



YEAR ONE: A PRESIDENT'S GUIDE TO ECONOMIC GROWTH AND JOB CREATION THROUGH INFRASTRUCTURE INVESTMENT

The Trump administration will inherit numerous challenges that must be dealt with in the first year of his presidency, such as fixing our infrastructure financing model and rebuilding a modern, resilient infrastructure systems using innovative technology. The new Republican Congress and the Trump administration have an opportunity to usher in many positive changes. As an independent, bipartisan think tank, the Alliance for Innovation and Infrastructure is dedicated to researching and advocating for actionable policy solutions that address these pressing challenges. The following contains a selection of policy proposals based on Alliance for Innovation and Infrastructure research and expertise that should be prioritized by the Trump Administration.

First Step: Fix Our Infrastructure Financing Model

The next President will inherit a \$3-4 trillion infrastructure deficit. President Donald Trump says within his first 100 days in office, he will leverage public-private partnerships (P3s) and private investments to foster \$1 trillion in infrastructure investment over 10 years.¹

President Trump will face the difficult truth that passing massive spending bills, however, there are things the next president can do to stimulate private capital investment in public infrastructure projects.

Make Permanent the Department of Transportation's Build America Bureau to Leverage Government Resources and Remove Barriers to P3 Investment

The Build America Bureau (Bureau) was the result of a confluence of factors, including the Obama Administration's recognition that Congress was not going to authorize a national infrastructure bank, Congress's recognition that with federal coffers running dry, leveraging private investment may be the most viable way to fund large-scale infrastructure projects in the future, and both parties recognition that they needed to figure out how to do more with less.

¹ The Daily Caller, [Trump's Seven Point Plan to Drain the Swamp](#), Accessed on 10/26/16.

In that vein, Congress granted the Bureau management responsibilities and privileges to consolidate and more effectively utilize DOT's lending, grant, and finance programs, including the allocation of private activity bonds.² Further, the Bureau was tasked with establishing and disseminating best practices and providing technical assistance with innovative financing and P3s, and working with project sponsors to navigate environmental reviews and other permitting issues.³

If President Trump can leverage the Bureau's resources to effectively consolidate government programs, remove bureaucratic delay, encourage "innovative best practices in project planning, financing, delivery and monitoring"⁴ and bring more private dollars into the public infrastructure space, this program could have limitless potential. Permanent authorization requires Congressional action. President Trump should be prepared to convince Congress innovative infrastructure funding mechanisms are a critical part of building the future.

Provide Federal Backing for Issuance of State and Local Bonds Exclusively for Infrastructure Development

Financial writer and economic researcher, John Mauldin, proposed⁵ granting the federal government authority to put the full faith and credit of the United States behind efforts to drive private capital into important state and local infrastructure projects. We think this idea is worthy of serious consideration, as it combines the popular conservative "devolution" policy with the federal subsidies and federal backing typically popular with Democrat constituencies. Basically, there is something for everyone.

Specifically, Mauldin's proposal would allow the federal government to authorize the bond, sell it to the public, loan that money to the locality, pay the interest to the bondholder through a combination of general fund dollars and repayment from the borrower, and collect a much lower interest rate from the borrower as a subsidy of sorts. The locality would have a number of options to recover this money, including added surcharges to local services, i.e. pay a surcharge on your water bill to fund improved water infrastructure.

Trickier than the mechanics is determining whether these subsidies would be in addition to existing federal infrastructure spending or in place of other less impactful spending. These are decisions President Trump will need to make. The idea is worthy of consideration on the merits regardless of how it is funded. Even if tweaked to meet a more specific goal, at its core, a program of this nature would use private dollars to drive public infrastructure investment while leaving taxpayers on the hook for no more than an interest subsidy cost.

Energy Infrastructure: Building a Modern, Resilient Energy System

² Ibid.

³ Ibid.

⁴ U.S. Department of Transportation, [Build America Bureau](#), Accessed on September 23, 2016.

