

Policy Memo for the Biden-Harris Transition:

How Digital Technology Can Empower the American Economic Recovery

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Promoting Innovation Worldwide

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The pandemic has caused unprecedented disruptions in our daily lives, forcing Americans to find new ways to work, learn, and interact with one another. Digital technology has been essential to adjusting to life during the pandemic, and it will be even more essential to the American economy's recovery after the pandemic abates. The broad U.S. technology sector – from producers of hardware and software to digital service providers and all businesses that rely on digital technology for critical functions – will be indispensable partners for future American prosperity and improved standards of living.

U.S. economic recovery will be facilitated through technology policy along three lines of effort:

1) investing in an essential workforce through immigration reform, as well as education and training investments; 2) building an accessible digital infrastructure to close the digital divide; and 3) adopting innovative technologies to improve the delivery and efficiency of government

services. Digital technology has played – and will continue to play – a crucial role in the ability of working families and businesses to cope with the COVID-19 pandemic, but we know that not all Americans have been able to avail themselves of the benefits brought about by technology during this critical time. For example, access to high-speed internet remains out of reach for many of America's students and their families, threatening to leave these communities behind financially and educationally. While the world quickly evolved

The U.S. economic recovery will be facilitated through technology policy in three ways:

1 Investing in an essential workforce through immigration reform, as well as education and training investments:

The Biden Administration should support immigration reform that successfully meets the demands of a globally competitive, digital economy, including through increased funding for STEM and computer science education as well as public-private initiatives to ensure that Americans have the right set of digital skills.

2 Building the digital infrastructure necessary to close the digital divide:

The Biden Administration should set a goal of making high speed wired broadband and 5G available to all Americans within 5 years. The Administration should commit at least \$80 billion in secure broadband infrastructure funding.

3 Adopting innovative technologies to improve the delivery and efficiency of government services:

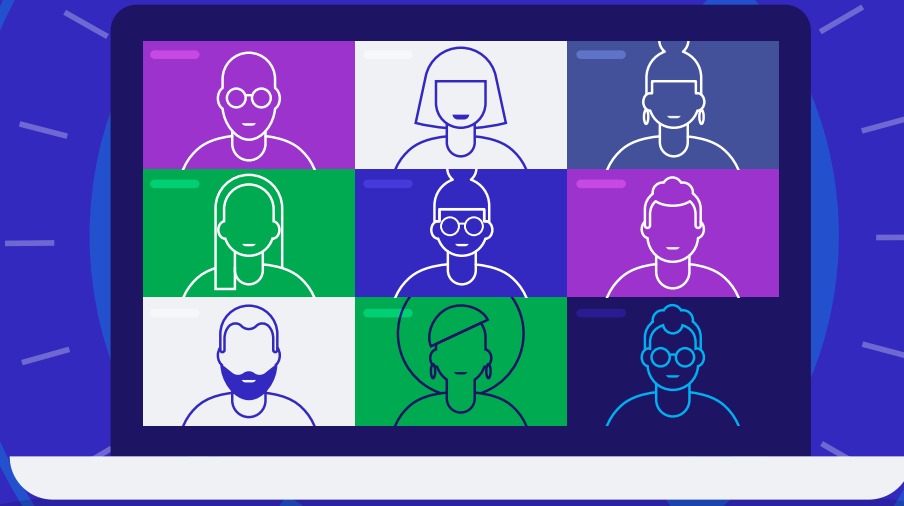
The Biden Administration should invest in strategic IT modernization and improve access to public data.

in ways that may forever change the workforce and the nature of work, that need not mean leaving families, students, and participants in the workforce behind. The policy recommendations herein not only ensure the continued success of America's tech workers and businesses, but they support communities and individuals across the nation by helping eliminate opportunity gaps. The tech industry plays a vital role in closing this gap, and we stand ready to work with the Biden Administration to ensure that the benefits of a digitized economy are realized by and accessible for many, not just the few.

Another means of contributing to economic recovery following COVID is the creation of jobs and digital technologies aimed at tackling the existential challenges posed by climate change.

Our members have taken significant steps to reduce the carbon footprint of tech sector operations and products, and to help enable transformational innovation via intelligent efficiency. Data-driven technologies are also essential to building the innovative tools, capabilities, and services that will be required to significantly accelerate the necessary shift toward a low carbon economy. The U.S. government should prioritize investments in low- and zero-carbon technologies that creates jobs and economic opportunities as well as promotes health, welfare, and resilience – especially of historically marginalized and vulnerable communities and workers.

