BLUEGREEN ALLIANCE POLICY BRIEF

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Communications Infrastructure: Enabling the Clean Energy Economy

From roads that buckle to water pipelines that burst to failing communications systems, America's outdated and crumbling infrastructure is at the forefront of the challenges we must tackle with the utmost urgency. Our infrastructure serves as the backbone of today's economic success and provides the path to future growth and innovation.

Many of our day-to-day systems were built over 50 years ago and are not designed to support today's much larger economy or withstand the impacts of a changing climate. An aging infrastructure also means inefficient use of transportation, energy, and water, wasting natural resources and money while inadvertently adding to the carbon pollution that causes climate change.

The BlueGreen Alliance, with its 15 national labor and environmental partners—including the Communications Workers of America (CWA)—launched Repair America, a grassroots campaign to rebuild our nation's infrastructure to better meet the climate challenges of today and tomorrow, while building a more prosperous, clean economy. Modernizing and extending our broadband network is a critical piece of this effort.

While private sector investment and innovation have created substantial broadband infrastructure in the U.S., the full benefits of a robust broadband system have not yet been realized. In addition to providing the essential communications and internet services on which households and businesses depend, high-speed broadband enables new controls and technologies that can improve the efficiency of energy, transportation and water systems, and cut pollution all while helping to address climate change. Ensuring that all Americans have access to advanced high-speed broadband networks and the technologies and services they enable will mean safer, cleaner, more productive and more resilient communities.

Making our communities more resilient

In recent years, communities across the country have been hit with increasingly severe hurricanes, wildfires, floods, heat waves and rising sea levels, and it's now clear that few are ready to cope with the impacts of climate change. Our aging infrastructure—whether roads, water, energy or communications systems—has proven to be vulnerable to disruption as well as slow and costly to repair when these crises occur.

An upgraded, robust broadband network could play a direct role in ensuring more efficient and effective emergency communications and disaster preparedness systems. In addition, modernized communications infrastructure is critical to other improvements—like smart energy systems that enable power companies to quickly and remotely monitor, assess, avoid or respond to outages or avoid damage.

All of this makes our homes, businesses and communities safer and more resilient in the face of extreme weather and other impacts of climate change. But broadband can also help catalyze and support the transition to cleaner energy more broadly.

Improving Energy, Efficiency and the Environment

Upgraded communications infrastructure enables new energy, water and transportation technologies that cut

pollution and combat climate change directly. Whether found in the smart electric grid, in connected vehicles, or in monitored water systems, broadband technology can revolutionize energy and natural resource management in ways that improve quality of life and cut pollution.

Smart Energy Systems
Our aging energy systems are inefficient, leaving economic and environmental benefits on the table. Power outages alone are estimated to cost businesses and households $80 billion to $150 billion annually while inefficient energy use drains money out of households and businesses that could be put to use rebuilding America's economy.[i] Innovative, new smart grid technologies can vastly improve how the energy system functions, allowing energy providers and consumers to cut pollution, save money and build new jobs. Smart meters, smart appliances, and smart buildings are only some examples of how new communications-enabled technology unlocks energy management and efficiency opportunities for every kind of facility—whether homes, office buildings or factories.

The opportunities are exciting: improved operations, significant energy savings and additional jobs on top of those created by traditional efficiency implementation. For energy providers, smart technologies help effectively integrate new and more diverse sources of power into the grid—offshore wind farms, home solar panels, natural gas power plants, or commercial microgrids—and improve the efficiency of electric transmission and distribution. Meanwhile, for energy users, smart grid technology will enable households and businesses not only to save power, but also to generate, control and potentially sell their own energy. And when we connect our already smarter phones, appliances, and buildings to one another and the electric power system, it enables us to create new jobs, products and services we can't yet foresee.

Connected Vehicles
Similarly, rapid advances in connected vehicles promise new safety, environmental, and quality of life benefits, and also depend on robust and secure broadband. In addition to well-known vehicle navigation and entertainment systems, today's advances include Vehicle-to-Vehicle communications—such as collision avoidance technology and autonomous cars. Vehicle-to-Grid and Vehicle-to-Building communication enables electric vehicles (EVs) to charge automatically when power is clean or cheap. And the potential goes beyond charging to enable EV owners or fleets to use their EV batteries as part of their home or the utility's electric system.

Meanwhile, smart vehicle and transportation infrastructure provides opportunities as simple as the app that tells you when your bus is coming, to more sophisticated systems that allow cities or trucking companies to optimize intricate transportation systems in ways that dramatically increase efficiency, decrease congestion and cut pollution.

Safer Water and Gas Systems.
Water scarcity is a growing concern as temperatures and populations rise. Water leaks from aging infrastructure also mean additional energy is used to pump and process excess water. Meanwhile, ensuring we upgrade our natural gas distribution pipeline systems is critical for public safety and to prevent methane emissions.

New sensors and systems—together with upgraded communications systems—can enable remote, real-time monitoring and response to pipeline damage, leakage or breaks in ways that greatly conserve resources and energy and increase security and productivity of communities.