⁵ John Mauldin, [My Infrastructure Plan to Save the U.S. Economy](#), Accessed on 10/14/16.

Energy infrastructure comes in many forms, including anything that helps energy in any form, from liquid petroleum to electrons, get from point A to point B. But it's more than that. New technologies can help monitor and adjust how and when energy is used and make its use more efficient and environmentally friendly. These rapidly changing technologies in the electric sector, combined with misguided politically based decision making on pipeline infrastructure leave much to be desired with our current infrastructure.

The Trump administration will have the opportunity to tackle some of these issues in a positive way. Immediate focus should be on building the grid of tomorrow, facilitating and integrating low-carbon energy generation, providing certainty and expediency in the pipeline permitting process, and facilitating energy and energy technology exports.

Grid of Tomorrow Now

Electric Transmission and Distribution

The daily lives of all Americans are powered by electricity delivered by the electric grid, and yet, as the Department of Energy's first installment of its [Quadrennial Energy Review](#) made abundantly clear, the state of our nation's electric transmission and distribution infrastructure is in need of significant upgrades. Indeed, the American Society of Civil Engineers estimates that "the national electricity infrastructure gap is estimated to be \$107 billion by 2020."⁶ The Edison Electric Institute has identified approximately \$47.9 billion in transmission investments through 2025 that should be undertaken to maintain and improve reliability.⁷ In short, the country needs new power lines and upgrades to existing ones. There are several measures the Trump Administration could facilitate to achieve these goals:

Permitting: On average, it takes nearly 10 years to build new high-voltage transmission projects. The problem is primarily two-fold: 1) delays on federal lands resulting from lengthy reviews pursuant to the National Environmental Policy Act (NEPA); and 2) delays resulting from a disjointed siting process that requires separate approval from every state in which the transmission line crosses. This is vastly different from siting interstate natural gas pipelines which utilizes a single federal permitting process, resulting in approval (or disapproval) from the Federal Energy Regulatory Commission that, in most cases, preempts the need for individual state approval. Bringing the transmission line siting process more in line with the natural gas permitting process would significantly streamline the approval and construction of needed transmission projects.

Encourage Greater Use of Public-Private Partnerships: P3's have been successfully implemented in numerous U.S. infrastructure projects from roads to bridges to ports. Transmission projects, however, have not benefitted from the P3 model because transmission lines are typically privately owned assets (the result of a privatized and

⁶ ASCE, [Failure to Act: The Economic Impact of Current Investment Trends in Electricity Infrastructure](#) (2011).

⁷ EEI, [Transmission Projects: At a Glance](#) (updated March 2015).

competitive electricity system) and not considered public infrastructure as that term is generally understood in the world of roads and bridges. That said, certain major transmission projects – particularly those identified to be in the “national interest” – could benefit from the P3 model combining greater government support with private sector know how and investment.

Funding for Modernization, Reliability and Resiliency: The Trump Administration, through the Department of Energy, should invest significant resources to develop resiliency-related technologies designed to improve the resilience of electric infrastructure, mitigate power outages, continue delivery of vital services during emergencies, and maintain the flow of power to facilities critical to public health, safety, and welfare. Doing so will create a more modern and robust grid that will be better positioned to withstand and minimize any impacts resulting from severe weather, cyber-attacks or any other threats to the grid. Such resources can take the form of improved RD&D, matching grants to states, and opportunities to incent private sector investment, such as encouraging greater cost recovery at the state level.

Zero and Low Carbon Generation

By all measures – political, technological, and financial – the United States is heading toward a carbon-constrained economy. It is yet to be determined whether this path will include a formal carbon tax, national cap and trade program, or federal portfolio standards. But regardless, the Clean Power Plan, regional greenhouse gas initiatives, federal and state tax incentives, and state renewable energy and fuels targets are driving a shift toward zero and low carbon energy resources. And regardless of one’s views on climate change, a cleaner, more efficient energy system can have economic and public welfare benefits. Natural gas will continue to be the most cost-effective low carbon resource for the immediate time being, but there are numerous other opportunities for the Trump Administration to support prudent and economical zero and low carbon resources.

