Engine Company, headquartered just miles from my home in Columbus, Indiana is developing world class innovation to advance cleaner technology using hydrogen and fuel cell solutions. However, like any other fuel, hydrogen will need to be transported from point A to point B, and pipelines will have to be part of the equation if we are to enable the hydrogen fueling infrastructure provisions in this bill.



My bipartisan Clean Energy Hydrogen Innovation Act is a good first step to advance U.S. leadership in hydrogen innovation through the Department of Energy's loan guarantee program.

Mr. Moniz, in your testimony, you touched on the need for low carbon fuels to complement clean electricity. I agree with your sentiment that hydrogen has the potential to play a critical role in an all-of-the-above energy strategy in a wide array of applications.

My question is this: How quickly do you think we could create a distribution network to bring this innovative carbon neutral, or, in some cases, carbon negative solution to market, and what are the elements of this network? And, finally, does it include pipelines?

Dr. Moniz. Thank you, Mr. Pence, for the question.

In fact, in my testimony, there was a rather complicated figure in which my answer really is centered. Namely, I would see the opportunity to really focus on hydrogen market development in this decade. We need to move out, I think, quite quickly on this.

For example, we showed in that figure, to which I am referring to, how the United States -- and I think Indiana would be one of those cases -- where the convergence of industry and power, and the opportunity for CO2 sequestration, they all converge.

And, so, what we would argue for is that Congress could really incentivize two, three, four of these hydrogen CO2 hubs to be really focused on in the near term. And that could be a mixture, given the CO2 opportunities, a mixture of so-called blue hydrogen and potentially green hydrogen as well. But hydrogen, as you have said, has this capacity to, essentially in the longer term, replace the role of natural gas in serving multiple end uses, and, I think, in a low carbon way. So that is really important. And I

think we could move out in 5 years if there was a focus on these dispersed number of demonstration hubs.

Mr. Pence. Well, thank you. I sure hope we consider this very quickly. I know there are some, I will call them manufacturers, that believe this technology is here today.

And, Mr. Chair, I yield back.

The Chairman. Thank you.

Next, we go to Lisa Blunt Rochester.

Ms. Blunt Rochester. Thank you, Mr. Chairman, for calling this crucial hearing on the LIFT America Act, and thank you to the witnesses for your testimony today.

As we know, the COVID-19 pandemic has exasperated an already crumbling infrastructure. For too long, we have neglected to invest in our country's infrastructure needs, and many of our Nation's roads, bridges, dams, and drinking water systems are in desperate need of upgrades and repairs. As we consider legislation to modernize our Nation's infrastructure, it is also critical that we remember that investment must include broadband.

The Enhanced Emergency Broadband Act, which I proudly support, expands access to internet for low-income individuals and families, that were disproportionately impacted by the COVID-19 pandemic. And while I was pleased to see this bill's inclusion in the package, we need to look for the permanent solution for broadband affordability, especially as we continue to move toward an increasingly digital world.

The LIFT America Act also makes a long overdue investment to reduce emissions at our Nation's ports as was shared by my colleague, Ms. Barragan. This language is based, in part, on the Climate Action Planning for Ports Act, which I introduced earlier this year. Ports and the trucks, ships, trains, cargo-handling equipment that serve them, are major sources of greenhouse gas emissions and continue to threaten the health and

well-being of near port communities, many of which are low-wealth communities and communities of color. By [inaudible] ports, we will not only help to address the ongoing climate crisis and historic environmental injustices in this country, but we will also create good-paying jobs, and we need to work together to do this.

Secretary Moniz, my questions are for you. What are the benefits of investing in emissions reductions at ports, and how will decarbonizing ports improve public health while expanding economic opportunity?

Dr. Moniz. Well, thank you, Congresswoman Rochester.

Well, first of all, of course, decreasing emissions anywhere is very important for our collective well-being as we see how the climate is changing, and the extremes of weather are becoming more and more frequent, and, frankly, more and more expensive for us to deal with. So that is number one.

Number two, now ports are pretty intense sources of emissions, so they represent a great opportunity to reduce emissions, and, at the same time, as you say, in many, many, many cases, address social equity issues, given the frontline communities that are often near, practically co-located with these ports.

Third, there is going to be a lot of action around ports increasing. So, again, they present a major opportunity, as I said earlier, both for broader trade issues, but also in Delaware -- I am in Massachusetts, the Atlantic coast -- we already have 20 gigawatts of offshore wind projects in development. There is another dozen being spoken of. It is going to increase, and this is going to require developing major port facilities, major onshore infrastructure, major job implications, and those jobs, hopefully, could go as well to some of those nearby communities that could use good jobs.

So it is a winner all around.

Ms. Blunt Rochester. Sure. That is a great segue into my next question.

I got a chance to visit the Port of Wilmington in Delaware last week to talk with them about the fact that local labor unions have worked with them in our port to make sure that it is cleaner, it is electrified. And would you agree that an investment in clean energy ports will help disperse job creation with the proper labor protections, which are in this legislation, that we can mitigate any potential negative impacts on port workers?

Dr. Moniz. Absolutely. And, in fact, I would give you an anecdote. Going back to the offshore wind case, at my organization, EFI, we have a partnership with the AFL-CIO. We have 10 areas that we want to study that would be part of addressing low carbon with a focus on good jobs. In the discussions with labor, number two on the list of ten is offshore wind and developing those supply chains, including, of course, the onshore supply chains. So spot on, yes.

Ms. Blunt Rochester. Thank you so much, Secretary Moniz, and I am excited to see what we are doing at our port and want to make sure that all ports across this country have the tools and the resources and the funding to decarbonize.

Thank you, Mr. Chairman. And I yield back.

The Chairman. Thank you.

Next is Congressman Crenshaw.

Mr. Crenshaw. Thank you, Mr. Chairman. Thank you all for your patience in suffering through all of our questions. It is greatly appreciated.

Look, our main problem with this is, as usual, we are spending lots of money. We are attaching morality to a dollar sign. We are attaching the length to which we care about something to dollar signs. This is a fallacy, especially with infrastructure. We cannot keep throwing money at things without a better plan to incentivize at least some private investment, and this bill does the opposite in many, many cases across the spectrum.

When you have an infrastructure plan, you should definitely start by making it easier to build said infrastructure, instead of putting additional mandates and regulations that make it harder. Let me give you an example. Last week we debated the Clean Future Act. One of the big proponents of that Act is to ban future plastic manufacturing. Okay. Well, I thought we were trying to build fiberoptic cables.

So this question is for Mr. O'Rielly. If we are not going to be producing more plastics, if we are going to make that impossible, how does that affect our ability to lay down thousands of miles' worth of fiberoptic cable?

Mr. O'Rielly. It is a component of, I mean, glass and plastic and a lot of things go into the universe. It is going to make it more difficult, more expensive, and it may even drive to buy purchases in other countries.

Mr. Crenshaw. Another question. I have spoken to a lot of industry experts on this. Is fiberoptic cable into rural areas the only way to get broadband to rural areas?

Mr. O'Rielly. Well, it depends on what speed you are talking about. Many rural America consumers today get it through a variety of technologies, and they enjoy it. Most consumers don't care where the technology is, as long as it meets their family's needs. So we have satellite; we have wireless; we have got definitely fiber; you have got coax. So there are a number of different technologies that are operating today that people are able to connect to broadband. If you raise the rates and the speeds as identified in the bill, well, then, you basically are saying it is only fiber.

Mr. Crenshaw. Yes. And I guess, you know, let's talk about those rates. You have mentioned 25/3 over and over again. I just googled what it takes to watch Netflix, what Netflix recommends. If you have multiple people trying to watch HD, then they want a 5 megabytes-per-second speed, so that is obviously significantly less than 100/100.

Okay. I live in Houston. I don't think we suffer from low internet speeds. But generally speaking, what does an urban area like mine have as far as speeds go? Would we be under -- what I am getting at is, would we be considered unserved if we went to this 100/100 speed rating?

Mr. O'Rielly. Well, there is -- the estimate I have seen is that 57 percent of America will be deemed unserved under the definition. So, I don't know if that would cover a major metropolitan city top ten market like Houston. I would suspect probably not. But a number of markets that we would determine otherwise, I mentioned Buffalo, would fall in that case where I come from. So, I mentioned a lot of markets that people wouldn't estimate as rural or unserved, would now be deemed that way.

Mr. Wheeler. Congressman, 80 percent of Americans have 1 gigabit today, so I am sure -- and that is basically what cable companies provide. They are, by the way, upgrading to 10 gigabits.

Mr. Crenshaw. Okay. I mean, I certainly don't have 1 gigabit. I can check that. The point is this: There is a lot of -- and there seems to be conflicting data on this; but the point is this: And I think the point Mr. O'Rielly was making earlier, and the reason we believe, and the reason industry has told us, this is what will happen with the flow of dollars if you make it 100/100 is when it is unnecessary for what we are actually trying to accomplish just in our daily lives, okay.

