BLUEGREEN ALLIANCE

CREATING GOOD JOBS, A CLEAN ENVIRONMENT, AND A FAIR AND THRIVING ECONOMY

WRITTEN TESTIMONY
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Thank you Chairman Brown, Ranking Member Toomey, and distinguished members of the committee. My name is Zoe Lipman and I am the Director of Manufacturing and Advanced Transportation at the BlueGreen Alliance, a national partnership of labor unions and environmental organizations. On behalf of my organization, our partners, and the millions of members and supporters they represent, I want to thank you for convening this hearing today.

We cannot rebuild prosperity if we fall behind the rest of the world in building the technologies of the future, or if working people and the communities they live in fail to see the gains from innovation and a cleaner economy. We stand at a crossroads and we must take the correct path now to ensure the next generation of investments in advanced, clean vehicles, energy, and infrastructure are made here in the United States and that those investments result in the kinds of good-paying jobs that are out of the grasp of too many Americans. The investments we make today and over the next few years will have a profound impact on the future of our nation and on its workers.

These actions are particularly essential as we work together towards recovery from the ongoing COVID-19 health and economic crisis. We went into this pandemic with three ongoing and interconnected crises: economic inequality, racial injustice, and climate change. The COVID-19 pandemic has cast a harsh spotlight on the severe and disproportionate impacts of these crises. It has also shown how the loss of American manufacturing has hurt workers, communities, and our security in the face of a crisis.

Rebuilding American manufacturing to lead in a clean economy and transforming basic industry is critical—both to meeting our climate goals, and to powering a real and lasting recovery that extends to all. Also critical is investing in our infrastructure—including modernizing our schools, hospitals, and transit systems; delivering broadband to rural communities; modernizing our grid and upgrading water systems; and protecting communities through natural infrastructure resiliency. These infrastructure investments can provide a much-needed jolt to our economy, while delivering good jobs and public health and climate benefits to communities. And, if we utilize Buy American procurement policies to incentivize the use of American-made materials

and components, the infrastructure investments will also deliver good-paying jobs in our manufacturing sector.

REBUILDING AND RETOOLING AMERICAN MANUFACTURING, BASIC INDUSTRY, AND ESSENTIAL SUPPLY CHAINS

The U.S. can once again lead the world in manufacturing the technologies and products of the future. As an integral part of an aggressive strategy to address the climate emergency head on—and in line with achieving net zero emissions economy-wide by 2050—we have the opportunity to modernize and transform our industrial base to make it the cleanest and most advanced in the world, while spurring the creation of a new generation of good, safe jobs manufacturing clean technology.

This industrial transformation can bring dynamic industries back to communities that have been left behind by deindustrialization and under-investment, and provide a starting point for broadly shared growth and prosperity. It can help deliver a better future for workers and communities—revitalizing main streets and rebuilding the economic engine that has driven the middle class for decades.

The BlueGreen Alliance—alongside our labor and environmental partners—released Solidarity for Climate Action, an ambitious, concrete platform to address the crises of climate change and economic and racial inequality simultaneously.[i] Transforming America's manufacturing sector is an opportunity to do so—creating and sustaining good, union jobs and rebuilding the middle class, while also reducing pollution and protecting our air and water.

Manufacturing matters

The economic stakes are enormous. Manufacturing directly employs about one in 11 American workers, and contributes $2 trillion a year to the gross domestic product (GDP). Including the industry's purchases of goods and materials, however, manufacturing accounts for one-third of U.S. economic output or more, and its impact on the nation's innovation and competitiveness is even larger.[ii] Manufacturing accounts for more than two-thirds of private sector research and development (R&D), while the sector's domestic strength plays a central role in the balance of U.S. imports and exports—and the jobs that go with them. Manufacturing also has the proven ability to provide pathways into the middle class for millions of workers and families, and to support millions of high-skill, high-wage jobs. It has not always delivered on that promise, however, and today those opportunities are increasingly unavailable for too many American workers.

