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By Sarah M. Beason, Roderick D. Hall, Stephen A. Martinko

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CHALLENGES IN THE DEVELOPMENT OF ELECTRIC TRANSMISSION INFRASTRUCTURE

By Eric E. Freedman, William M. Keyser

There is broad consensus among policymakers and electric industry participants in the United States that the nation's electric transmission system requires significant enhancement and expansion. More than a dozen years ago, a study commissioned by the Department of Energy and prepared by a cross-section of industry participants concluded, "America's electric system, 'the supreme engineering achievement of the 20th century,' is aging, inefficient, and congested, and incapable of meeting the future energy needs of the Information Economy without operational changes and substantial capital investment over the next several decades." The improvements are required in part in order to maintain and enhance the reliability and security of the high-voltage electric grid. They are required also to integrate new utility-scale wind, solar, and other renewable energy generating facilities into the electric delivery system.

READ THIS ARTICLE

IN A BUDGET CONSTRAINED ENVIRONMENT, FEDERAL POLICYMAKERS INCREASINGLY ARE PROPOSING ALTERNATIVE INFRASTRUCTURE FINANCING POLICIES

By Judson M. Greif

On the heels of calendar year 2014, where Congress and the Administration made strides toward proposals of innovative infrastructure financing models, 2015 held some action. In 2014, the House Transportation and Infrastructure Committee released a special report on public-private partnerships (PPPs), detailing a series of studies and hearings on how PPPs are developed and the value they offer. Additionally, President Barack Obama signed an executive order that created the "Build America Transportation Investment Initiative," which created a collaborative effort between the U.S. Departments of Transportation (US DOT) and Treasury (Treasury) designed to develop increased private investment in infrastructure. While each effort was commendable, each effort fell far short of changing the infrastructure investment landscape.

While progress was incremental, most agree that Congress and the Administration took further action in 2015 that many are hoping will yield better results.

READ THIS ARTICLE

FROM THE EDITORS

Welcome to the Winter 2016 edition of Environmental Policy Quarterly, published jointly by the Environmental, Land and Natural Resources Practice Group and the Public Policy and Law Practice Group of K&L Gates. Environmental Policy Quarterly highlights significant developments and issues of public policy relating to the environment and natural resources in the United States and globally.

This edition focuses on policy and regulatory issues facing U.S. Congress, federal agencies and private actors in connection with infrastructure development and financing. . As has been well documented elsewhere, infrastructure systems in the U.S. are increasingly vulnerable and inadequate. The American Society of Civil Engineers, by example, gave U.S. infrastructure a D+ in its most recent "Report Card for America's Infrastructure" in 2013. And multiple conferences, presentations, and white papers have focused on the problem and potential solutions.

We focus particularly in this edition on aviation, electric transmission and waterway infrastructure, with attention to recent and potentially forthcoming legislative and regulatory developments. We also explore the unique difficulties presented by infrastructure project financing and discuss various innovative financing mechanisms.

We hope you find this edition of Environmental Policy Quarterly of interest, and we welcome your feedback.

[1] E.g,. Road to Growth: The Case for Investing in America's Transportation Infrastructure (Business Roundtable, September 2015); Investment Trends and Fundamentals in US Transmission and Electricity Infrastructure (The Brattle Group, July 2015).

EDITORS

Cliff L. Rothenstein
Government Affairs Advisor
cliff.rothenstein@klgates.com

Craig P. Wilson
Partner
craig.wilson@klgates.com

OUR PRACTICES

ENVIRONMENTAL, LAND AND NATURAL RESOURCES

K&L Gates has experienced lawyers in the United States, Europe, and Asia Pacific who are dedicated to developing creative and cost-effective solutions to the environmental, land use, and natural resource challenges confronting our clients. A number of our environmental lawyers are former regulatory lawyers and prosecutors, having served with the U.S. Environmental Protection Agency, Department of Justice, Department of Energy, National Marine Fisheries Service, and state agencies. Our environmental practice recently was named "Law Firm of the Year" for environmental law in the 2013 *U.S. News-Best Lawyers*® survey, a recognition given to only one law firm in each practice area.

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The K&L Gates policy group is the largest of any fully integrated global law firm. The group has nearly 50 bipartisan lawyers and policy professionals with 500 years of combined experience in federal and state government. In 2012, we were ranked among the top five law firms in the *National Law Journal*'s "Influence 50" survey. Our goal is to understand a policy issue from every direction—substantively and politically—and to use the collective knowledge and experience of our team to help a client achieve its objectives. This approach has worked for four decades, which is why the policy group has thrived through eight administrations and 21 Congresses.

PRACTICE CONTACTS

Environmental, Land and Natural Resources

David A. Franchina
Partner
dave.franchina@klgates.com

Craig P. Wilson
Partner
craig.wilson@klgates.com

Public Policy & Law

Darrell L. Conner
Government Affairs Counselor
darrell.conner@klgates.com

Michael Scanlon
Partner
michael.scanlon@klgates.com

2016: A BIG YEAR FOR AVIATION

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U.S. aviation interests should anticipate a busy 2016, as Congress and federal regulators are focused on major reform efforts and new environmental regulations. In September 2015, Congress provided a six-month extension of federal aviation funding as part of the Airport and Airway Extension Act of 2015.[2] As a result, Congress must consider Federal Aviation Administration (FAA) reauthorization and reform measures ahead of the expiration of both FAA's authority and its stop-gap funding on March 31, 2016.