But, second, it causes a lot of urban areas to be considered unserved when, in fact, they are perfectly well-served. And, of course, money is going to flow there. It just makes sense from an investment perspective. That is our issue with this.

I want to move on to Secretary Moniz and move the conversation -- I am already out of time -- about -- Mr. Moniz, this plan does not have anything for the one baseload energy that is carbon free, nuclear energy. You have written in the past about

supporting the need for nuclear and next generation nuclear. You haven't changed your mind, have you? We would still need to do that, I would assume. Because the thing about investing in purely renewables is they are inherently unreliable.

Dr. Moniz. Well, I wouldn't characterize the renewables as unreliable, but I do support, and continue to support modern nuclear, both fission, and fusion, by the way, where the private sector in both cases has really stepped up to the plate with enormous infusions, more innovation than we have ever seen in nuclear, and I think this is very promising for impacting our grid needs in the next couple of decades.

Mr. Crenshaw. Well, thank you.

I yield back.

The Chairman. Thank you.

We now go to Darren Soto.

Mr. Soto. Thank you, Chairman.

President Biden ran on the promise to build back better, and he won. He won because he promised to defeat the coronavirus and bring us back to prosperity. He also won because he promised, to quote, create millions of good union jobs, rebuilding America's crumbling infrastructure, from roads to bridges, to green spaces and water systems, to electrical grids and universal broadband as part of that build back better plan.

Eighty percent of Americans support rebuilding our Nation's infrastructure. Even President Trump said he wanted a \$1 trillion infrastructure package. Yet, infrastructure became a long running joke for 4 years. How sad for the American people.

I am hearing criticism today from my colleagues across the aisle, but you had your chance. You had your chance for 4 years and wasted it. We are not wasting any more time. Americans across the country are serious about infrastructure, and we are serious about infrastructure, and that is why we are moving forward with the LIFT Act, with or

without you. The LIFT Act will finally lift America's infrastructure into the 21st century.

First, it will modernize our electric grid, and boost renewable potential, make our grid more resilient against natural disasters, like hurricanes that Florida experienced, and cyber attacks, or boosting energy efficiency. And we are going to create an electric vehicle charging network across this Nation, as was mentioned many times, including by Secretary Moniz. The private sector is already there and past that. We just need to step up.

Second, the LIFT Act will rebuild crumbling drinking water infrastructure. From Flint, Michigan, to St. Cloud, Florida, in my district, to cities and towns across the Nation, we need to step up to help them. It recently made national news when an attacker hacked into Florida's water system in an attempt to poison the entire community. We need to support, and I am pleased that we are extending this EPA program in this bill. Also, PFAS chemicals are a pressing threat to our community, and the LIFT Act would invest significant sums to help get this out of our water. We even had a cancer cluster in central Florida among our firefighters because of PFAS. So we need to partner with local governments.

Third, the LIFT Act would provide internet access to Americans across the Nation, from precision farming in orange groves in rural Polk and Osceola Counties in my district, to modernizing classrooms in more urban district areas of Orlando and Kissimmee, to making sure we have high-speed internet to learn, to conduct business, to have telehealth, among countless activities that modern Americans face every day. We need to make sure all Americans have access to internet.

And, finally, the LIFT Act will upgrade our healthcare infrastructure. We still have the COVID-19 pandemic, laid bare our waning healthcare infrastructure. The bill improves our workforce capacity, expands laboratory systems and health information



systems so CDC and our hospital network can be better prepared for future pandemics.

Secretary Moniz, in your testimony, you spoke about the grid upgrades that are necessary to accommodate distributed and clean energy sources. Speaking specifically on solar, which is really important for Florida, what are some grid considerations as more solar is added to the mix? And what upgrades in investments are necessary to accommodate both utility scale solar as well as distributed solar?

Dr. Moniz. Well, thank you, Congressman Soto.

Well, first of all, one of the issues with solar, of course, we all know, is that the sun, the sun peaks in the afternoon, and as solar becomes a very, very large part of the grid -- and I am very bullish on solar, I have to say -- clearly, the storage requirements that go along with it will have to be addressed. And as solar is going up, and California has seen this, then battery storage is going to be very important for addressing the intraday storage needs. But we still have some innovation to do for when solar gets really, really big, in terms of also, what is called long-duration storage. Days, weeks, and, frankly, even seasonal, may become important if solar is dominant in a system. But this is all manageable. I think the innovation programs need to be pushed hard in that direction.

Secondly, solar has the unique advantage of being able to be deployed at utility scale, at community scale, and at an individual scale with individual housing.

So it is really an extraordinarily flexible approach. But, again, we need to integrate it with storage in these cases, and battery prices falling down really help with that intraday storage. Now, let's get some of those longer-duration storage.

We mentioned earlier, pumped hydro is a great solution, but it doesn't work too well in Florida, for example. But there are other approaches, like flow batteries, et cetera, which could be used.

Mr. Soto. Thank you.

My time has expired.

The Chairman. Okay. Next, we go to Congressman Joyce.

Mr. Joyce. Thank you, Chairman Pallone, and Ranking Member Rodgers, and thank you for the witnesses for being with us here today.

I am extremely concerned about how the provisions in this bill would affect rural communities, like the one that I represent in south central and southwestern Pennsylvania. Many in my district have no access to reliable broadband whatsoever, and this has impact. It has impact on commerce, on healthcare, and, particularly now, in education.

One of my top priorities in Congress has consistently been to expand services to these areas. Sadly, the direction that this committee is going with the LIFT Act America will only further grow the digital divide, and widen the gap between rural and urban America, and not close it.

Commissioner O'Rielly, the LIFT Act would mandate government collection of pricing data, require providers to open their broadband networks to competitors after they build the infrastructure and encourage local governments to build their own networks in direct competition with companies.

Do you think that this can be a model for success?

Mr. O'Rielly. Well, I think as I have indicated in my testimony, I think it discourages private investment and favors other. By adding new burdens and favoring, you know, competitors from local governments, I think you are a recipe for disaster, and the areas that aren't served today are likely to remain that way. And you make it more difficult for the private sector to serve and bring benefits.

I think the speed rate of 100 up, my former colleague indicated that cable offers 1 gig, but they don't offer 1 gig on upload. And, then, two, I would say to that point, is

that very few people take that service. So to argue that everybody needs it at that rate and we should pay for it just means that the areas that we should be targeting on that you talked about in your district and the consumers, constituents that need service are not going to get it. We are on the edge. We are at the last 5 percent of America, give or take, to get to the 25/3 threshold.

And I realize it is not ideal in terms of what the future may bring in terms of speeds, but it is getting everybody to a basic level, and we have never gotten there.

I was at 4/1, trying to get everyone to 4/1 and we moved the goal post; then 10/1 and we moved the goal post; and now it is 25/3, and we are trying to go to a different place. It means those consumers that you represent that don't have service are going to be further away from getting there.

Now, the idea that you can have one option and it will solve all of the issues, we are on the edge of getting service to those consumers, and the attention and energy efficient activity will all flow to the new \$80 billion program and away from these programs which will be dismantled.

Mr. Joyce. Mr. O'Rielly, I have seen funding proposals that are supposed to be tech neutral, but they require providers to offer, as we discussed, 100/100 service. That would seem to limit building to fiber builds, and even though, as you have discussed, other technologies might make more sense in some areas, based on costs, where I live, based on terrain, or remoteness. Do you agree that the programs need truly to be tech neutral to ensure that many parts of the country as possible are able to receive this incredibly necessary broadband?

Mr. O'Rielly. We should use all technologies. The end consumer doesn't mind where the technology is. They want it to work to meet their family's needs. And so, to basically say everyone has to have fiber, that is a wrong direction, in my opinion. We

certainly want speeds to be as high as we can, but we still have the population, that you represent a portion, that doesn't have service today, and we should be really focused on them like a laser.

Mr. Joyce. I think that analogy is spot on. We need to have the development and be able to use all forms of technology to provide this service. As I mentioned in my opening comments, we have areas where commerce and healthcare and education are not being served, so being able to utilize all of these is so important.

Again, I thank all of you for being present here today. And I yield the remainder of my time.

The Chairman. Okay. So next, we have Congresswoman Rice.

Miss Rice. Thank you, Mr. Chairman. Thank you all for being here today.

In my State of New York, our hospitals and health systems are among the finest in the world, where our buildings are collectively the oldest in the country. Funding cuts to State and local health departments have undermined their ability to protect the health of the residents in their communities, and decades of underinvestment in public health left us unprepared for this pandemic.

We simply cannot afford to ignore the needs of the public health sector until the next crisis arises. Adequate and sustained Federal investment in public health infrastructure is needed to ensure that we can protect and improve the health of all Americans. It shouldn't fall upon States alone to make this investment.