**Digital technology has played —
and will continue to play — an
important role in the daily lives of
American families in the midst of the
COVID-19 global pandemic.**



Ensuring an Essential Workforce

A critical component of today's economic recovery is unleashing the private sector's creativity and ingenuity. Businesses across the United States are anxious to get their employees back to work. Already, the technology sector, including our American and foreign-born employees, is enabling many Americans to continue to work remotely during the COVID-19 pandemic, and is playing an essential role in enabling the U.S. economy to move activities online and maintain vital digital infrastructure to keep businesses running securely and people connected. Indeed, the Department of Homeland Security's (DHS) Cybersecurity and Infrastructure Security Agency (CISA) rightfully classified information technology professionals as "essential to continued critical infrastructure viability" during the COVID-19 pandemic in its recent *Guidance on the Essential Critical Infrastructure Workforce*. Moving forward,

the digital solutions that will need to be employed in the transition to a low carbon economy will further foster the creation of jobs and economic opportunities in ways that promote health, welfare, and resilience for all people. Undoubtedly, the U.S. technology workforce will continue to be a significant component of our domestic economic recovery, as well as enable the United States to maintain its position a global leader in innovation. As such, policymakers need to ensure that we are maximizing the full potential of our current and future science, technology, mathematics, and engineering (STEM) and computer science workforce. In addition to STEM investments, digital skills development is also necessary to unleash the creativity and ingenuity of individuals who are not employed in STEM industries so that they too can participate in an increasingly digital economy.

ITI recommends that the Biden Administration take the following actions:

→ **The Biden Administration should support immigration reform that successfully meets the demands of a globally competitive, digital economy.**

The technology sector is at the forefront of research and development investment in the United States and, subsequently, drives domestic economic growth and job creation. To achieve these objectives, tech companies rely on U.S. citizen, lawful permanent resident, and temporary non-immigrant employees educated and trained in specialized fields, as well as the ability to recruit these high-skilled professionals in the United States and globally. Our foreign-born employees have worked alongside their American colleagues throughout COVID-19 pandemic to provide essential services during this period of uncertainty. While the technology sector is committed to American workers, scarcity in our industry's workforce has not changed during the COVID-19 pandemic and, as such, our companies need to be able to recruit the best and the brightest from around the globe to continue to propel American innovation. High-skilled immigration reform should include H-1B visa program reforms that ensure the number of available H-1B visas adjust to meet market demands; promote additional protections for nonimmigrant employees such as H-1B portability; provide funding for domestic STEM and computer science education and training programs; and protect the H-4 visa program. Additionally, policymakers should endorse reforms to the employment-based visa program which include increasing the overall number of employment-based immigrant visas available for aliens, as well as their spouses and children; eliminating arbitrary per-country caps; and exempting STEM university graduates from additional employment-based visa numerical limitations.

→ **The Biden Administration should rescind presidential proclamation suspending entry of aliens who present a risk to the U.S. labor market following the coronavirus outbreak.**

The contributions of foreign-born technology workers have never been more important. As U.S. companies get their employees back to work, immigrants working in the technology industry are vital to sustaining promising recovery trends, as well as supporting the United States' ongoing response to COVID-19. The Biden Administration should promptly rescind the Trump Administration's *Presidential Proclamation Suspending Entry of Aliens Who Present a Risk to the U.S. Labor Market Following the Coronavirus Outbreak*.

→ **The Biden Administration should restore protections for Deferred Action for Childhood Arrivals (DACA) recipients.**

The U.S. immigration system must reflect our core values of openness and inclusivity. Similar to foreign-born employees, our DACA colleagues are significantly contributing to the economic recovery. The Biden Administration must support a permanent legislative solution for DACA recipients, and, in the meantime, ensure these individuals are able to enroll in the program and are afforded the protections they deserve.

→ **The Biden Administration should rescind the Trump Administration's Executive Order (EO) 13769, Protecting the Nation from Terrorist Entry into the United States (Travel Ban).**

Immigration policy is innovation policy. Our immigration system should not discriminate against individuals based on their country of origin. The Biden Administration should swiftly rescind the Travel Ban to ensure the best and brightest are able work in the United States rather than for one of our foreign competitors who will hire them to compete against us in the technology and innovation space.