Meanwhile, global investments in clean energy, transportation, and infrastructure technologies are forecast to reach into the tens of trillions of dollars over the next three decades, posing both a powerful opportunity for job creation and economic growth and a serious risk that—without action to lead as technology changes—American workers and companies could be left behind.[iii]

The industrial sector represents a significant source of U.S. emissions. In 2018, the largest sources of greenhouse gas emissions by sector were transportation (nearly 28%), electricity production (27%), and industry (22%).[iv] However, distributing electricity by end-use reveals that the industrial sector is the largest source of emissions in the United States, responsible for 29% of emissions overall.[v]

Not only are industrial sector emissions large today, they have been growing and are projected to increase further. Globally, industrial sector emissions increased at an average annual rate of 3.4% between 2000 and 2014, significantly faster than total carbon dioxide (CO2) emissions.[vi] Industrial sector emissions are also growing at a faster rate than other sectors. Between 1990 and 2014, industrial sector emissions increased by 69%, while emissions from buildings, power, and transport increased by only 23%.[vii] Industrial sector emissions in the United States are projected to increase 17.6% through mid-century.[viii]

While other economic sectors are projected to see flat or declining emissions, these climate benefits will be offset by increases in industrial emissions under a business-as-usual scenario.[ix] Reductions in the power and transportation sectors, for example, are projected to be offset by an increase in carbon emissions from industrial sources.[x]

We need a holistic approach to retaining and growing manufacturing in the U.S., while also investing in these industries to make them the cleanest and most competitive in the world.

The BlueGreen Alliance's manufacturing agenda lays out a plan across five pillars of action, and it is guided by an overarching strategic focus on strengthening good jobs, equity, reducing pollution, and reinvestment in manufacturing, communities, and workers. It proposes a set of national actions to achieve global leadership across clean technology manufacturing; cut emissions from the production of essential materials; upgrade and modernize the entirety of the U.S. industrial base; and undertake a new generation of industrial development that rebuilds good jobs in America and is clean, safe, and fair for workers and communities alike.[xi]

We appreciate and applaud the fact that many of these same priorities are reflected in pieces of legislation currently being considered in Congress. We look forward to working with the committee, Congress, and the administration to get this job done. Waiting is not an option because the opportunity to lead on climate and manufacturing, jumpstart economic recovery, and build a more equitable and prosperous economy will not wait for us.

Meeting the economic challenge

Worldwide, nations and regions are rushing to capture the economic gains from rapidly growing demand for clean technology. More than 40 countries have enacted carbon prices or targets, and they are simultaneously making long-term technology plans, building strong domestic markets, and taking coordinated policy action to lead in the production of clean energy and transportation technology, advanced clean materials, and infrastructure.

Even as the U.S. joins other nations in rapidly deploying clean technology, our ability to manufacture these technologies is not keeping pace, or we are dependent on other nations for critical subcomponents or technology. As these technologies become more and more widespread, failure to build them here increasingly threatens future jobs and the economy. Equally critical is a robust network of suppliers building the components, materials, and technologies that go into them. Not only do these companies account for the bulk of manufacturing jobs, but robust domestic supply chains are critical for sustaining innovation and technological leadership, and for economic security in the case of any type of disruption or crisis.

Other nations are also going first in modernizing heavy industry. They are demonstrating cutting edge, low-carbon processes for producing energy-intensive basic materials and fuels that will be essential to future global competitiveness and emissions reduction. If the United States hopes to compete and to lead, we need to invest in transforming our manufacturing and industrial sectors at the same or greater scale and pace.

To meet this challenge, we too have to use all the tools in the toolbox. We need to take coordinated action to make up for decades of disinvestment, offshoring, and outsourcing that weakened American manufacturing, and reinvest in today's industrial plants and communities. We need to reverse the unsafe and inequitable practices that all too often left workers and communities bearing the costs—but not the benefits—of industrial development, and ensure that jobs building clean technology are as good—or better—than the jobs of today. We need to scale up manufacturing and industrial support overall; boost startup and backup funding to help companies continue to invest for the long term, even when times are tough or uncertain; and provide the patient, consistent, and low-cost financing necessary to make investment in comparatively large, risky, innovative or first-in-class projects possible in America—not just in other nations.