So, I am very happy that included in the LIFT America Act is my bill to provide grant funding to State and local health departments for core public health infrastructure needs. Across the country in areas that were hard-hit by the virus, like in my district on Long Island, local health departments were on the front lines and played a critical role in providing care to their residents.

I do believe it is in our country's best interests to invest in modernizing our public health systems to ensure that we can combat emerging health threats in the future.

Dr. Frieden, if you could, just talk about how the core public health infrastructure authorization in this bill will help State and local health departments?

Dr. Frieden. What we have seen over the past two decades is a loss of 50,000 jobs in State and local health departments. We have seen data systems that are not up to today's standards and that couldn't manage for the COVID pandemic. We have seen monitoring systems that are out of date, and we have seen a population that lacks resilience. And because of that, mortality was higher, more people died, and economic destruction was higher. There was more than there needed to be.

So it is crucially important that we strengthen State and local health departments. We can do that by not only funding more, but also providing more cohesive staffing with thousands of CDC staff who are embedded for years and learn what the front lines really mean in public health. That is possible through this bill and a health-defense-operations approach that allows for sustained funding year after year, because the risks are not going to go away, and we just cannot keep having this cycle of panic, neglect, panic. We have to get out of this cycle so that we can avoid the avoidable death and economic disruption of infectious disease threats.

RPTR MERTENS

EDTR HUMKE

[2:56 p.m.]

Miss. Rice. I couldn't agree with you more. Doctor, can you please tell us what accountability mechanisms are needed so that we can ensure that every penny of Federal resource, that that money is distributed effectively and equitably to local health departments?

Dr. Frieden. So, first off, the CDC works on a system of what are called cooperative agreements that have specific outcome indicators with the recommendation of the health defense operations approach. What we would suggest is specific programs like the CDC influenza program, vector borne diseases, which could be a huge risk for emerging infections, antibiotic risk, food safety, epidemiology and laboratory capacity which we discussed earlier in this hearing, surveillance, workforce, global health security, public health emergency programs, the strategic national stockpile, the hospital preparedness program, and possibly others from Food and Drug Administration and elsewhere.

These are specific lines that have specific accountabilities. And more broadly, we have programs that resolve that every country in the world commit to what we are calling 717, a commitment that every outbreak is identified within 7 days of its suspected emergence, second, that it is reported, investigation started, and control started within 1 day, and third, that within 7 days, a comprehensive, effective response is established. That kind of approach, that is accountability. We need that in this country and around the world to protect Americans.

Miss. Rice. Thank you, Doctor.

Mr. Chairman, I would like to introduce a letter for the record from a group of bipartisan Senators that supports 100 symmetrical broadband speeds as the baseline for Federal funding for broadband networks.

The Chairman. Without objection, so ordered.

[The information follows:]

\*\*\*\*\* COMMITTEE INSERT \*\*\*\*\*

Miss. Rice. Thank you. I would like to offer to yield my final 30 seconds to Mr. Wheeler to, if you could, just respond to some of what my Republican colleagues have talked about today that you can address from your perspective.

Mr. Wheeler. Well, thank you for the opportunity, Congresswoman.

The current program has not worked. It has not delivered us rural urban equivalence. And we want to keep doing it that way? We ought to be saying, let's spend the people's money the same way that private money is being spent. This whole concept of tech neutrality means tech inadequacy. And it means that there are going to be future hearings asking why didn't we do it right the first time?

The Chairman. Mr. Wheeler, you have got to wrap it up, though, because the time has expired.

Mr. Wheeler. I just did. I am done.

The Chairman. All right.

Miss. Rice. Thank you Mr. Chairman.

The Chairman. Thanks.

All right. Next we go to Kelly Armstrong.

Mr. Armstrong. Thank you, Mr. Chairman.

Secretary Moniz, I actually -- I appreciate over the last several years some of your comments and statements that have been supporting natural gas as a bridge fuel, and I promise I am not going to put words in your mouth other than direct quotes, but in 2013 before the Senate Committee on Energy and Natural Resources, you stated in broad terms we find that given the large amounts of natural gas available in the U.S. at moderate cost, natural gas can, indeed, play an important role over the next couple of decades together with demand management and economically advancing a clean energy



system.

In 2019 before the House Energy and Water Development Appropriations subcommittee, you stated, natural gas in particular will continue to play for some time an important role in providing dispatchable electric power generation in high temperature industrial processes, applications that are not readily amenable to non-fossil fuel options.

But I think -- and I appreciate that, and I am going to give you a chance to answer a couple of questions. We have seen too often, and I can use my colleagues in the House, that we have waged a consistent war, at least since my time in 2018, against natural gas despite its benefits in reducing overall carbon emissions in the power sector.

According to the Department of Energy, between 2005 and 2019, total U.S. electricity generation increased by almost 2 percent while U.S. related CO2 emissions fell by 33 percent. EIA calculated that during the same time, CO2 emission reductions from shifts in electricity generation totaled 5,475 million metric tons. Most of this reduction resulted from the increased use of natural gas.

But at the same time, we see the political side of this where we have had a tax on the natural gas production. Last Congress, many, if not all, of the Democratic members on this committee voted to ban liquified natural gas by rail. We have seen all of the litigation and not just in new pipelines but in improving existing pipelines.

So when we talk about methane and reducing methane emissions, one of those factors has to be to replace old pipe that has been in the ground for a long time with new, better pipe and better technologies.

Unfortunately, we see that happen at a way where there is no streamlining to the process, right. We see it with the Enbridge Line in western Minnesota. We have seen it with other lines where you cannot get the new pipeline in the ground without dealing with new permitting, obviously capacity comes into play, and different litigation moving

on.

So how do we -- this will be the short question. How do we bridge those two things? That was a long intro to a short question. We know that this is going to be part of the foreseeable future. It has to be because the technology and the buildout of the infrastructure doesn't exist yet.

So how do we do that while streamlining the process and understanding the realities of energy production and what we need to fuel our economy?

Dr. Moniz. I may have forgotten the beginning of the question by the end of the question, but thank you.

Certainly the quotes -- by the way, I certainly own up to the quotes that you said. I do believe that natural gas will continue, will have to continue to be part of the system, particularly as we see the continued acceleration by the private sector of phasing out coal plants to be replaced by a combination of gas and renewables and battery storage. That will continue.

I do think we need to accelerate the introduction of carbon capture and sequestration on both natural gas combined cycle plants and on industrial facilities, but in order to --

Mr. Armstrong. Yeah. And just real quick, but that is going to require more pipe as well, right?

Dr. Moniz. Yeah. And I was going to stay, with regard to infrastructure, number one, industry has to get in there with both feet on suppressing the methane emissions. That is very, very important, both technically and, frankly, politically to do that.

Secondly, using existing rights-of-way I think for a lot of infrastructure, including pipes, is absolutely essential to minimize any kind of eminent domain and public

opposition.

Mr. Armstrong. And eminent domain law is different in every State, right? Like, North Dakota doesn't have it unless you are a common carrier.

Dr. Moniz. It is different in different States. There are -- without getting into it, the 2007 Energy Security Act did provide DOE with some eminent domain authorities when it overlaps with some of the power marketing administrations.

But the other thing on infrastructure and as much reutilization of infrastructure as we can get is important also, in what is a likely natural gas to hydrogen transition when you look down the road 15, 20 years.

Mr. Armstrong. Well, I appreciate that. If you can figure out how we can deal with the reutilization without numerous lawsuits and permitting hurdles, I am all in.

And with that, I yield back.

Dr. Moniz. Can I just add -- can I just add one thing? For example, we could already now start to move some component of hydrogen and renewable natural gas in natural gas pipelines. We could do 5 percent, maybe 10 percent. So we could start introducing this right now with existing infrastructure.

The Chairman. All right. Thank you.

Now we go to Angie Craig.

Mrs. Craig. Well, thank you so much, Mr. Chairman, for holding this important hearing. There is really no bigger topic we can take on next than revitalizing our Nation's infrastructure and economy. Thank you to our panelists for being here and sharing your expertise as well with us today.

Closing the digital divide between our urban and rural communities is one of my top priorities. As a member of Congress, I have the great honor of representing a district that is part urban, part suburban, ex-urban, and rural. High-speed internet

access is a lifeline to education, to healthcare, and to economic opportunity.

LIFT America increases broadband infrastructure development from 40 billion in full year 2020 to nearly 80 billion for 2022 to 2026. For my constituents in rural communities, broadband access can mean access to potentially life-saving telehealth services, particularly within the realm of mental health services.