→ The Biden Administration should support increased funding for STEM and computer science education.

In addition to meeting today's immediate tech workforce needs, the U.S. workforce must be prepared and skilled to address the demands of tomorrow to ensure our country is built back better. The Biden Administration should support significant funding for STEM and computer science education, which will consist of technical training for teachers; expanded access to high-quality instructional materials and rigorous STEM and computer science coursework; hands-on practical experience for students; and effective regional partnerships. Furthermore, the Biden Administration must ensure that all students have access to high-caliber STEM and computer science education, including unrepresented minorities and girls.

→ The Biden Administration should support public-private initiatives to ensure that Americans have the right set of digital skills.

To create stable employment pathways in an increasingly digital economy, especially for minority, rural and other traditionally underserved communities, skill development needs to be prioritized and can be scaled through public-private partnerships. Such initiatives may include incentivizing community colleges to provide digital skills training; ensuring that government financial aid can support skills training and mid-career education; and unemployment insurance programs that cover online training programs.

→ The Biden Administration should support apprenticeships and technical training programs in STEM and computer science.

The COVID-19 pandemic has not dramatically impacted the scarcity labor trends in the technology sector. Thus, the Biden Administration should support funding for apprenticeships and career and technical training programs, such as the Carl D. Perkins Vocational and Technical Training Act, which is authorized through 2024, in technology fields to enable Americans of all ages to take advantage of the opportunities available in our industry. Similar programs can address the need for additional commitments to STEM education and industry-led training and retraining programs, which can capitalize on our diverse domestic talent.

→ The Biden Administration should bolster federal funding for investments in Minority Serving Institutions (MSIs) and Historically Black Colleges and Universities (HBCUs).

Innovation is birthed through diverse perspectives and strategies. As such, policymakers must ensure our STEM and computer science pipeline is accessible to and inclusive of historically disadvantaged groups to maximize the full potential of the U.S. domestic workforce who will drive our economic recovery. The Biden Administration should prioritize federal investments in MSIs and HBCUs, which are essential for further equipping and reaching people of color and play a significant role in educating the next generation of diverse STEM and computer science professionals.

→ **The Biden Administration should immediately rescind EO 13950, *Combating Race and Sex Stereotyping*.**

EO 13950 runs contrary to the goals of fostering a diverse and inclusive workforce as it limits the ability for government contractors to provide training addressing issues of systemic racism, unconscious bias, and other harmful concepts. A diverse and inclusive workforce will be the key to furthering America's economic success and strengthening our communities.

→ **The Biden Administration should support the development and adoption of inclusive technologies for persons with disabilities.**

Digital technologies have the potential to improve education, increase employment, promote independence, and improve the quality of life for persons with disabilities in America. The Biden Administration should support initiatives which enhance the development and adoption of inclusive technologies that increase equity and opportunities for persons with disabilities.

→ **The Biden Administration should work with Congress, where there is bipartisan support for extending workplace protections to nontraditional workers.**

Antiquated public and private safety nets disproportionately exclude many of the 53 million low-wage workers, 61 million workers of color, and 15 million workers in nontraditional work arrangements. Building a people-centered, tech-enabled and interoperable system of portable benefits is critical to advancing the financial security and economic mobility of America's workers, particularly as the number of independent workers increases in the digital economy.

The U.S. technology workforce will continue to be a significant component of our domestic economic recovery, as well as enable the United States to maintain its position a global leader in innovation.



Providing the Digital Infrastructure that American Citizens and Businesses Need to Succeed

This year, COVID-19 has made clear that connectivity has never been more critical for American families, schools, businesses, and communities. Federal investment in secure connected infrastructure is critical to bridging the digital divide and expanding broadband access. While the United States has made strides in bridging the digital divide, there are still nearly 19 million Americans without access to high-speed internet. In the future, the importance of digital technologies will only increase because they are also critical for the flexible grids and smart adaptive products, technologies, and services that are essential for the transition to a low carbon economy.

ITI recommends that the Biden Administration take the following actions:

- **The Biden Administration should pursue policies that reduce barriers to broadband adoption and promote digital skills in order to close the digital divide and the homework gap.**

The Administration should prioritize broadband adoption through expansion of the E-Rate program, initiatives that defray the cost of user's equipment, public-private partnerships to fund broadband infrastructure for unserved and underserved communities, and education-focused access programs like WiFi hotspots and laptops to students who qualify for subsidized school lunch programs.