We must make a significant coordinated national investment now to jumpstart domestic clean technology manufacturing, secure critical supply chains in the U.S., transform energy-intensive manufacturing in line with achieving net-zero emissions economy-wide by mid-century, and ensure a new generation of clean and safe industrial development in America.

Leadership in clean technology manufacturing

Immediate Priorities: We must create new industrial investment funds, expand existing programs to support urgent manufacturing conversion and retooling, and act at scale to fill critical supply chain gaps. And we must target investments to strengthen the communities and workers that need it most.

What this looks like across America:

- **Offshore wind can mean revitalized ports, good union jobs, and manufacturing across the country**: The potential for responsible offshore wind development in the United States is substantial. Through offshore wind, the United States has the technical potential to produce almost double the amount of electricity the nation consumed in 2019.[xii] According to the U.S. Department of Energy, if we utilized even one percent of the nation's technical potential offshore wind capacity, we could power nearly 6.5 million homes. We have the technology to harness wind power off the coasts of at least half of our states, and the industry is rapidly expanding both domestically and internationally. [xiii]

  America's first offshore wind project at Block Island was the result of years of collaboration between labor, environmental organizations, industry, and key government officials and entities. Its five turbines began generating power off the coast of Rhode Island at the end of 2016. They produce enough clean, local energy to power 17,000 homes.[xiv]

  This project was built with the highest standards of wildlife and environmental protection, and demonstrates the type of diverse, highly skilled workforce needed in the offshore wind industry. Though it was comparatively small, Block Island put more than 300 people to work and employed electricians, welders, ironworkers, pipefitters, pile drivers, engineers, scientists, and vessel operators.

  In addition to the construction phase of these projects, a critical component of the job creation potential for the offshore wind sector is in operations and maintenance as well as the vast manufacturing supply chain that offers major opportunities for growth in a variety of sectors. While Block Island's Project Labor Agreement (PLA) resulted in significant quality job creation through the construction of the project, it largely missed the mark when it came to the materials that went into the project. The major parts and components of the Block Island farm—with the exception of the foundation—were manufactured outside the United States. The nacelles for the project came from France, the towers from Spain, and the blades from Denmark.[xv]

Maximizing the number of jobs created by the offshore wind industry will require growing a domestic supply chain. According to one report, the offshore wind industry can support between 45,000 to 83,000 jobs by 2030, "depending on installation levels and supply chain growth."[xvi]

Beyond Block Island, larger projects are in development along the Eastern Seaboard from Massachusetts to North Carolina, and two offshore wind demonstration projects are planned in waters off Ohio and Maine. We can either seize this opportunity to manufacturer the steel, cement, aluminum, nacelles, and other supply chain components here in the United States or we can cede manufacturing the future of the offshore wind industry to our global competitors, where the world leaders and workers in Northern Europe are more than willing to meet our demand. If we fail to act now or without enough urgency and at the scale needed, we are choosing to hand over good-paying jobs for workers in our own communities to other workers and communities in other nations.

- **Gaps in supply chains remain to be filled:** By contrast, the U.S. is already seeing what failing to act with urgency and scale has done to another industry. Solar panel manufacturing has been whipsawed by inconsistent policy, while key pieces of the solar manufacturing supply chain are missing in the United States. The U.S. is already behind our competitors in the race to build the future of batteries, transmission technology, hydrogen infrastructure, and more. Robust support for the domestic clean energy supply chain must fill these gaps in the clean energy technology sector—or else risk reliance on foreign manufacturing for essential components of a secure energy system.