So my first question is to Mr. Wheeler this afternoon. You launched the Connect the Health Task Force during your time at the FCC which studied the link between broadband and health. In your testimony, you mentioned the need for internet access to sign up for a COVID-19 vaccine, but in your view, what are some of the other ways that broadband impacts healthcare delivery and access? And what do you personally hope we maintain, having come through this public health crisis that we have learned as we move to the future of telehealth?

Mr. Wheeler. Well, thank you, Congresswoman Craig. I mean, you are right. And credit needs to be given where it is due. It was Commissioner Mignon Clyburn who took on the personal responsibility on that telehealth task force. And I was privileged to travel around the country with her and see how technology is being put to work. There is a very simple issue here.

The doctors are here; the people are here, okay. We have to be able to connect them. We can't connect them with yesterday's slow speed technology, the kind of technology that we have been seeing hiccups with today. You can't have that happen in the middle of an exam. We need to have quality connectivity between the doctors and the patients so that wherever you are, you get quality telehealth services, and that is based on quality broadband connectivity.

Mrs. Craig. Thank you so much, Mr. Wheeler.

Dr. Frieden, I want to turn to you. As you noted today, COVID-19 has also laid

bare decades of underinvestment in our country's public health infrastructure. In my home State of Minnesota, community health centers serve around 200,000 people annually and employ over 1,700 full-time staff.

Centers like Open Door which operates a dental clinic in Jordan, Minnesota, provide an invaluable service to our patients and our community. The \$10 billion in capital project funding authorized by LIFT America would provide clinics like Open Door with the ability to expand their facility and their services to reach more patients in my district.

Dr. Frieden, can you expand on the importance of capital project funding at the community level and why such funding must be predictable, moving forward?

Dr. Frieden. This is really important, and it goes into the bigger issue of strengthening primary care. We spend, last I saw, more than \$3.5 trillion a year on healthcare, and we get worse health outcomes than any other high income country. We live 4 years less with more disabilities, and we pay more. We are a negative outlier.

And earlier I mentioned some data I sent around, that we will send around after that demonstrates that part of the fix has to be strengthening primary care systems, and community health centers are a critically important part of that effort.

Now, community health centers don't have the kind of access to capital that hospitals have. Community health centers serve communities, urban, rural, generally underserved. It is crucially important that they have additional funding so that they can serve more patients.

Mrs. Craig. Well, thank you so much, Dr. Frieden. And as a new member of the committee, I am going to yield a whole 15 seconds back to my chairman before --

Dr. Frieden. If I can just take 2 seconds of that to say it has to be sustained because it can't be just one time. It needs to be continuing support. Sorry.

Mrs. Craig. That is okay, Dr. Frieden. Thank you, and I yield back.

The Chairman. Thank you.

Next is John Curtis.

Mr. Curtis. Thank you, Mr. Chairman, and thank you to our witnesses. It is amazing that you will sit and stay with us this long.

I would like to spend my time talking about the digital divide issue, broadband. I too have a district that is urban and rural, but I think I bring a pretty unique perspective to this discussion. And that is several years ago, almost a decade ago, I was a mayor of a city, and we had tried as a municipal government to bring broadband into our city. As a matter of fact, my predecessor spent more per resident than this bill does, if we put it on a per resident basis, and we failed. I took over a failing network.

By bringing the private sector in, we were actually able to offer gig speed. Now, remember, this is nearly a decade ago, gig speed was a deal back then, for about 70 bucks per resident. But more important, every single resident in my city had free internet and free connection to that internet.

Well, how did we do it, and what did we learn? Well, we learned that government is ill equipped to deal with the fast changing nature of technology and especially broadband. I have heard today pay it once. Get it right for the first time. My experience says you can't do that with this. It is changing so fast and needs so much continual investment that government can't come in and write a check and be done with it.

From my experience, and I think if we are all honest with ourselves, we know by the time the money is spent in this bill, if it is passed, the technology that we are spending it on will be out of date. It is just the reality. 7 years ago, we made national news by having a gig speed as a city. Today, we look back, and we kind of laugh at that gig

speed.

Mr. O'Rielly, what is your experience, and who is best equipped to deal with the fast changing nature of broadband, government or private sector? And let me acknowledge I think both have a role, but are we overlooking the valuable role of the private sector here today?

Mr. O'Rielly. Yes, I would agree with you. I think it is both a private sector role and a government role. And I spent time in the government at the FCC working on these issues and working to make sure that the private sector can deploy the network as far as it possibly can. And in those areas where the market wasn't succeeding, how do we differently design those subsidy programs to entice them to serve the other portion of the population that is not being addressed today.

And each market is a little different, you know. We have done this through reverse auctions which I helped lead at the commission. And so I think, you know, we have learned an awful lot through the process, and we are fine tuning it. And we are finally down to the last 4, 5, 6 percent of the population that is really hard to serve, that is not necessarily always in the urban centers that you represent.

Mr. Curtis. Yeah. So my district --

Mr. Wheeler. Can I talk about --

Mr. Curtis. Mr. Wheeler, I have got a very limited amount of time. Mr. Chairman, please help me out here. This is my time, and I have got just a precious little bit of it.

The Chairman. The member should only address your response to the people who have been addressed to. Thanks.

Mr. Curtis. So my district would represent what you are talking about. We have done an amazing job of getting a good gig speed into much of my rural district. It

is that last little bit of it that we are just not done with.

Now, I am attending this hearing today in a different location. I have got at times as much as -- as little as 4 megs up -- excuse me -- 4 megs down and 10 up, and I had no problem with this hearing. So I don't want to waste my time on this, but I want to emphasize what my colleagues have said, that we don't need 100100 to get what we need to do here.

Now my last question, Mr. O'Rielly, is can we get fiber broadband to every American household without permitting reform? In my district, it takes 9 years to permit across Federal land. Are we missing the point here? I know it is not the only part of our problem, but are we missing the point, and what do we need to be doing with regulation?

Mr. O'Rielly. I fully agree that a number of legislative efforts that the committee members have introduced should be part of any package. The number of burdens that have been placed on industry on the permitting side, on the cost side, on terms of the environmental regulations, and then Federal lands slows down projects considerably and prevents the deployment that you just spoke of. And so to get those things to happen --

Mr. Curtis. I have got just a few seconds left. Let me make this point. As a mayor, I also learned that when we brought in and did an infrastructure project, if we spent \$1 of Federal money, it increased the cost of our project by 30 percent because of the excessive regulations.

If we want to give a 30 percent discount, right, to this project right off the top, let's figure out how to get government to be more cooperative with State and local governments in their efforts.

Thank you, Mr. Chairman. I yield my time.

The Chairman. Thank you.



Next is Lizzie Fletcher, Congresswoman Fletcher.

Mrs. Fletcher. Thank you so much, Chairman Pallone, for holding this hearing today, and thank you to all of our witnesses for your testimony, your insights about the challenges and opportunities before us in this moment, and then in this infrastructure legislation have been really, really useful. And there are so many issues to cover, but I would like to use the few minutes I have to talk about some of the issues that are priorities for my constituents here in Houston.

Perhaps it is not a surprise, then, that I will direct my questions primarily to you, Dr. Moniz. In your written testimony and during the hearing today, you have talked about the importance that carbon capture utilization and storage will play in meeting a mid century net zero goal. And this is an area of great interest here in Houston. There is large scale support for CCUS. I have met with a number of my constituents and folks who are actively working in this area right now. We worked hard to address some of the 45Q tax credit guidance in the last Congress.

And here in Houston, we are really well situated to lead the way in the technology with our industrial presence, the existing pipeline infrastructure, and our geology. But despite all this interest in all of this work, we just haven't seen the kind of deployment that we need to meet our carbon reduction goals.

So in your testimony you say that in order to create a large scale CO2 management infrastructure, there need to be new regulatory frameworks with additional financial incentives. So I would like to hear your thoughts about sort of whether and how Congress should assist in this process, what the framework would look like, and what funding mechanisms you think would be most effective for these critical projects?

Dr. Moniz. Thank you, Congresswoman Fletcher. First of all of course, as you know very well, your region would be an excellent place for one of those combined

hydrogen CO2 hubs that I mentioned. With industry, with CO2, you already have hydrogen, not very far away, serving refineries and the like.

In terms of the need, the incentives, well, one of the things is I would say the DOE carbon safe program to characterize major CO2 sequestration hubs could be supported more strongly and expanded in scope. That would be one thing.

Secondly, I think, I appreciate, especially in the work of the Energy Act of December in terms of extending the 45Q tax credits. Frankly, I think more could be done there because in particular, to push the CCS on NGCC plants, I think we need a little bit more oomph. But the other thing is I think that we need to really get together in a strong push to UCCS right now across much more of the industrial sector. That is where you have much more low-hanging fruit, some of it in Texas, some of it elsewhere. For example, in California we found that all four ethanol plants right now would be in the money if they put CCS on those plants.