→ **The Biden Administration should promote increased commercial use of spectrum to connect more Americans to high-speed wireless networks and accelerate the deployment of 5G.**

More spectrum, including licensed, unlicensed, and shared-use and particularly in the mid-band will be necessary to fuel 5G networks, and the Administration should advance shared uses policies that expand commercial spectrum opportunities and increase availability of spectrum. .

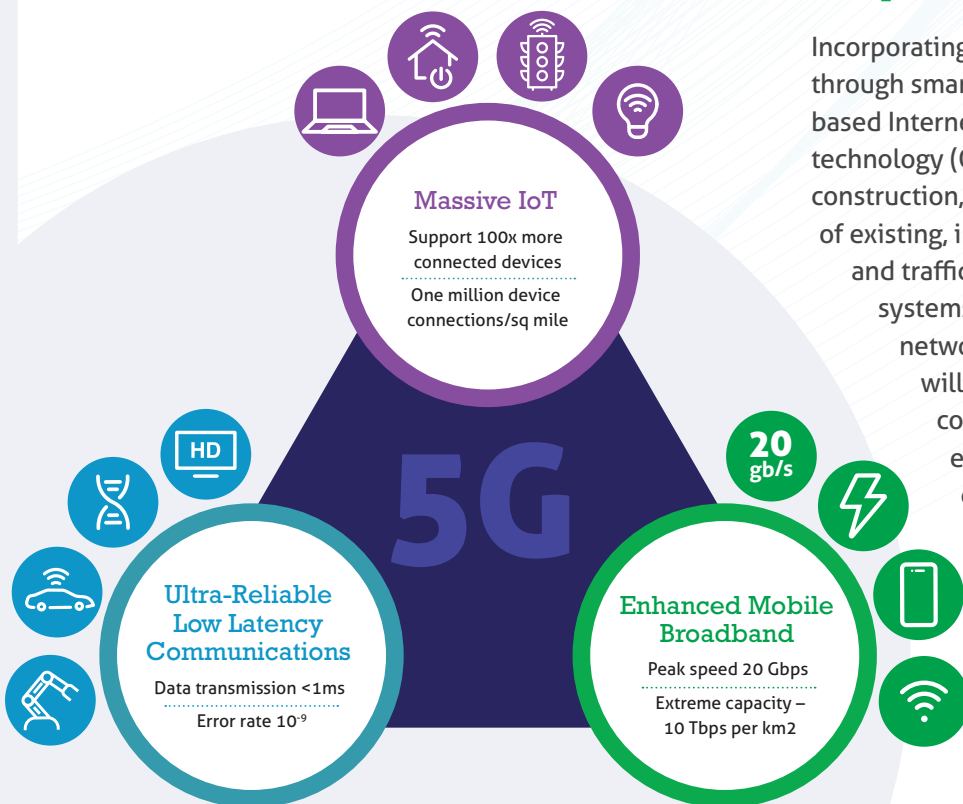
→ **The Biden Administration should set a goal of making high speed broadband and 5G available to all Americans within 5 years.**

The Administration should commit at least \$80 billion in secure broadband infrastructure funding. Public funding should be targeted to complement private sector investments and speed up both broadband and 5G roll out. Deploying secure 5G networks and ensuring ubiquitous access to connectivity will require additional measures,

including improving mapping availability; streamlining permitting and other regulatory barriers to facilitate small cell deployment for 5G, and ensuring the necessary workforce for 5G deployment, including tower technicians. We encourage the Administration to leverage the [5G Policy Principles for Global Policymakers](#) that ITI released earlier this year, which provide recommendations that cover everything from innovation and investment to 5G security, as well as a companion explainer document that helps lend context to our recommendations and debunks common myths. The administration should also utilize the ongoing work at the National Institute on Standards and Technologies National Cybersecurity Center of Excellence (NIST NCCoE) that leveraging leading industry technology and expertise to build a robust and security 5G architecture..

→ **The Biden Administration should improve resiliency through the deployment and integration of smart technologies into the design, construction, and use of traditional infrastructure and transportation systems.**

Incorporating emerging innovative technologies through smart, secure, data-driven, standards-based Internet of Things (IoT) and operational technology (OT) solutions, into the design, construction, and foundation of any new, or repairs of existing, infrastructure – from roads, bridges, and traffic management and transportation systems, to the electric grid, communications network, and water infrastructure – will improve public safety, reduce congestion, conserve energy, maximize efficiency, save significant taxpayer dollars, be more sustainable and environmentally-friendly, and enhance overall quality of life.