Utility-Scale Renewables: According to the U.S. Energy Information Administration, only 4.7% and 0.6% of the nation’s electricity came from utility-scale wind and solar, respectively, in 2015. Given the Nation’s vast wind and solar resources and federal and state policies intended to promote these resources, the amount of utility-scale renewable energy is expected to grow significantly in the next decade. And with thousands of acres available and small populations, permitting such projects on federal lands is an ideal fit. But efforts to date have been insufficient to draw developers. Indeed, there are only nine solar projects and four wind projects currently generating power on federal lands, this despite significant efforts by the Obama Administration to draw the interest of renewable developers. The Trump Administration should improve upon these efforts to further streamline the federal lands siting, permitting, and management processes. And taking a page out of the successful oil and gas leasing program, the White House should consider establishing a competitive process for renewable energy leases.

Utility-Scale Energy Storage: With less than 500 MW of non-hydro storage capacity currently online, utility-scale energy storage has a long way to go before achieving the

levels of penetration necessary to support significant amounts of wind and solar. And given the historically high costs of energy storage – particularly grid-scale battery storage – utilities have been unable to make a strong business case for commercial deployment outside of a handful of pilot projects. The goal of the Trump Administration with respect to storage should be to:

- 1) Assist in bringing down the costs through additional RD&D resources in support of the Department of Energy’s current energy storage program; and
- 2) Develop federal and state market frameworks that will allow utility-scale storage to compete with other traditional resources individually or in the aggregate. This likely will require changes in FERC wholesale market rules and other regulations that act as arbitrary barriers to entry for new entrants.

Civil Nuclear: Nuclear generation is essential to electric reliability in a carbon-constrained economy. Along with hydropower, nuclear power is the only other carbon-free baseload option available. Further, the nuclear industry supports thousands of jobs and billions of dollars of economic activity in the U.S., while also creating valuable technology export opportunities globally. The nuclear generation fleet is at risk under current legislative, regulatory and economic conditions. To help, there are steps the next President can take to ensure nuclear generation a level playing field.

- **Long-Term Storage:** The ongoing battle over the long-term storage of nuclear waste does not appear to be nearing resolution, leaving utilities in limbo with respect to how, where, and for how long to store existing nuclear waste stockpiles. The Trump Administration needs to bring legal and market certainty to this issue by directing the Department of Energy and the Nuclear Regulatory Commission to follow the law and prepare the Yucca Mountain repository to begin receiving nuclear waste shipments. The current debate over interim and alternative storage sites is an unfortunate delay tactic that puts taxpayer dollars at risk and keeps utilities without the long-term solution required by law.
- **Nuclear Technology Exports:** Nuclear energy has re-emerged as a coveted technology given global climate goals and strong global investment in zero and low carbon technologies. U.S. diplomatic efforts would be well served by providing allies and potential allies with nuclear technology and know-how. The next Administration should take the necessary measures to ensure U.S. technology firms can compete in the international nuclear energy market and lift export restraints that currently put the U.S. at a strategic and economic disadvantage in comparison to Chinese and Russian interests.
- **Tax Considerations:** To create tax parity between advanced nuclear technologies and renewable resources eligible for the Production Tax Credit (PTC), the Administration should work with Congress to cap the amount of energy production that is eligible for the PTC, or alternatively, remove the existing cap on advanced

nuclear tax credits. Serious consideration also should be given to prohibiting renewable energy resources from being eligible for the renewable energy PTC when used in combination with negative pricing, a market distorting phenomenon that puts nuclear generation at a severe disadvantage compared to PTC-eligible renewables.

- Clean Power Plan: President Obama’s Clean Power Plan (CPP) fails to properly recognize nuclear energy’s zero-carbon benefits. The CPP acknowledges nuclear energy’s value as a carbon-free power source, but does not consider the value of already existing plants in its “best system of emission reduction.” This approach is shortsighted, as it creates a disincentive for continued investment in existing nuclear facilities and could result in an emissions increase should these plants be forced to retire. The next Administration should modify the CPP to better reflect the value of existing nuclear generation as a zero emissions power source.