Third is, again, this issue of permitting. There are -- in my view, we are going to have to move ultimately when we start talking about very large scale CCS to addressing the long-term liability issues. I believe we are going to need third-party players. I mentioned a possible utility model for CO2 disposal. Well, when you are doing that, you have to have some insurance approach to the long-term liability issues to turn it over to a third party.

So those are a few examples. There is a lot could be done, and of course, also in December, with the authorization of six major CCS projects, it is really time. It is really a good time to really implement those because we need to show how those work in both the power and in the industrial sector, in my view, by 2030 so that they are ready to really scale in the 2030s.

Mrs. Fletcher. Terrific. Thank you. And one follow-up question in the few

seconds I have left. You mentioned earlier in your testimony, I think in response to a question from Mr. Sarbanes, about the need for direct removal or direct air capture. And that seems like a critical part of the path forward. Can you talk a little bit just about how you envision that direct removal and what we can do in Congress to facilitate that as well?

Dr. Moniz. Yeah. I think this is an enormously important area. Congress did add almost \$100 million to CDR last year, but we estimate a \$10 billion RD&D program over 10 years as needed. I want to emphasize it is not only direct air capture; it is many other approaches as well, terrestrial, mineralization, upper layers of the ocean getting more alkalinity in the ocean. It is a broad program and very, very high priority, in my view.

Mrs. Fletcher. Okay. Well, thank you so much, Dr. Moniz. I have gone over my time.

So, thank you, Mr. Chairman. I yield back.

The Chairman. Thank you.

So now we go to Buddy Carter.

Mr. Carter. Well, thank you, Mr. Chairman, and thank all of you for being here. This is certainly an important hearing, and we appreciate all your expertise.

Mr. O'Rielly, I want to start with you. In preparing for this hearing, I reviewed this legislation and this bill, and I reviewed it with my staff as well. I am having a little bit of trouble, and I wanted to know if you could help me understand exactly what digital equity means. It seems like it is very broad to me. It seems like it includes not only speeds but devices, applications, contents, digital literacy, and a whole lot more. And I just want to know if you can articulate for me exactly what digital equity is?

Mr. O'Rielly. Well, I think the term is intended to be very broad to meet a

population that may not be a subscriber today or may not be a user and to bring them online and to deal with all of their potential needs, and you are right. As I read it, it deals with devices and literacy and a bunch of different components all tied to one.

Mr. Carter. Is there a clear understanding of what the Federal role should be in any kind of digital equity program?

Mr. O'Rielly. Well, I have to defer to those that are still in the roles, but I don't know that I can exactly determine where this money would go or how you would spend it. I worry that it could be, you know, misused or could go to some really suspect programs. We have done that in the -- we had that in the 1990s. There were a couple different programs not exactly called digital equity, but they connected a number of different communities.

Some of it was wasted, and you know, some of it just didn't go for what was intended. And so I think it was very -- you know, it can be vague, and I don't want to criticize the intent, but I think that there is some -- it certainly could be addressed.

Mr. Carter. And, you know, I have to say I believe it is intentionally vague, just for that reason. You know, I am not trying to question anyone's intentions here, but I do believe that is the case. Don't you think that language like this, could it potentially -- the \$1.3 billion digital equity program, could it potentially prevent it from simply replacing the Lifeline program or the Emergency Broadband Benefit program by just subsidizing the cost of internet?

Mr. O'Rielly. Well, it could be a source for that purpose. It can also do everything else that those programs don't do, and you can have this big, huge package of services, potentially. I don't know exactly what could go in the space at the current moment.

I will tell you this, though. As a former regulator, as I read it fairly broadly, and I

can see where you can, you know, basically spend the money anywhere you want to and make up an argument for where the money should go. And that doesn't mean it would be wasted, it just means that you could -- you know, when the Congress writes very broad language, it gives a regulator broad authority to kind of interpret where it wants to go. If it is just that is what the goal is, well, then, that is the public policy decisions being made.

Mr. Carter. Well, and that is what concerns me because I feel like we defer too many times to the agencies and don't make our intent clear. So that is why I am concerned about this because I think it is extremely broad, and I think it leads to what some people may interpret to be waste. And we need to be more specific, and I just think that we are falling down on our responsibilities as Members of Congress to do just such. So let me ask you -- go ahead.

Mr. O'Rielly. I fully support addressing affordability, and I think there are ways to go about it, and Congress has looked at some of that in a bipartisan way in the EBB program. I couldn't agree with you more that the more specificity Congress can provide, the better. And as to which way he wants to go, even as a former -- even if I disagree, it is irrelevant. Congress has decided.

Make it as specific as you want to. That helps the agency. It just is a decision you make, and the agency can bless it rather than trying to guess what the interpretation should be and going down roads that it wasn't supposed to go.

Mr. Carter. And I couldn't agree with you more. And I could name numerous, numerous examples of where we have done just such. So, listen. One last thing before my time's running out here, but this act proposes a number of different concerning changes for me such as redefining underserved areas. What do these changes mean for satellite and fixed wireless connections? And because of those

changes, ultimately what do they mean for consumer prices and competition?

Mr. O'Rielly. Well, I think, you know, as defined by people who advocate for it, they want it to be fiber and to exclude all other technologies. And so in terms of competition, there necessarily wouldn't be -- it will be either fiber or not. Maybe in some places, there would be multiple fiber providers, but really, you wouldn't see competition, and you would have to -- you know, and that would be -- you know, then they would regulate the rates and different things to try and keep the rates down through government means.

Mr. Carter. Great. And that is all my time. Thank you all. Thank all of you, and especially you, Mr. O'Rielly.

And I yield back.

The Chairman. Thank you.

Next is Dr. Kim Schrier.

Ms. Schrier. Thank you, Mr. Chairman, and thank you to our witnesses. This is such an interesting discussion.

The LIFT Act highlights the need for electric vehicle charging infrastructure in low income neighborhoods, but we also need to support the demand for those charging stations with vehicle exchange programs for older, more polluting vehicles and providing secondary market credits to make electric vehicles more accessible. And I think it is important to remember that right now, about 60 percent of electric vehicles are purchased by people with household incomes above \$150,000, and most Americans right now are not in the market for a new car, so we have to drive down emissions everywhere, especially in areas of disproportionate impact and public health concerns. And we have to remember also that electrification for many areas means transit, school buses, even reducing emissions from medium and heavy duty vehicles which represent a

quarter of emissions but only 7 percent of vehicles.

So Secretary Moniz, how can we better engage with underserved communities? Given this understanding and given our concerns about equity, how can we also incentivize the purchase of electric vehicles, including used ones, so that people in all income brackets have access?

Dr. Moniz. Well, thank you, Congresswoman Schrier. First of all, I would like to point out that I think you put your finger on a very important point, and that is a focus not only on the, say, light duty vehicles but on the fleets that are operating in urban environments all the time. It would be very important, and often, that would certainly help some of the underserved communities particularly in these urban areas. And with the reduction of battery costs, that has been very, very substantial. As I have already said, on light duty vehicles, we will be seeing -- I think we have already seen cost parity in terms of lifetime costs, but we will be seeing equivalence as well in the capital costs within years. That also applies to the kinds of fleet vehicles, especially because they have big advantages in their charging infrastructures.

Now, in terms of the light duty vehicles, first of all, you are absolutely right that the turnover issue is an important one. And the incentives that we have had so far for purchase of EVs, to be perfectly blunt, has favored more well off people because up to now, the capital cost has been higher. We need to incentivize it. We may need to have other Cash for Clunkers kind of programs, help with the turnover.

People driving less in COVID, is going to extend the life of the current vehicles. So I think you are right. Incentive programs targeted more at the underserved communities would be welcome, but then we have to be creative on the charging infrastructure because the suburban model is not the one that is going to work.

Ms. Schrier. That is right. And, of course, attention to public transit. Thank

you for talking about the delivery vehicles. We have a bill for the U.S. Postal fleet. We have heard about Fed Ex. I really appreciate those comments as well.

I am going to turn to Dr. Frieden really briefly here because again, in the context of underserved areas, I am thinking about hospital deserts, even within urban areas, even like in Washington, D.C. This is sort of like grocery store deserts, and as we think about the impacts of COVID-19, I am concerned about how many hospital beds we have per capita in this country compared with other nations, what that means for underserved or unserved communities.

And so I was wondering, Dr. Frieden, if you could talk just a little bit more about the importance of investing in the physical infrastructure of the healthcare safety net and how those communities could benefit from modernization and maybe how that could impact health disparities.

Dr. Frieden. Well, first, there are clearly hospitals in great need. Those include both rural hospitals and some hospitals in central cities that don't have the kind of revenue streams that others have. But unless we do a much better job at prevention and public health, we will never be able to build enough hospital beds. We have an aging population with more morbidities like hypertension, diabetes, and we have to fix primary care. We have to fix public health, and that is the route to both a more productive and a healthier population.