- **Manufacturing incentives build and sustain jobs in industrial communities:** Manufacturing incentive programs have worked to maintain and expand U.S. manufacturing and competitiveness in the growing clean technology sector. As one example, the always over-subscribed 48C Advanced Energy Manufacturing Tax Credit program provided a credit of up to 30% for investments in building new manufacturing facilities or expanding existing facilities to produce clean energy technologies. This program led to job-creating investments in industrial communities throughout the U.S. and across a range of industries—from the production of cooling roof shingles in Massachusetts to expanded production of a material that strengthens the performance and durability of solar modules in Ohio. Looking forward to an enhanced and expanded program, according to one report, "every $1 billion issued through a new 48C credit program could add $3.6 billion in GDP and roughly 8,000 direct jobs across the country."[xvii]

- **Energy efficiency improvements support existing jobs, increase the quality of jobs created, and reduce carbon pollution.** There are currently over 2.3 million jobs in the energy efficiency sector,[xviii] and roughly 70% of these are in small businesses.[xix] Furthermore, identifying the supply chain and moving policies to increase domestic manufacturing of energy efficiency retrofit products can also help to create quality manufacturing jobs.

  The BlueGreen Alliance Foundation's Building Clean program works to identify these products and advance energy efficiency retrofits, particularly for multi-family housing.[xx] The database at BuildingClean.org lists roughly 4,500 local manufacturing facilities in nearly every state across the country. In New York, Flower City Habitat for Humanity helps build affordable housing for communities in Rochester. Through a commitment to in-state sourcing with 95% of parts coming from New York manufacturers, Flower City Habitat will be using windows and doors that exceed Energy Star standards at an affordable price. Many of these New York based suppliers are IUE-CWA-represented, supporting quality jobs and local businesses in these communities while reducing emissions.

  These kinds of examples demonstrate the opportunity of the clean economy to revitalize American manufacturing, protect the environment, and create quality jobs across the country.

Transforming our industrial base

Immediate priorities: We must make comprehensive investments to secure, modernize and reduce emissions from energy intensive industry, ranging from widespread deployment of energy saving industrial efficiency measures to full scale deployment of first in class ultra-low emissions technology. We must also enhance R&D and ensure what we invent is built in America. Lastly, we must take key steps towards responsible production, reclamation, and recycling of minerals and materials critical for clean and advanced technology.

What this looks like across America:

- **Securing steel jobs in Pennsylvania, safeguarding aluminum smelting west of the Mississippi, improving emissions worldwide:**

  Steel made in the U.S. goes into everything from bridges to wind turbines and as we rebuild and retool our manufacturing sector we cannot leave behind these basic industries that are the backbone of building a strong, domestic supply chain for clean energy and infrastructure projects. The last several decades have seen offshoring this production and

worsening environmental and labor standards worldwide. Transforming energy-intensive industries to produce essential materials with far lower emissions can ensure that deploying clean technology doesn't drive jobs or pollution overseas.

Today the last aluminum smelter west of the Mississippi is at risk of permanent closure—a potential economic and national security risk. At the same time, innovative technologies for ultra-low carbon production of energy intensive materials are being commercially deployed overseas. These include, for example, innovative processes to produce ultra-low emission steel and others that capture carbon from steel making and integrate those processes with fuel production.

Loans, grants, or other incentives to enhance efficiency, aid in adoption of combined heat and power, improved processes, and carbon capture, and in select cases, to rebuild core energy intensive facilities with globally leading technologies could stem the flow of steel production and aluminum smelting overseas, and mean opportunities to upgrade, innovate, cut energy use and costs, and safeguard jobs in 34 iron, steel, and cement facilities in Pennsylvania alone.[xxi]

EXECUTING A STRONG ADVANCED AND ELECTRIC VEHICLE MANUFACTURING AGENDA

The decisions we make today will also determine whether we grow jobs and manufacturing in key industries that have been the backbone of our economy for decades—like the automotive industry.