Hydropower: Carbon-free hydropower has the potential for significant growth, and yet has been overlooked in recent years as a viable and critical renewable energy resource. From conduits to pumped storage to wave and tidal to non-powered dams, hydropower could easily double its current capacity (nearly 8 percent of the Nation’s generation) and do so in a more cost effective and reliable manner than other alternative energy resources.

- Pumped Storage: Pumped storage is the only cost-effective energy storage option that has been deployed on a wide-scale, proving to be a vital asset in balancing intermittent wind and solar resources. And yet permitting such projects is a costly and time consuming effort, which has chilled investment in storage projects. The Trump Administration should recognize the essential role pumped storage can play in a low carbon energy strategy – serving as a storage and reliability resource for other renewables – and encourage Congress to exempt pumped storage from the comprehensive licensing standards and requirements of the Federal Power Act that apply to conventional large-scale hydropower projects.
- Non-powered Dams: Only 3 percent of the Nation’s 80,000 dams generate electricity. Electrifying just a small percentage of this untapped resource would have significant benefits, and it can be done with significantly less cost, environmental degradation, and time than conventional hydropower projects. Taking advantage of such existing, underutilized infrastructure is the ultimate sustainability measure. The Trump Administration, working with Congress, can facilitate the development of new hydropower infrastructure at existing non-powered dams by authorizing FERC to issue exemptions for those dams meeting narrow eligibility requirements that balance the importance of constructing new, zero-carbon energy resources and the environment.

Carbon Capture, Utilization, and Storage: The capture, transport, utilization, and permanent geologic storage of carbon dioxide (CO₂) has been widely and consistently recognized by major energy technology assessments as being both technically and economically feasible

and essential to achieving long-term reductions in global CO2 emissions. Commonly referred to as Carbon Capture, Utilization, and Storage (CCUS), these technologies are capable of commoditizing CO2 produced at power plants and industrial facilities for use in other applications, particularly enhanced hydrocarbon recovery in both conventional and unconventional formations, which can be done with net zero atmospheric emissions of CO2. Recent research efforts have targeted other potential applications for captured CO2, including to produce ethanol. Taken together, CCUS can play a critical role in providing for the continued use of fossil fuels and meeting energy, economic, environmental, and security priorities. President Trump must take steps to establish the legal, regulatory, and financial framework necessary to deploy CCUS at commercial scale.

Advanced Energy Technologies

Innovation and technology in the electricity sector is rapidly evolving with the potential for significant benefits for utilities and consumers in terms of efficiencies, security, cost and reliability. Advanced grid technologies, such as residential and commercial energy storage, microgrids, distributed energy, and smart metering technologies and other demand-side management resources, are becoming increasingly competitive and have significant appeal to an evolving consumer sector. Although much of this shift is taking place at the state level, the next Administration, with collaboration from the Department of Energy and the Federal Energy Regulatory Commission, can nevertheless play an important role in developing federal and state legislative and regulatory frameworks to support the following policies and technologies:

A Shift Toward a Decentralized Model: Distributed energy resources (DER) are growing at a pace 3 times faster than central station generation. Between 2015 and 2019, the US is expected to add 168 GW of distributed generation compared to 57 GW of centralized capacity.⁸ For instance, residential rooftop PV installations reached 1 million homes in 2016 and will add another 1 million within two years.⁹ Similarly, residential and commercial energy storage is expected to grow from 34 MW in 2015 to over 840 MW by 2020.¹⁰ As this “behind-the-meter” and decentralized trend continues, numerous technical, legal, regulatory, market, and political challenges must be overcome before wide-scale deployment of such technologies can be realized.