Ms. Schrier. Thank you. As a primary care provider, I appreciate those comments.

I yield back.

The Chairman. Thank you.

Next is Congresswoman Trahan.

Mrs. Trahan. Thank you.



Thank you, Mr. Chairman, and the committee for convening this important hearing. I really appreciate the witnesses' time today, your depth of knowledge and insight.

You know, my district is home to the first community health center sponsored residency in the Nation, Greater Lawrence Family Health Center, which offers primary healthcare to more than 62,000 patients in my district. Centers like these across the country are doing double duty, responding to the COVID-19 pandemic while also training medical professionals who will go on to serve the most vulnerable in our communities.

The pandemic highlighted the need for our country to rethink and be creative about the way we provide healthcare, especially to areas that serve high proportions of low income and minority patients, rural areas, and the areas that operate tribal or urban Indian health programs.

The LIFT America Act authorizes \$500 million in grants to support the improvement, renovation, or modernization of infrastructure at teaching health centers and behavioral health centers. These grants could mean state-of-the-art teaching equipment, long overdue building repairs, and even renovations that expand capacity.

Dr. Frieden, can you speak to the importance of infrastructure investments in qualified teaching health centers and specifically how these investments could lead to a future healthcare workforce prepared to care for historically underserved populations?

Dr. Frieden. Well, the issue of graduate medical education and funding of medical centers is a complicated one, to be frank, and I think what we see is that many of these centers perform a huge amount of service for populations that aren't adequately served otherwise. And we don't have really a sensible business model for that, a sensible way of paying and assuring quality and continuity of care.

I was encouraged to see the mental health provision in that because mental

health is neglected, and it is really important. If you look at disability, if you look at suffering, there is a lot of mental healthcare that is needed and not obtained. There is something in mental health, what is often called the rule of halves. Only half of people are diagnosed. Only half of those are adequately treated.

So support to our behavioral health colleagues is extremely important. And for all of these, we have to strengthen primary care, including primary care systems that work as teams and have a mental health professional as either a virtual or a present member of that team.

Mrs. Trahan. I really appreciate that. That was actually my second question in terms of improving the infrastructure of behavioral health centers and increasing access to treatment for addiction, so I appreciate, I appreciate you tackling both questions all at once. I am really excited that the LIFT Act could mean that quality and access to healthcare in this country will improve.

I think I have time to actually switch gears and ask another question. I know it has been touched upon several times in this, but my district is home to passionate entrepreneurs that combine world-leading research from MIT and Boston College, Secretary Moniz' alma mater. With the work ethic of the Merrimack Valley which is, you know, the start of the industrial revolution, they are developing inputs to the green economy, magnets for offshore wind, powders for batteries, and new energy storage techniques.

But one challenge these innovators face is that even when their processes are more environmentally sustainable, they struggle to build components at a price that is competitive with overseas suppliers, and many times, they struggle to even source those inputs from the U.S.

So, Secretary Moniz, with my remaining time, in your testimony, you emphasized

that as the market for electric vehicles increases, the global battery manufacturing capacity and number of public chargers need to increase by an order of magnitude. Beyond permitting which is also something you mentioned, can you describe other ways we can improve and expand battery manufacturing in the U.S., including by developing complementary policies that might incentivize domestic battery manufacturing?

Dr. Moniz. Well, again, Congresswoman Trahan -- by the way, and I am from Fall River, not Lawrence, but anyway. As I mentioned earlier, there are DOE programs that already have been used and could be reenergized, if you like, to help with battery manufacturing. But there are huge also supply chains there, cathodes and anodes, et cetera, where I think the kind of entrepreneurial activity that you are referring to will come into play.

Now, I personally believe -- and this is always tricky. But I personally believe that we need to develop, without prejudging the answers, but we do need to develop not -- not necessarily a Made in America only strategy but something that takes into account the security of critical supply chains. And there is no doubt that batteries, for example, are one of the areas that is critical.

I think in my testimony it points out that today battery manufacturing is only 10 percent in the United States. I mean, China is the biggest market right now but not by that kind of a margin. And so it has been very welcome to see more manufacturing coming into the United States, but we need more of it.

Of course, creating the market is ultimately the answer. And that is where with the announcements of GM and Ford and the history of Tesla, many new models coming into the market, including foreign suppliers with U.S. manufacturing plants, if you have got the market here, I mean, that really provides an enormous incentive for the supply chain to be here as well.

Mrs. Trahan. Yeah. I couldn't agree more. I know I am over my time. I appreciate all of that. Thank you.

I yield back, Mr. Chairman.

The Chairman. Thank you.

Next we go to Robin Kelly, Congresswoman Kelly.

Ms. Kelly. Thank you, Mr. Chairman, and thank you for holding this hearing, and I want to commend you for putting together this legislation to make long overdue investments in our Nation's infrastructure. This holistic approach will allow America to modernize our system and improve the delivery of healthcare, energy, and the internet.

As we have all adjusted to online and remote work, we have seen just how important connectivity is to education and healthcare. Historically, as we know, rural and low income urban communities have lacked access to high speed connectivity. It is perhaps not surprising that companies have invested the highest speed and more reliable networks in wealthier communities, but this is where the government can and must step in. As more and more essential services are offered primarily or wholly online, it only exacerbates the divides that already exist in healthcare, education, and commerce.

Commissioner Wheeler, as companies build out the next generation high speed networks, we cannot let these communities that were left behind during the last upgrade be left behind again. Are there provisions in the LIFT Act that will address these disparities and ensure that they are not repeated?

Mr. Wheeler. Thank you, Ms. Kelly. That is a spot on question because what we need to be doing, and I think what the LIFT Act is trying to do, is to focus on fiber so that you build once and don't have to come back and rebuild later so that some segments of society have to play catch up ball.

There is, in my testimony, a chart that shows the growth in computing power

which is Moore's law which we all are familiar with and the growth in fiber throughput called Keck's law which parallels it.

And so if we want to talk -- and the question was raised. The statement was made a while ago about use the money wisely. If we want to use it wisely, we ought to spend it as wisely as the companies are spending their money which is to build fiber. Because once you have got fiber in the ground, then it becomes a matter of the electronics at both ends and the increasing throughput capability of fiber, and that is how you keep up.

So your question is spot on, that it is possible with this kind of an authorization based on the study that we did to have every home in America wired with fiber to future proof for tomorrow and have no second class service.

Ms. Kelly. Thank you. Last Congress, I introduced H.R. 2119 which amends the energy policy of 2005 to increase the authorization for a grant program that was set up to provide grants for States to improve the energy efficiency of public buildings and facilities. That provision is included in the LIFT America Act we are considering today. State and local communities often lack the financial resources to undertake large scale efficiency retrofits for public buildings. This grant program makes it easier for States to make these investments which, in turn, lowers the utility bills for the community operating the building.

Mr. Secretary, do you agree that making our public buildings more energy efficient is effective at improving our energy structure? And is there a role for DOE to play in supporting States and local communities who may lack the resources to retrofit public buildings? Thank you.

Dr. Moniz. Yes. Absolutely, Congresswoman Kelly. We have strongly advocated, in fact, as an example, a program where the DOE could award, if there were

the appropriations, of course, energy efficiency upgrades to the hundreds of thousands of public buildings at the State, county, and local level. This would be -- often, as I think you know, the funds are not there without some help. This would be great for jobs. It is jobs immediately. And, of course, we hope we are coming out of COVID now, but still, there is going to be some residual reluctance, I think, in many families of having workers coming into the home. We hope that is overcome soon. But that problem doesn't exist for these public buildings which often will have at least one shift of the day, if not two. They are prime real estate for efficiency upgrades, so that could be a very, very important program.

Ms. Kelly. Thank you so much, and I yield back.

Thank you, Mr. Chair.

The Chairman. Thank you.

Next we have Scott Peters. I don't know if he is available. He was there. He was on before, but I -- well, we can go to Yvette Clarke and come back.

Congresswoman Clarke? She is on mute. I don't know if she knows that we are asking for her.

Ms. Clarke. I am trying to unmute.

The Chairman. Okay. That is good. I can hear you.

Ms. Clarke. Okay. Can you hear me now?

The Chairman. Yep. Yes.

Ms. Clarke. Thank you very much, Mr. Chairman, and let me thank you and Ranking Member Rodgers for convening this very important hearing on the committee's LIFT America infrastructure proposal.

As our Nation battles with interrelated crisis around COVID-19, the economy, racial injustice, and climate change, I believe we have a unique opportunity to meet the

magnitude of this moment with bold legislation that will finally lay the groundwork for a 21st century America that prioritizes workers, safeguards our climate, and addresses the deep racial and economic injustices that have persisted in our Nation for far too long.