The auto industry is at the heart of the U.S. manufacturing economy. Over 900,000 workers are directly employed by U.S. auto manufacturers and parts suppliers,[xxii] and one job in an auto assembly plant creates an additional 7.4 jobs from upstream and downstream economic activity.[xxiii] The auto sector is also a major driver of spending on research and development, patents, and technological innovation.[xxiv]

The global auto industry is at a crossroads. New technologies, new market entrants, and an industry committed to decarbonization means that change is accelerating.

Over the next decades, the industry will make a historic shift away from internal combustion engines towards electric vehicles (EVs). Other nations are not waiting, for example China has invested more than $60 billion to support EV manufacturing. Chinese firms, either owned or supported by the Chinese government, currently produce 60% of passenger EVs sold around the globe and produce almost 70% of battery cells.[xxv] China also controls some 80% of the supply of

rare earth minerals—which are essential for aerospace, defense, and EV production—and may impose export controls on these vital materials.[xxvi] The European Union (EU) and South Korea are similarly making investments in battery and other technologies. Without new action, projections show the U.S. falling further behind over the next decade.

Rapid growth of EVs will create jobs producing key components such as batteries, electric motors, electronics, regenerative braking systems, and semiconductors.[xxvii] On the other hand, battery powered propulsion systems have fewer parts than traditional internal combustion engine vehicles, and while engines are often built here, battery cells are not—yet. Producing the materials, components, and technology that go into vehicles makes up more than half of jobs in auto manufacturing. There is intense global competition for this high-value manufacturing work, and potential benefits for U.S. workers and communities will be lost if EVs and key components are imported, or shifted to low-wage, insecure jobs. Maintaining and adding U.S. vehicle assembly capacity will also be a central factor in the location of supply chain jobs. If those factories are lost, so too are the jobs not only in those facilities, and in EV batteries and cells, but also in other supplier industries: steel, aluminum, glass, tires, seats and more.

American auto workers, steel workers, rubber workers, and others know all too well what happens when the U.S. market, industry, and policy falls behind the rest of the world. When U.S. trade, currency, or technology policy has lagged what other nations were doing, domestic jobs and production were often sacrificed as a result. By contrast, strong fuel economy and vehicle greenhouse gas standards in the 2010's coupled with aid to retool U.S. manufacturers spurred enhanced investment in domestic manufacturing and aided in the recovery of U.S. auto jobs from the 2008-2009 recession.

In 2017, a BlueGreen Alliance and NRDC report found more than 1,200 U.S. factories and engineering facilities in 48 states—and 288,000 American workers—building technology that improves fuel economy for today's vehicles.[xxviii] While the dynamic of potential job gains and losses are different for vehicle electrification, good outcomes for workers still depend on building the most advanced vehicles here in the United States.

That means coupling globally competitive standards, and other deployment measures—which give companies the certainty they need to invest—with an equally aggressive push to manufacture vehicles and strategic components here in the United States. And it means reversing unwise tax, trade, and labor policies that have hollowed out U.S. manufacturing, encouraging the outsourcing and offshoring of jobs, and leaving remaining workers with less compensation and deteriorating working conditions.

With the right policies, the U.S. can be a leading market and a leading manufacturer of the most advanced vehicles. We have to act, because the policies and investments that will shape the location and the quality of jobs in an increasingly electric automotive sector are being taken now.

Immediate Priorities: Securing and growing jobs in the auto sector depends on a coordinated industrial and manufacturing strategy that includes:

- A return to smart vehicle standards;
- Major investments to convert, retool, and reshore American manufacturing to build electric vehicles and components, convert and retool plants at risk, and bring new manufacturing into existing plants;
- Target investments to rebuild manufacturing and deindustrialized communities, strengthen supplier networks, and improve job quality, equity, and environmental outcomes throughout the supply chain;
- Strategic investments and coordination to fill gaps in essential supply chains including semiconductors and battery cells;
- Key steps towards economically, environmentally, and socially responsible production, reclamation, and recycling of critical EV materials like lithium;
- Strengthening and enforcing policies to leverage U.S. advantage in basic research;
- A new approach to trade agreements and trade enforcement focused on protecting workers, consumers, and the environment; and
- Boosting incentives for domestically manufactured EVs and charging stations, and electrifying publicly owned vehicle fleets at all levels of government, with high-quality environmental, labor and safety standards for manufacturing, operations and maintenance.