In addition to legislative action, the New Year is also expected to include a significant federal agency focus on the U.S. aviation industry. The FAA is continuing work on NextGen implementation, reducing aviation's adverse environmental impact through the use of satellite-based navigation, and will begin considering applications for Voluntary Airport Low Emission (VALE) funding to reduce airport ground emissions early next year. The Environmental Protection Agency (EPA) has indicated that it will regulate certain aircraft engines for greenhouse gas (GHG) emissions under the Clean Air Act (CAA) in collaboration with international GHG emission standards.

FAA REAUTHORIZATION PRINCIPLES

House Transportation & Infrastructure Committee Chairman Bill Shuster (R-PA) has outlined a number of principles in preparation for consideration of FAA reauthorization legislation in 2016:

1. "Providing a safe, efficient, modern aviation system,
2. Benefiting passengers with fewer delays and greater reliability,
3. Fostering innovation, and
4. Keeping America competitive in this vital economic sector."[3]

Based on these principles, Chairman Shuster has outlined two transformative proposals for FAA reform focused on air traffic control (ATC) and certification processes for aviation technologies.

Under the proposal Chairman Shuster has summarized, the specific details of which have not yet been released, ATC functions would be separated from the FAA. An independent, non-profit,

[2] Pub. L. No. 114–55, § 103, 129 Stat. 522 015).

[3] H. TRANSP. & INFRASTRUCTURE COMM., PRINCIPLES OF AVIATION REAUTHORIZATION (2015), available at http://transportation.house.gov/uploadedfiles/faa_bill_principles.pdf.

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federally chartered corporation would be established to operate a modernized ATC system, instead of the FAA. The corporation would be governed by a board of aviation system users.[4]

FAA reauthorization legislation is also expected to address certification reform. In particular, reform efforts are likely to focus on streamlining certification processes, enhancing industry collaboration, establishing clear certification performance objectives and metrics, and facilitating delegation of FAA certification authority to private industry.

Another issue likely to arise as part of the FAA reauthorization and reform discussion is drone registration, with Transportation Secretary Anthony Foxx asserting that the FAA reauthorization bill should address unmanned devices and related security and privacy issues. Congress may also address NextGen implementation, which could improve the environmental impact of airplanes.

ENVIRONMENTAL BENEFITS OF THE FAA'S NEXTGEN EFFORTS

Meanwhile, the FAA is continuing its efforts to implement NextGen, which can provide more effective utilization of airspace and provide significant environmental benefits. As part of this initiative, the NextGen Environmental Management System ensures compliance with the National Environmental Policy Act and promotes environmentally friendly technologies.

Several NextGen focus areas aim to achieve more fuel-efficient operations, such as the Automatic Dependent Surveillance—Broadcast (ADS-B). ADS-B, more precise, GPS-enabled navigation, will allow aircraft to better manage intervals and pilots to avoid turbulent flight levels. Performance Based Navigation results in "fuel savings and a reduction in aircraft emissions,"[5] and Required Navigation Performance enables "aircraft to fly more direct flight paths." The focus on

Environment performance indicators

Performance Indicator (CY)	2005	2006	2007	2008	2009	2010	2011	2012	2013
CO_2 Emissions *Kilograms* Estimated quantity of carbon dioxide emissions (CO_2) emitted by commercial aircraft within the NAS.	$1.88_{\times 10^{11}}$	$2.30_{\times 10^{11}}$	$2.34_{\times 10^{11}}$	$2.13_{\times 10^{11}}$	$2.01_{\times 10^{11}}$	$1.71_{\times 10^{11}}$	$1.76_{\times 10^{11}}$	$1.73_{\times 10^{11}}$	$1.77_{\times 10^{11}}$
NAS-Wide Energy Efficiency *Kilograms per Tonne-Kilometer* Estimated fuel burn in kilograms per revenue tonne kilometer	0.359	0.351	0.348	0.341	0.342	0.329	0.327	0.331	0.328

4 Id.

5 FED. AVIATION ADMIN., NEXTGEN PRIORITIES OCTOBER 2015: JOINT IMPLEMENTATION PLAN 3 (2015), available at http://www.faa.gov/nextgen/media/NGPriorities-2015.pdf.

environmental benefits is also reflected in the NextGen performance metrics, which include environment performance indicators such as CO2 emissions and energy efficiency.[6]

FAA'S VALE PROGRAM MAKES CLEAN ENERGY INVESTMENT AT AIRPORTS A PRIORITY

In September 2015, the FAA announced $24.5 million in federal grants to commercial service airports across the country to aid in their efforts to reduce airport ground emissions.[7] The funding was made available through VALE. First authorized by Congress in 2003,[8] VALE is intended to aid airports in EPA-designated nonattainment or maintenance areas to improve air quality.[9] In addition to capital investments, airports may also generate Airport Emission Reduction Credits that can be applied to future capital projects to meet certain CAA requirements.[10]

Over the past decade, the FAA has funded, via VALE, 87 clean airport technology projects representing a total investment of approximately a quarter of a billion dollars.[11] Eligible project types have included alternative fuel vehicles, gate and ground support electrification, remote ground power units, geothermal heating systems, solar hot water systems, and underground fuel hydrant systems. Intermodal connection stations, people mover systems, or similar airport projects that remove vehicles from airport roadways may also qualify for VALE funding.[12] The FAA will begin accepting VALE applications from airport sponsors beginning the first quarter of 2016.