I am excited about the fact that we recognize now that it is time for us to turn the page on our 19th and 20th century infrastructure and build a new infrastructure worthy of the 21st century. It is my hope that we can use this legislation as a starting point to work with the administration and with our colleagues in the Senate to create a forward-looking infrastructure and recovery package that allows us to truly build back better.

Secretary Moniz, you mentioned in your testimony how the deployment of public EV charging stations will need to scale up by orders of magnitude to meet the widespread adoption of electric vehicles over the coming decade. And I agree with your assessment, but I also think it is crucial that we keep equity at the forefront of this conversation. History has shown us that unless we are intentional in our actions, the communities who have the most to gain from new clean technology, particularly in terms of environmental and public health benefits, are often the last to receive the least investment.

So, Secretary Moniz, do you agree that we should also be focused on equity and access as we look to increase the deployment of EV charging infrastructure in communities across our Nation?

Dr. Moniz. Absolutely, Congresswoman Clarke. As you said very well, these are our communities where cleaning up the air would have a particularly important effect in these communities, so absolutely.

On the charging stations, it will take creativity, given the patterns of multi-family units and the like, but that can be managed. As we also discussed, there has to be

incentives as well for being able to introduce the vehicles and the delivery vehicles, et cetera, in those areas.

Also, if I may comment, and this is a comment to you but also to the chairman, that I really appreciate your emphasis on a 21st century infrastructure. We have heard in this hearing a lot about, you know, the EV charging infrastructure. We have heard about the broadband. The reality is this is a bill focused on going to where the puck is going to be, and that is what you need to do on infrastructure. You build for 15 years out or 20 years out. You don't build for tomorrow.

Ms. Clarke. Thank you. And I am so pleased to see that so many major pieces of my Electric Vehicles for Underserved Communities Act co-led by Congresswoman Barragan is included in this infrastructure package. Not only does building back better mean ensuring a strong focus on equity and justice, it also means building back smarter, and that is something that I have prioritized as co-chair of the Smart Cities, Smart Communities Caucus.

And I am also focusing on my Smart Cities, Smart Communities Act with Congresswoman Suzanne DelBene which is part of the LIFT America package. Our proposal would establish a pilot program to generate partnerships between DOE, the national laboratories, and communities seeking to leverage smart cities technologies.

Secretary Moniz, do you agree that communities across America could benefit from increased collaboration with DOE and the national labs to better facilitate research, development, and deployment of smart city technology?

Dr. Moniz. Yes, absolutely. And, in fact, we say in the testimony that when we think about smart cities or smart communities, the real focus has to be on what we call the backbone. The backbone is kind of coherently developing smart electricity with telecom, linking it to big data analysis, AI, and then the people of that city and the people



who are attracted to that city will exercise all kinds of entrepreneurial juices to use that backbone. And, of course, the DOE and the laboratories are steeped in those technologies.

Ms. Clarke. Thank you very much, Mr. Secretary.

I thank you, Mr. Chairman, for this hearing, and I just wanted to say to Dr. Frieden that I couldn't agree with you more about the need for us to build out a 21st century public health infrastructure. What we experienced here in New York City as the outbreak epicenter of the pandemic, knowing that we had one of the strongest public health infrastructures in the Nation at one point in time, and to see that we weren't prepared, that we really had a flawed system is a dear price that we had to pay, and I hope that we'll look at the need for a national public health infrastructure.

And thank you for all of the work that you all do. And I yield back, Mr. Chairman.

The Chairman. Thank you, Congresswoman.

Let's see. Several members have come back. I think the next one is Scott Peters.

Mr. Peters. Thank you, Mr. Chairman. I appreciate the irony of having the internet difficulties during this hearing, but thank you for holding it.

And as we have heard from Secretary Moniz today, modernizing the energy infrastructure is a vast undertaking that includes expanding and upgrading long distance high voltage transmission systems, building out CO2 pipelines and calls for CO2 storage, scaling up hydrogen technologies for use in transportation and power generation, rolling out EV stations, decarbonizing natural gas systems.

The LIFT Act and its companion, Clean Future Act, takes significant steps to address these critical infrastructure challenges and ratify that part of that discussion has been based on the Power On Act that we drafted to develop an interstate high voltage

macro grid.

Secretary Moniz, you have discussed the concept of collecting energy infrastructure around hubs. And I believe I was actually talking this week about the concept with Peter Fox Penner of Boston College who I believe works with you. The notion involves integrating the various energy systems.

The 2021 National Academy of Sciences report concluded that building a national hydrogen pipeline network will play an essential role in meeting a zero emissions target by 2050. And in appropriations, we have supported for hydrogen -- we provided support for hydrogen pipeline research at DOE.

But could you explain a little bit more about how the energy infrastructure hubs might work and how that might look to lay people like us and specifically about co-locating hydrogen and CCUS hubs and how that might accelerate the hydrogen economy.

Dr. Moniz. Yes. Thank you, Congressman Peters. Am I on mute? No. I am okay.

In fact, let me start by saying that one of the studies we did was specifically for California CCS. And what it showed there, there were about three natural hubs in the State where you could really focus on the infrastructure in those hubs without having to worry about, at least, initially, you know, a macro infrastructure cutting across everything.

And, of course, it is not only carbon dioxide. But if you look at -- like, one of those hubs involved, you know, the Long Beach Port. And clearly using hydrogen in that port, electrifying the port would be a tremendous step forward. So, really, a comprehensive hub of that type.

As we looked around the country, and that was the figure in the written testimony, looked around the country, we saw similar kind of accumulations of large

industrial activities with the opportunities for sequestration, with the opportunities for supplying hydrogen to those industrial facilities, possibly to the power facilities, and utilizing, to the extent possible.

That is where, by the way, your support for research on hydrogen pipelines is really important because the extent to which you have perhaps pipeline structures that could employ at different times, of course, CO<sub>2</sub> and then hydrogen could be a very, very efficient way of doing the infrastructure evolution.

Mr. Peters. Do you have a sense that the bill before us will adequately accommodate and promote the development of energy infrastructure hubs as you imagine, or should we make changes and amendments to it?

Dr. Moniz. I think it could be strengthened. I think it is an important organizational concept. And as I said earlier, one way would be also to focus on a Federal program to, in some cost shared way, develop two or three, at least, of these regional hubs certainly in this decade.

And that would -- you know, doing by -- I mean, doing by example would be a tremendous way for committee and the Congress to get this kicked off.

Mr. Peters. We would like to follow up with you and your organization offline to sort of come up with ideas we can offer up to the committee.

I also want to comment, real quickly, on methane emission strategy. The EU commission wants to review, obtain substantial reductions by 2030. And it is interesting that the French government blocked a domestic company from signing a \$7 billion contract for liquid -- LNG from a facility in Brownsville, Texas, because U.S. natural gas was too dirty.

So there is an economic incentive to deal with this. Could you elaborate on what kind of future policy and regulations you have in mind for managing emissions from a

natural gas system?

RPTR MARTIN

EDTR HUMKE

[3:57 p.m.]

Mr. Moniz. Well, first of all, I think the industry has got to be full in on getting methane reduced, but there are also new technologies. For example, you can do electric drilling. That is being advanced. So we think -- for example, on LNG specifically -- and I was part of a project that was looking at the architecture -- we think that you could do a net-zero LNG facility from wellhead to dock, for example, you know. These are the kinds of initiatives that we need.

The LNG exports, I think, remain very critical for our allies, and so I think going domestically to net-zero would be a very, very good move.

Mr. Peters. Well, we will look forward to discussing that more with you. My time has expired.

Mr. Chairman, I yield back.

The Chairman. Thank you.

Next we have Congressman Bobby Rush.

Mr. Rush. Thank you, Mr. Chairman, and hello to our witnesses. Good to see you all again. Dr. Moniz, Dr. Frieden, Commissioner O'Reilly, and Commissioner Wheeler, it is certainly good to see you all again. And you all have really passed the durability test for today, and I want to thank you so much for your fine testimony.

Last week in a shocking analysis, the Chicago Tribune recently found -- and I quote -- that more than 8 of every 10 Illinoisians live in a community where brain-damaging lead was found in the tap water of at least one home during the past 6 years, end of quote. The analysis also found that Illinois has more service lines made of toxic metal

than any other State.

Mr. Chairman, I ask for unanimous consent to insert an article from the Chicago Tribune explaining their analysis into the record.

The Chairman. Without objection, so ordered.

[The information follows:]

\*\*\*\*\* COMMITTEE INSERT \*\*\*\*\*

Mr. Rush. Fortunately, the LIFT Act includes \$4.5 million for lead service line replacement, with a priority on environmental communities.

Dr. Frieden, can you speak to the reason why replacing these pipes should be a top priority for public health and safety?

Dr. Frieden. Thank you very much, Congressman, and thanks for raising the issue.