What does this look like across America:

- **A dynamic and essential supply chain that stretches across nearly every state represented by members of this committee:** BlueGreen Alliance reports on suppliers of the technologies that improve fuel economy and cut emission in the automotive sector (Supplying Ingenuity II[xxix]), on the risks of the recent rollback of standards to future job growth, (Tech@Risk[xxx]), and on the challenges and opportunities in the EV industry (EVs at a Crossroads[xxxi]), along with a new report due out soon, all show the profound breadth and impact of the automotive sector and the policy choices we make on domestic manufacturing. The industry includes not only automotive assemblers and the vast array of automotive component manufacturers, but significant portions of our materials manufacture and innovation, such as high-strength lightweight steels, new aluminum products, adhesives, and robotics needed to utilize them. We also see the full range of outcomes for workers, both the power of advanced manufacturing to support good family-supporting jobs, and too many instances that demonstrate the decline in workers

bargaining power, wages, benefits, and safety on the job. When these companies and their employees prosper they in turn support even more jobs and businesses in and beyond the communities in which they are located—when these manufacturing facilities are offshored, or jobs outsourced, or when workers cannot fairly or effectively access these jobs, the impact on local economies is profound. And we can vividly see the profound impact of the decisions that policy makers and companies make—or fail to make—now to shape the investments in manufacturing and workers across the nation.

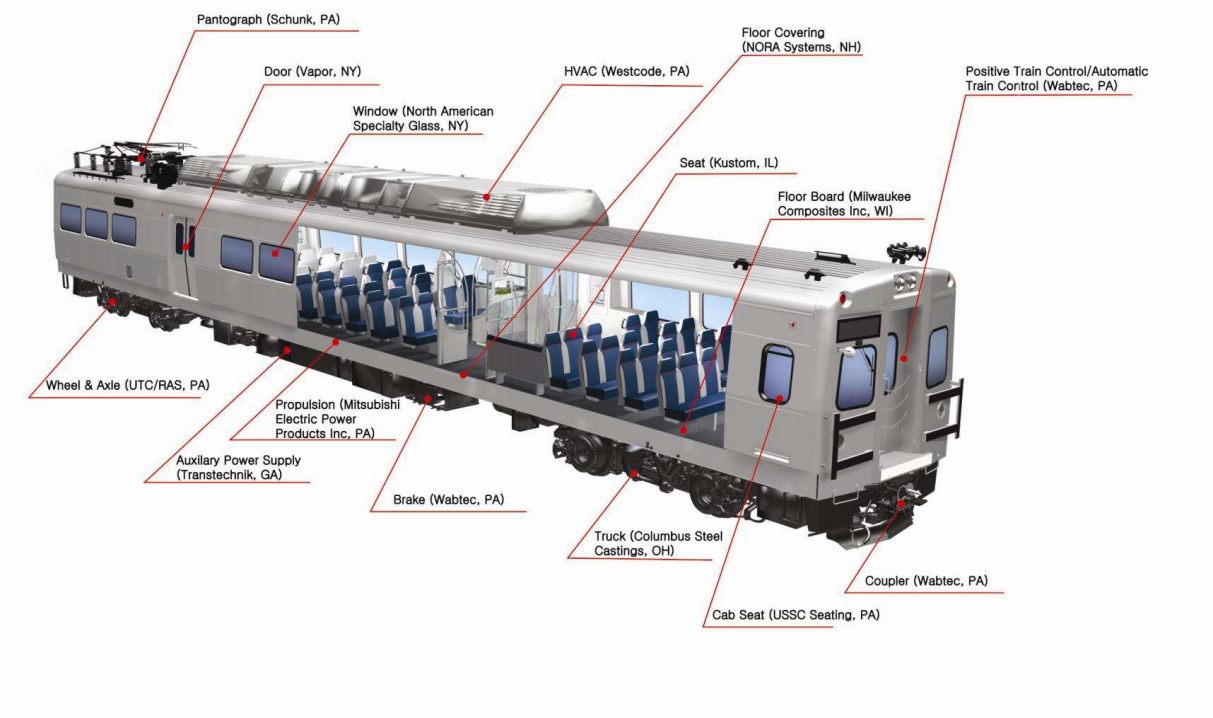
- **Manufacturing risk, potential, and the demonstrated success of policies to build the advanced vehicle supply chain in states across the country.** In states like Ohio or Tennessee, we see the breadth and impact of the automotive supply chain; including major conventional vehicle assembly, electric vehicle assembly, examples of reinvestment to convert long standing union manufacturing facilities to be major sites of future electric vehicle or battery cell production. We see the full range of components being manufactured—including EV components and conventional engines and transmissions—facilities that should be first in line for investments to retool to supply assemblers as they shift to electrified technology. We see the advanced materials and electronics that support advanced vehicles of all kinds. Automotive manufacturing can be explored by technology and location in BlueGreen Alliance interactive data sets available online.[xxxii]