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→ **The Biden Administration should address deficiencies in our digital identity infrastructure.**

The benefits of a digital economy begin and end with trust. The COVID-19 pandemic laid bare the inadequacies of the nation’s digital identity infrastructure, as many in-person services have been eliminated and many could not be replicated online due to insufficient identity verification and authentication solutions. The majority of services in today’s economy – from healthcare to banking to online commerce – depend on knowing “who is on the other side” of a transaction. Traditionally, identification has been anchored in the physical world, such as presenting a passport, proof of address, or driver’s license in person. These forms of identifications are insufficient in a digital environment. This disconnect creates friction in an online environment, leads to increased fraud and theft, and degrades privacy. Together, government agencies and the private sector could drive significant risk and fraud out of online services and allow all citizens to more easily and securely engage in transactions online. More could be done to find secure, user-friendly, and privacy-centric ways in which agencies can serve as one

authoritative source to validate identity attributes in the broader identity market.

→ **The Biden Administration should support funding for R&D related to 5G and its applications, which should include open and interoperable architectures for 5G networks.**

Networks built with open interfaces will allow for interoperability and increase competitiveness, innovation and supplier diversity on a massive scale. As the United States seeks to build out secure 5G networks, it is important to consider new and innovative technology solutions as a way to address some of the challenges that have been identified in the *National Strategy to Secure 5G*. The best way to maximize the benefits of new technologies is to promote a competitive marketplace and let market forces work. Therefore, the Administration should support a technology-neutral environment that promotes innovation, allowing the private sector to lead and the market to determine the “winners.”

→ **The Biden Administration should incentivize manufacturing of advanced semiconductors in the United States.**

Revitalizing high-tech manufacturing of semiconductors in the United States has the potential to drive innovation across many different sectors for decades to come. For example, semiconductors enable advancements in artificial intelligence, quantum computing, medical technologies, and 5G. Investing in large-scale missions—like ushering in a silicon manufacturing renaissance—would restore American leadership in advanced manufacturing, secure these vital supply chains, grow well-paying jobs, and ensure our technological long-term national security and economic competitiveness. The Biden Administration should also pair these incentives with funding for research, development, testing and evaluation of projects and activities related to semiconductors and other components critical to the broader high-tech ecosystem.



Investing in the Delivery and Efficiency of Digital Government Services

It is imperative that American technological leadership and innovation is leveraged by government to modernize and improve the U.S. public sector's information technology (IT) and cybersecurity in ways that improve and revolutionize the delivery, security, and efficiency of digital government services. The pandemic has reinforced what years of more gradual change has made clear—that resilient, more capable, efficient, and economical IT systems, and more effective means of protecting them against cyber threats, are necessary.

The reality is that many of the systems that government still uses today are years, if not decades, old, and the government has made slow progress toward its digital transformation. Government systems are limited in the elasticity

of their capabilities, have become very costly to maintain and evolve, and in some agencies, are not at all well positioned for the challenges or changes anticipated in the future. Obsolete and legacy systems require greater maintenance, are more difficult to adapt to meet new needs, and the costs associated with them increasingly crowd out resources that should be invested in better, more capable, and less costly modern systems that more easily adapt. Additionally, failure to achieve a fully digital government will continue to impact government services and divert resources toward antiquated processes. Improved government technology and cybersecurity is crucial to providing Americans the government services they seek and need, through current and future acute challenges, like COVID-19, in ways

that evolve with changing initiatives and evolving expectations, and that preserve and help to restore trust in government. Further, government entities, as authoritative issuers of identity in America, are uniquely positioned to deliver critical components that address deficiencies in our nation's digital identity infrastructure. In doing so, much more could be done to find secure, user-friendly, and privacy-centric ways in which government could modernize the delivery of and access to government services to citizens.

Technology solutions and the resilience of the technology manufacturing supply chain can boost US competitiveness by enabling the U.S. government to deliver superior services to Americans. When governments select the right tools, they will improve the delivery of services to their constituents and strengthen democratic processes. Complacency, on the other hand, will erode them over time. Currently, the federal government spends approximately 80 percent of its nearly \$90 billion annual IT budget on the maintenance and operation of legacy networks and systems. These funds should be redirected and increased to hasten strategic modernization efforts of federal IT infrastructure.