Lead poisoning remains a significant problem, not just for kids but also for adults. There is growing evidence that it increases blood pressure and has other health effects among adults. It is a toxic chemical, and we want to get it out of our environment. That is going to take work. Water is one of the sources. Had we done a better job of controlling lead paint, what we are seeing is the residual sources are showing up, and that includes lead service lines.

Lead service lines and lead poisoning have long-term negative consequences on a child's development, and the modelling studies suggest that those consequences have very large economic and educational impacts in terms of the productive capacity of that individual, the societal costs that they will contribute to or require in their lives.

So eliminating lead poisoning is not only an inspiring goal, but it is possible, and efforts to do that by addressing all of the sources, including water, are important.

Mr. Rush. Thank you.

Secretary Moniz, today's legislation also invests over \$100,000 million in clean energy, energy efficiency, clean ports, smart communities and electric vehicles. Investments of this magnitude and in these areas support our role of creating a cleaner economy with high quality, good-paying jobs.

Secretary Moniz, during the recent pandemic, the U.S. Energy sector established

the USEER report, and I want to thank you for energy fueling initiatives for this USEER report. Considering your work, sir, will you please describe the current state of the energy and job market and how investment of this variety will support job creation?

Mr. Moniz. Thank you, Congressman Rush. It is great to see you again.

First of all, in doing five annual energy employment reports pre-COVID, a very important result is that we found that job growth in the energy sector was double the pace of job growth in the economy as a whole.

So, clearly, there is a high leverage here in clean energy to also try to dig ourselves out of the jobs' hole that we still have from the COVID period. Unfortunately, we don't yet have the data for 2020, and I am hoping that the new administration is now going to get that project going because, frankly, let's say it fell through the cracks in the last administration, but getting a rebase lining for 2020 when we had the COVID impact will be very, very important.

And looking at the patterns of who lost jobs, where jobs were lost. For example, in energy efficiency, we know that 3 years' worth of job loss, of job gains, excuse me, were lost in that one year. So I am hoping that that exercise will happen very, very soon to collect the data from 2020.

Mr. Rush. Thank you.

Mr. Moniz. And, by the way, the Congress has spoken clearly in terms of appropriating funds to the DOE specifically to execute that job.

Mr. Rush. Thank you.

I yield back.

The Chairman. Thank you, Bobby.

And I think last, but not least certainly, is Kathy Castor.

Ms. Castor. Thank you, Mr. Chairman. I am excited that I can bat cleanup



today, and I want to thank our witnesses for the quality time that you all have spent with the committee today.

It has been heartening to hear all of our colleagues bring forth their ideas to help LIFT America and create jobs, and it is clear that the LIFT America package will really help us build back better and create those good-paying, family-sustaining jobs that we are going to need as we move out of COVID.

Dr. Frieden, it is really good to see you again. We thank you for your leadership. It is clear we have got to rebuild our public health workforce, infrastructure, data systems, and I appreciate your endorsement of this, of the ideas in this legislation.

But I want to focus with Secretary Moniz here on the clean energy future because more and more American families and businesses, consumers, they are demanding clean energy. They know that it is cheaper. They want the modern tools of energy efficiency to help them lower their electric bills.

In fact, there was a recent analysis by vibrant clean energy that found that a clean electric grid with expanded distributed solar and storage is \$88 billion less expensive than business as usual.

If we just kept doing what we are doing, didn't make any changes, if we invest in clean energy, \$88 billion in benefits, and that is just one of a whole bunch of reports that have informed what is happening here in the LIFT America Act, including the big report last year out of the House Democrats, the Solving of Climate Crisis Report, and I want to thank Chairman Pallone for incorporating a lot of our recommendations into this bill.

But, Secretary Moniz, we have discussed everything today, the grid enhancing technologies, the distributed solar power, how we advance ports; but let's talk about the jobs, the opportunities for good paying -- a lot of good jobs, union jobs with fair labor standards.

This appears that we have an enormous opportunity here all across the country to create all sorts of different jobs. Tell me what really excites you when you think about our clean energy future and helping tackle climate change in the jobs piece.

Mr. Moniz. Well, thank you, Congresswoman Castor, and thank you for your heroic effort last year on that massive report that you also led.

With regard to the jobs -- well, first of all, as I have said a couple of times, we at EFI are partnering with the AFL-CIO, and one reason for doing that is that -- well, first of all, I have been working with them for a long time, and at the Department of Energy we established a strong jobs program.

But also, frankly, I have said many times that if we do not address the issue of jobs and communities, we will have head winds in making our climate progress. So it is important for that reason as well.

Secondly, with the AFL-CIO, we have written out ten areas for a clean energy future where we think there are massive opportunities for creating good, high-paying jobs. I mentioned earlier, offshore wind was one of those, carbon capture and sequestration, infrastructure. Those were our top three. So this LIFT America Act fits right in there, and labor is very, very excited about this.

Third, there are -- one area, you mentioned solar, for example. Just to say that in solar what we have found is that there are about a quarter million jobs today -- or I am sorry; in 2019, the last data that we have, in 2019, and an additional 100,000 jobs for those who work at solar less than half the time.

Typically, in the construction business, where they would spend some time, say, mounting photovoltaic panels, but less than 50 percent of the time, if you add them, 350,000.

There has also been a lot of confusion in terms of wages. The wages for those

jobs are substantially above the median wage in the country. And, you know, if one compares it to something like nuclear jobs, well, of course, nuclear jobs are double the median wage because of very, very high safety standards and high training requirements, et cetera.

So these are good jobs. They pre COVID were being created at double the rate in the economy as a whole. As we are still 10 million jobs down, this is a high leverage situation where the LIFT Act, LIFT America Act can come in to get the clean energy future and create jobs at a really good clip.

Ms. Castor. Thanks so much.

The Chairman. Thank you, Kathy.

Let me thank our witnesses. I am looking at the clock, they have been over here 5 hours, believe it or not, taking our questions and listening to us. So thank you for your participation and your willingness to stay here for over 5 hours. We certainly appreciate that.

And I want to remind members that, pursuant to committee rules, they have 10 business days to submit additional questions for the record to be answered by the witnesses. So you may get written questions from us as well, in addition to the 5 hours in person. And, of course, I would ask you to get to us as promptly as well.

Before we adjourn, I do have to go through a list of items to include in the record. So I request unanimous consent to offer the following documents into the record: A letter from the Association of Metropolitan Water Agencies; a letter from the Coalition for Health Funding; a letter from the National Association of Community Health Centers; an article from the Chicago Tribune entitled "Brain-Damaging Lead Found in Tap Water for Most Illinois Communities during the Past 6 years," Tribune analysis finds; a letter from the World Resources Institute.

A letter in support of the LIFT America Next Generation 9-1-1 provisions from the International Association of Fire Chiefs, Major Cities Chiefs Association, Major County Sheriffs of America, National Sheriff's Association, National Association of State EMS Officials, International Association of Chiefs of Police, Metropolitan Fire Chiefs Association, and the Association of Public Safety Communications Officials.

A letter from America's Essential Hospitals; a letter from U.S. Telecom, the Broadband Association; a letter from the Environmental Defense Fund; a letter from the American Nurses Association; a letter from the American Clinic for Laboratories Association; a letter from the National Association of State 911 Administrators and the National Emergency Numbers Association.

A letter from the American Gas Association; a letter from U.S. Senators Michael Bennett, Angus King, Rob Portman, and Joe Manchin; and, finally, a letter from the GPS Innovation Alliance and the CompTIA Space Enterprise.

So without objection, those will be submitted for the record, and they will be so ordered.

[The information follows:]

\*\*\*\*\* COMMITTEE INSERT \*\*\*\*\*

The Chairman. So at this time let me just thank everyone again, all of our panel, all of our members. I thought this was a very good hearing. I was rather surprised that we were here for 5 hours. It seemed a lot shorter to me because it was so interesting.

But with that, we will thank you again, and at this time the committee is adjourned -- oh, did someone have a question?

Mr. Moniz. No. Thank you, Mr. Chairman.

The Chairman. All right. Thank you, all. Thank you so much.

Do we have something else? Morgan, yes.

Mr. Griffith. Apparently we have a member who is trying to get in, log in. I don't know if he is going to make it or not.

The Chairman. Who is that?

Mr. Griffith. He is having technical difficulties. Markwayne Mullin.

The Chairman. Is he trying to get in or --

Mr. Griffith. What have you got? What is he trying to do?

The Chairman. I don't want to hold up the witnesses any longer. They have been here for 5 hours.

Mr. Griffith. How long has he been trying to log in?

Yes, apparently he is trying to log in, Mr. Chairman, but I can't tell you how long it will take --

The Chairman. Yes. We kept them here for 5 hours. If he wants to, he can submit a written request.

All right. Thank you, all.

At this time the committee is adjourned. Thank you.

[Whereupon, at 4:14 p.m., the committee was adjourned.]