  And finally we see numerous facilities that were established or expanded with the support of groundbreaking manufacturing incentives in both the advanced conventional supply chain, and in manufacturing electrified vehicles and components. The range of facilities in these states also illustrates the potential to expand or improve these programs to make a greater impact in building advanced technology manufacturing and sustaining good jobs in the automotive sector today and for the long term.

BUILDING PROSPERITY AND MANUFACTURING BY REINVESTING IN OUR TRANSPORTATION INFRASTRUCTURE

The United States relies on transportation infrastructure—like roads, bridges, railroads, and public transit systems—to keep the economy moving. Not only is safe, modern transportation infrastructure vital to daily life and commerce, it is critical to ensuring that all workers have access to employment opportunities, and serves as a major employer creating jobs in construction and operations and maintenance. The job creation potential of investments in transportation infrastructure does not stop there, however, with a robust supply chain rippling through communities across the nation. For example, parts and materials for passenger and transit rail systems are manufactured in nearly every state, supporting 90,000 jobs alone.[xxxiii]

Figure 1: The Components of an RTD Subway Car in Denver Illustrate A Vast Nation-wide Transit Supply Chain.[xxxiv]



Unfortunately, investment in this vital sector has been lacking and the condition of the nation's transportation infrastructure continues to deteriorate, reaching a truly unacceptable state of disrepair that threatens the nation's economy, and sacrifices jobs and job creation potential. Every four years the American Society of Civil Engineers (ASCE) releases a report card of the nation's infrastructure. Looking at the United States' transportation infrastructure we see just how detrimental the impact that the lack of investment has been. Driven largely by investment in the freight sector, only the nation's rail infrastructure scored above average grade with a "B," though passenger rail fared much worse.[xxxv] The nation's bridges got a "C," while roads were given a "D."[xxxvi] Finally, the nation's public transit systems were awarded a "D-." The report card notes that "over a 10-year period across the country, 19% of transit vehicles, and 6% of fixed guideway elements like tracks and tunnels were rated in 'poor' condition. Currently, there is a $176 billion transit backlog, a deficit that is expected to grow to more than $270 billion through 2029."[xxxvii] Meanwhile nations across the globe have deployed diverse investment strategies to ensure modern effective transportation assets, airports, rail, transit, and roads and bridges. These investments not only help their businesses and workers compete, they sustain manufacturing innovation and supply chains for the long term. It is also crucial that as we rebuild our nation's crumbling transportation infrastructure, we do so in a way that will make it more resilient and able to withstand the impacts of climate change. As we see more extreme weather, our transportation systems will have to endure severe conditions on a more regular basis.