Empowering Consumers with Big Data and EnergyTech: “Big Data” energy analytics and new information technologies now offer a diverse suite of novel products and services that can identify and mitigate inefficiencies in the electricity supply chain. These innovative products and services can empower consumers to make smarter decisions in energy usage, while providing utilities new, more efficient ways to generate and distribute power. Providing consumers with more transparent information, including more accurate and

⁸ Karin Corfee, Navigant, “Emerging Trends in Energy Markets,” (July 2016).

⁹ Chris Martin, Bloomberg, “[Solar Makes Up Most of New U.S. Power Capacity for First Time](#),” (June 8, 2016).

¹⁰ Stephen Lacey, Greentech Media, “[How Distributed Battery Storage Will Surpass Grid-Scale Storage in the US by 2020](#),” (March 1, 2016).

real-time pricing, about the energy they are consuming is a critical element. Recent deployments of advanced metering infrastructure (i.e., smart meters) has helped in providing dynamic pricing and time of use options for some consumers, but much more can be done to provide consumers even greater control over their energy consumption.

Security and Data Privacy: As the grid becomes increasingly reliant on information technology and digital communications, thousands of potential new grid access points are being created. The is the downside of an increasingly digital and connected electricity system. While encouraging technology and innovation in the energy sector should be a top priority, the Trump Administration also must ensure that new grid-related products will improve operations; not leave the grid or consumer information more exposed.

Developing New Business and Regulatory Models: As consumer expectations and technology evolve, evaluating new business and regulatory models within the electricity sector is necessary to better reflect changing market conditions. The next Administration can help to identify and address regulatory barriers to entry, ineffective or market-distorting financial incentives, and artificial constraints on competition that could stifle innovation in this emerging sector.

Provide Certainty and Expediency in Pipeline Permitting Process

Oil and natural gas production in the United States increased by 71 percent and 23 percent, respectively, between 2010 and 2015.¹¹ The corresponding need for expanded midstream infrastructure has not kept pace, leaving some product stranded and pushing other product that would typically move by pipeline onto other, less safe modes of transportation. For example, the volume of crude oil transported on U.S. railroads increased by 814 percent from April 2010 to April 2015.¹²

While permitting issues have been problematic across the board, two key projects aimed at alleviating congestion have particularly negatively impacted by government process and politics. The Keystone XL pipeline that would have moved product from Canada to the Gulf Coast, while relieving congestion in North Dakota and Montana was denied a permit after inexplicably waiting more than 6 years for approval. Perhaps more problematic from a process standpoint, the Dakota Access Pipeline, intended to carry oil from the Bakken region in North Dakota to Illinois has been bogged down by permits granted and revoked, post-permit-approval government requests for work stoppage, lawsuits and more.

Regardless of the merits of any particular project, President Trump needs to ensure his administration puts in a place a reliable permit application review process and timeline. Project developers and their investors need certainty about the fate of their projects so they can ensure efficient movement of goods and services and deploy their capital accordingly.

¹¹ Department of Energy, Energy Information Administration.

¹² U.S. Government Accountability Office, *DOT's Rulemaking on Electronically Controlled Pneumatic Brakes Could Benefit from Additional Data and Transparency*, October 12, 2016.

Siting LNG Terminals and Improving Exports

The shale gas revolution triggered demand for the build out of new LNG export terminals (and the reconfiguration of import terminals) to export US-produced natural gas. To date, the Federal Energy Regulatory Commission (FERC), which is responsible for approving applications to site and construct LNG facilities, has a strong track record of processing permits in a reasonably timely fashion. The biggest threat to this efficient process has been recent guidance from the White House Council on Environmental Quality (CEQ) encouraging agencies, such as FERC, to consider the cumulative climate impacts of their permitting decisions. Such “guidance” could become a de facto legal standard requiring FERC to consider the upstream and downstream climate impacts of an LNG terminal, as opposed to considering only those environmental and climate impacts having a direct nexus to the footprint of the LNG terminal itself. This would go well beyond the scope of FERC’s current review. The Trump Administration should consider unwinding this CEQ guidance, which will have a chilling effect on investment in LNG assets as well as many other infrastructure projects.