Growing the Economy

World-class communications and information systems are essential for individuals and businesses to make the most of their economic opportunities. This is true for businesses large and small and can be especially critical to connect new or rural businesses with markets and opportunity. In fact, according to a 2009 study, communities with widespread access and usage of high-speed broadband saw an overall employment growth of one percent more than communities without broadband over a four-year period.[ii] Taken further, if a community employs 50,000 individuals today and does not have sufficient broadband infrastructure, they will lose out on an additional 500 jobs in the next four years. Faster, more reliable communications and information systems also mean improved labor productivity, business earnings and profitability. Overall, the study found that a one-year additional investment of $10 billion to upgrade the U.S. high-speed broadband infrastructure would create or sustain 498,000 total jobs with 262,000 of these jobs in the small business sector alone.[iii]

In addition, the smart energy and transportation technologies enabled by robust broadband provide significant economic benefits, especially if we move now to help ensure that we develop and build this cutting-edge technology in the U.S. For example, boosting smart grid deployment alongside traditional energy efficiency measures such as building retrofits creates a wider range of new clean energy jobs, from construction through software design.

Whether looking at smart grid, smart transportation or building technologies, the economy also benefits from energy cost savings and system reliability, while improved access to both the digital and global economy will enhance competitiveness and drive development of new markets and products.

Policy to get Broadband Infrastructure Right: Invest, Connect, Innovate and Grow

Repair America
It is critical that we find innovative ways to fund and build the wide range of vital infrastructure projects America needs; projects that will improve the competitiveness of our economy, the efficiency of our services, the safety of our built environment, and the creation of good American jobs. Building 21st century telecommunications infrastructure is part of meeting this challenge.

State and federal infrastructure banks are one means to attract and sustain investment at the levels we need to close our larger infrastructure investment gap. State, utility, business and community partnerships that facilitate private and/or public investment in energy, water, transportation and communications modernization are another means. These large projects also need to be implemented in ways that ensure we get the full jobs and community benefits from these investments.

Get smart technology implementation right
Communications-enabled smart technology has great promise to build local economies, enable innovation, reduce pollution, and improve quality of life. Communities, policymakers and elected leaders at the federal and state levels need to work together to ensure the standards, policies and approaches we need to gain the full benefits from these emerging technologies are in place and are supported.

These include:

- Broadband-specific policies such as resolving issues around the allocation and sharing of broadband spectrum, standards and interoperability to enable safe and effective use of connected vehicle, grid, and building technology. It is also critical to ensure fair access by all communities to broadband and broadband-enabled technologies and services.

- Utility, transportation and infrastructure policies that encourage adoption of smart grid, water, vehicle and building technologies, particularly those that facilitate energy and transportation efficiency and climate resilience. Smart energy system deployment stands to play an important enabling role as states look to develop plans to achieve carbon reductions and local economic development under the EPA's power plant standards.

Closer Look: Dallas and Fort Worth

The photo shows CWA Local 6215 member William Jordan installing new fiber-optic cables for AT&T's GigaPower services in the Dallas and Fort Worth areas. The 100 percent fiber-optic network delivers internet at up to 1 gigabit per second—the fastest broadband speeds available to most communities. Beginning in August 2014, residents and small businesses in the Dallas-Fort Worth area gained access to this ultra-high speed of internet.

AT&T's Dallas and Fort Worth project is part of a major build out the company is planning for their fiber-optic infrastructure. They plan to bring GigaPower speeds to 100 cities in 25 markets nationwide. Robust investments in infrastructure improvements, such as those underway at AT&T, will help modernize our aging communications systems, help individuals and businesses take advantage of new opportunities, and create good jobs across the country.

- Smart public and private sector initiatives to incent investment in truly high-speed broadband services, and increased cross-government collaboration to get the job done. Collaboration from government entities across industry sectors to blend resources and funding can be key. For example, breaking ground to lay broadband fiber at the same time as laying tracks for street cars could improve the economics and enhance the benefit of an infrastructure investment, but it may also require nontraditional government entities to work alongside one another.

- Sound advanced energy, technology, R&D, and manufacturing investments that encourage U.S. leadership in developing and building these communications and communications-enabled technologies, as well as education, training and workforce development policies to ensure we capture the full jobs and career path benefits of technologies that can reshape key industries.

- Public policies that help ensure the competition in this industry is based on innovation and quality of service rather than lower labor costs and abuse of workers' rights. As companies invest in clean infrastructure and technology, it is critical to uphold fair, family-sustaining jobs, as has been traditional in the telecommunications industry.

What You Can Do

Join the effort to Repair America at www.bluegreenalliance.org/repair. There you can sign on and learn more about how we can rebuild the systems we rely on every day to address and prepare for climate change.

Together, we can create good jobs, make our infrastructure cleaner and more efficient, and protect our families and communities.

REPAIR AMERICA
PROTECT, PRODUCE & PROSPER

Repair America is our campaign to modernize the infrastructure systems we rely on every day both to address climate change and to create good jobs. Repairing these basic systems that we use for transportation, energy, communications, and clean water will both reduce the carbon pollution and greenhouse gases driving climate change and grow economic opportunity for millions of Americans by creating and maintaining quality, family-sustaining jobs.

Find out more at www.bluegreenalliance.org/repair.

Endnotes

i. BlueGreen Alliance, Communications Workers of America, Natural Resources Defense Council and Sierra Club, *Networking the Green Economy: How Broadband and Related Technologies Can Build a Green Economic Future*. http://www.bluegreenalliance.org/news/publications/document/NetworkingforaGreenEconomy.pdf

ii. Robert D. Atkinson, Daniel Castro, and Stephen J. Ezell. *The Digital Road to Recovery: A Stimulus Plan to Create Jobs, Boost Productivity and Revitalize America*. http://www.itif.org/files/roadtorecovery.pdf.

iii. Ibid.

BLUEGREEN ALLIANCE

The BlueGreen Alliance unites America's largest labor unions and its most influential environmental organizations to identify ways today's environmental challenges can create and maintain quality jobs and build a stronger, fairer economy.

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