Congress has rightly identified the need for major investment in transportation infrastructure, both to meet immediate needs and as a driver of economic recovery. We commend these moves and urge continued ambition. As aggressive as current proposals are, they are still far from the $5 trillion the ASCE calls for over ten years to return the nation's surface transportation systems a "state of good repair."[xxxviii]

The impact of such an investment would mean job creation across the nation, if done right. Infrastructure projects require huge amounts of building materials and components. Coupled with strong Buy American provisions, infrastructure investments have a proven track record of creating jobs.[xxxix] Further, requiring strong labor standards, including prevailing wage, Project Labor Agreements, community workforce and benefit provisions, and targeting these investments in disadvantaged communities, will ensure that the jobs created by these investments are good jobs and deliver benefits to the workers and communities most in need.

Immediate Priorities: We must invest at levels commensurate with our economic and transportation needs. We must also sustain and strengthen critical Buy America, labor and community benefit standards to ensure we capture the full recovery, jobs, equity, and local economic benefits of these investments.

What does this look like across America:

- **Transportation infrastructure investments underpin a stronger, more resilient, and more equitable recovery.** A case study in New Jersey, as analyzed by the American Road & Transportation Builders Association (ARTBA), found that the combined economic impact of transit and highway investment had significant economic impacts over ten years, with a $1.65 billion sustained increase in annual transportation spending leading to an average $7 billion annual increase in economic impact for the state over that timeframe. In this example, most of the jobs—54%—created by the added investment are outside the construction industry.[xl] A similar ARTBA analysis in Kansas from 2017 found that a sustained increase in investment in bridges and highways alone would more than double in return in economic output.[xli] Finally, the American Public Transportation Association (APTA) reports that the long-term economic impact of increased investment in transit alone would result in a $5 billion return in total economic benefit for every additional $1 billion in funding, and notes that business productivity "would increase from access to broader labor markets with more diverse skills, enabled by expanded public transit service areas and reduced traffic congestion."[xlii]

- **Transit and passenger rail manufacturing alone supports jobs across every state represented by this committee—many far from where these vehicles are put into**

service. While millions of Americans rely on public transit to get to work every day,[xliii] the benefits of investment in public transit extend far beyond the communities these systems serve, and extend into the supply chain to create jobs across the nation. As demonstrated in Figure 1, parts and components for electric buses, subway cars, and other vital components of the public transit system are often built far from the projects themselves. Rail assembly operations are in Idaho, Pennsylvania, and throughout the Northeast, with component parts coming from across the country. Buses are assembled in states such as Kansas, Minnesota, Ohio, Massachusetts, and across the Southern Piedmont—a key corridor of bus and rail transportation manufacturing, for both assembly and components. Public procurement of advanced and electric vehicles can further help boost reinvestment, job retention, manufacturing conversion, and growth in domestic manufacturing of electric vehicle technology, with EV and EV component manufacturing investments taking place in new and existing facilities in Minnesota, North Carolina, South Carolina, Alabama, and Georgia, as well as in many other states nationwide.

Conclusion: Jobs here, jobs now, good jobs in communities across the U.S.

We do not have time to wait. If we do not move proactively to rebuild the American manufacturing and transportation infrastructures now we risk losing the race to develop, manufacture, and capture the jobs and economic gains from the technologies of the future. Our global competitors are moving fast. Making these investments right, and making them now, will give us the opportunity to lead globally, rebuild jobs in manufacturing communities across the nation that have been struggling, and to bolster innovation and production of the clean technology of the future here at home.

All too often in recent decades, working people and communities have suffered when technology and markets changed. At the same time good jobs promised in new industries have too often not materialized. There is nothing inevitable about these outcomes. The decisions policymakers make now can reverse outsourcing and offshoring, and ensure the industries and jobs of the future deliver fair wages and respect for workers' rights. We have an opportunity now to correct course—to address the vulnerabilities and inequities of our economy so vividly underscored in the current crisis, rebuild the manufacturing industry, repair our infrastructure, lead the world in addressing climate change, and deliver good jobs across America at the same time.

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