With respect to approving an application to export LNG (as opposed to the approval to site and construct an LNG terminal), the Obama Administration deserves credit for expediting that process, albeit only doing so after much pressure from Congress and our allies abroad. The Trump Administration should be equally committed to streamlining the regulatory process for authorizing LNG exports. In the past, DOE has been guilty of letting export applications sit in bureaucratic limbo, even though review pursuant to the National Environmental Policy Act (NEPA) had been completed. Committing to a thirty-day deadline to act on applications after completion of the required NEPA review would help to further expedite LNG shipments abroad.

Transportation Infrastructure to Support a Growing Economy

People, goods and services move in a number of ways using multiple modes of transportation. While all modes of transport are deserving of the next administration’s attention, we believe the first 100 days should be focused on addressing long-term solvency of the Highway Trust Fund and correcting the misalignment of port and harbor excise taxes with port and harbor expenditures.

Highway Trust Fund

According to the Congressional Budget Office (CBO), the Highway Trust Fund (HTF) will suffer a \$107 billion cumulative shortfall by 2026.¹³ The deficit would be significantly larger but for a \$75 billion cash infusion from the general fund since Congress and the current Administration haven’t taken any serious steps to reach balance or shore up the fund in the long-term. Notwithstanding the transfer, deficits have held relatively steady in recent years.

¹³ Congressional Budget Office, [Projections of Highway Trust Fund Accounts](#), March 2016.

To prevent future intergovernmental transfers, resulting in increased deficits and a larger national debt, the Trump Administration needs to find a long-term solution that will either increase revenue, decrease spending, or a combination of both. And, they need to do it in the first 100 days of their administration.

Some common proposals the administration can consider are:

- Devolution – the concept of limiting the federal governments role in surfaces transportation funding and shifting more responsibility and control to the states
- Increasing excise taxes (the gas and diesel taxes) without any additional structural spending reforms
- Mandatory Repatriation – requiring multinational corporations to bring overseas earnings back into the U.S. for taxation purposes

We recommend the Trump Administration be a bit more creative and consider combining some of the ideas listed above, or considering some other options, including:

- Making gas and diesel taxes true user fees by eliminating all authorized spending unrelated to physical constructions of roads and bridges and ensuring that road use by hybrid and electric vehicle owners were fully captured by the fee
- An automatically adjusting excise tax rate, which could increase and decrease based on a fixed formula depending on current gas prices

Until the larger structural issues are resolved the HTF will not become solvent, which will remain a serious problem for economic recovery and a serious headache for President Trump.

Harbor Maintenance Trust Fund

In its most recent infrastructure report card, the American Society of Civil Engineers gave our ports and harbors a “C” grade.¹⁴ This is more than problematic considering the importance of waterborne commerce to our economy and to global trade. Deepening and maintaining our ports will become even more critical as larger ships begin moving through the newly expanded Panama Canal, which will allow vessels up to 14,000 TEUs to pass through the Canal – nearly triple the current 5,000 TEU maximum.¹⁵

The Harbor Maintenance Trust Fund (HMTF) derives revenue from a .125 percent Harbor Maintenance Tax (HMT) assessed at certain ports on the value of commercial cargo shipped (excluding exported product), or cruise tickets sold. The taxes collected under this provision (and interest accrued by the account) are intended to fund qualified HMTF activities, including dredging channels, maintaining jetties and breakwaters, and operating locks along the coasts and in the Great Lakes.

¹⁴ American Society of Civil Engineers, [2013 Report Card for America's Infrastructure](#).

¹⁵ [Official Website for the Panama Canal](#). Accessed on 10/26/16.

Of the nearly \$1.8 billion collected under the HMT annually, only about half is spent despite the fact that our harbors are in dire need of help. As our new President looks for quick infrastructure investment opportunities, i.e. those that could be implemented within the first 100 days, fixing the HMTF may be as common sense as it gets.