ITI recommends that the Biden Administration take the following actions:

→ The Biden Administration should work with Congress to provide increased funding for strategic IT modernization investments and supply chain resiliency.

Meaningful and significant boosts in agency technology budgets as well as more robust funding and policy changes for dedicated government-wide IT efforts like the Technology Modernization Fund (TMF) are necessary. These funds should be used for foundational investments in cyber and technology modernization to retire

obsolete legacy systems and better prepare our country to recover from the pandemic stronger than we were before and serve us for years to come. Without meaningful investments in modernizing government IT and cybersecurity at all levels of government, the costs to keep limited and unsecure systems going will continue to rise, which would leave even less to invest in new IT and respond to unforeseen emergencies.

→ The Biden Administration should reform the cybersecurity policy landscape.

Streamlining and harmonizing the existing piecemeal approach to cybersecurity policies will enable government to leverage the best available cyber defensive capabilities and provide government leadership with the information needed to make informed, risk-based decisions on security. Deficiencies in federal IT security put government's and Americans' information at risk, undermine the effectiveness of new and ongoing government operations, and threaten the security of our country. Aligning government cybersecurity requirements with the NIST Framework for Improving Critical Infrastructure Cybersecurity (CSF) can help enable greater efficiency, competition, and scale. Relevant existing laws and regulations include but are not limited to the Federal Information Security Management Act (FISMA), the Federal IT Acquisition Reform Act (FITARA), the Federal Risk and Authorization Management Program (FedRAMP), the Internet of Things Cybersecurity Improvement Act, and the Cybersecurity Maturity Model Certification (CMMC) at the Department of Defense. Such reforms should focus on incorporating security policy best practices such as facilitating interoperability, leveraging existing international and industry standards, and avoiding duplicative requirements that may stifle the development and adoption of innovative technologies.

→ **The Biden Administration should support increased investments in government cybersecurity at both the Federal and State, Local, Tribal, and Territorial (SLTT) levels.**

The Continuous Diagnostics and Mitigation (CDM) program is the primary federal government initiative for protecting civilian federal agencies. Robust investment in the CDM and other federal cybersecurity programs will be critical for securing the delivery and efficiency of digital federal services. SLTT governments are facing increasing service delivery and cybersecurity challenges made worse by malicious cyber actors who have used attention on COVID-19 to their advantage, targeting SLTT government and individual citizens with ransomware, phishing, and computer-enabled financial fraud. It is critical that the Biden Administration make the necessary and profoundly important investments in the modernization and security of SLTT information systems so they can protect citizen data, improve digital services delivery, and ensure that state and local governments have the necessary tools to protect against cyber-attacks.

→ **The Biden Administration should increase competition and innovation within the government procurement process.**

Government procurement policy should be enhanced to prioritize laws, regulations, policies and programs that streamline the acquisition of commercial items, commercially available off-the-shelf products (COTS) and “as a service (aaS)” offerings. Such a reform strategy should leverage private sector innovation and foster competition by avoiding government- or agency-unique requirements or the favoring brand names without justification. To expedite the roll-out process, government officials should consider and grant additional flexibilities in the acquisition of innovative technologies. A streamlined procurement process will maximize competition and improve governmental mission delivery.

→ **The Biden Administration should improve secure access to public data.**

To leverage the wealth of information collected by government agencies on social and economic issues, government agencies should promote the use and provide access to public data. Interoperability of government data is essential so that information is not only collected but is also accessible to the public. Leveraging data transparency enables the development of AI-based tools that aid users in analysis and problem solving at speed and scale. Standards for federal and state agencies on open data and web APIs may be effective at achieving this goal. The Administration can also invest in shared data platforms, both within and across government agencies, to streamline public access and reduce fragmentation of various sources of government information. By supporting the National AI Initiative and the Executive Order Promoting the use of Trustworthy AI, the Administration can ensure that Government Agencies have the right AI-based tools to solve hard problems using these data.

→ **The Biden Administrations should assert renewed strong science-based climate policy leadership from Washington in collaboration with Congress and rejoin the Paris Agreement.**

Technology and data offer new tools to contribute to the achievement of climate ambitions. The ICT sector stands ready to support technical assistance and capacity building efforts that will be necessary to achieve a low-carbon future. This is critical for the future of humanity, and it will also spur economic growth, create jobs, improve health, and enhance the overall quality of life.



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