As the Obama Administration continues its focus on the environmental footprint of the aviation industry, innovative financing and regulatory incentives to increase investments in proven low-emission technology will continue to be an area of interest for regulators and policymakers.

EPA PROPOSAL TO REGULATE AIRCRAFT ENGINES FOR GHG EMISSIONS

In June 2015, the EPA advised that it was "proposing to find that GHG emissions from certain classes of engines used in aircraft contribute to air pollution that causes climate change and endangers public health and welfare under" the CAA.[13] The EPA noted that aircraft are "the single largest GHG-emitting

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[13] ENVTL PROT. AGENCY, EPA TAKES FIRST STEPS TO ADDRESS GHG EMISSIONS FROM AIRCRAFT ENGINES 1 (2015) [hereinafter EPA TAKES FIRST STEPS], http://www3.epa.gov/otaq/documents/aviation/420f15023.pdf.

[6] Press Release, FAA Awards $24.5 Million in Environmental Grants to Airports, http://www.faa.gov/news/press_releases/news_story.cfm?newsId=19495.

[7] Press Release, FAA Awards $24.5 Million in Environmental Grants to Airports, http://www.faa.gov/news/press_releases/news_story.cfm?newsId=19495.

[8] Vision 100—Century of Aviation Reauthorization Act, Pub. L. No. 108-176, 117 Stat. 2490 (2003). [9]

[10] FED. AVIATION ADMIN., OFFICE OF AIRPORTS PLANNING AND ENVIRONMENTAL DIVISION, LIST OF U.S. COMMERCIAL SERVICE AIRPORTS AND THEIR NONATTAINMENT AND MAINTENANCE STATUS (2011), available at http://www.faa.gov/airports/environmental/vale/media/vale_eligible_airports.xls.[11]

[12] FED. AVIATION ADMIN., OFFICE OF AIRPORTS, AIRPORT PLANNING AND PROGRAMMING, VOLUNTARY AIRPORT LOW EMISSION PROGRAM TECHNICAL REPORT VERSION 7 (2010), http://www.faa.gov/airports/environmental/vale/media/vale_techreport_v7.pdf.

transportation source not yet subject to GHG standards" in the United States and account for three percent of total U.S. GHG emissions.[14]

As a result, the EPA Administrator proposed to make endangerment and cause and contribute findings for certain aircraft engines emitting GHGs.[15] The EPA findings would focus on smaller jet aircraft, such as the Cessna Citation CJ2+, as well as the largest jet aircraft, the Airbus A380 and the Boeing 747.[16] The proposed findings would not include "engines used in military aircraft or smaller aircraft," including helicopters and smaller turboprops.[17]

The EPA also issued an Advance Notice of Proposed Rulemaking regarding establishing an international emissions standard for aircraft promulgated by the International Civil Aviation Organization (ICAO)—a specialized United Nations entity—and adopting regulations under the CAA implementing the international emission standard for certain aircraft engines.[18] The ICAO is expected to adopt a final international aircraft CO2 emissions standard as early as February 2016.[19] The EPA notice was "an initial step in the process for EPA to adopt CO2 standards promulgated by ICAO in the future."[20]

CONCLUSION

This year could be a transformative year for the U.S. aviation industry: Congress and federal regulators are focused on significant reform efforts and new regulations on environmental protection. Interested stakeholders should engage with Congress regarding FAA reauthorization and reform efforts, and submit input as part of the FAA and EPA regulatory processes as they continue to develop new regulatory regimes.

AUTHORS

Sarah M. Beason
Associate
+1.202.778.9019
sarah.beason@klgates.com

Roderick D. Hall
Government Affairs Advisor
+1.202.778.9868
rod.hall@klgates.com

Stephen A. Martinko
Government Affairs Counselor
+1.202.778.9320
Stephen.Martinko@klgates.com

[14] Id. at 2.

[15] Id. at 3.

[16] Id.

[17] Id.

[18] Id. at 1; Proposed Finding That Greenhouse Gas Emissions From Aircraft Cause or Contribute to Air Pollution That May Reasonably Be Anticipated To Endanger Public Health and Welfare and Advance Notice of Proposed Rulemaking, 80 Fed. Reg. 37758 (Jul. 1, 2015).

[19] EPA TAKES FIRST STEPS, supra note 4, at 2.

[20] Id. at 3.

INVESTING IN AMERICA'S WATERWAY INFRASTRUCTURE

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America is a maritime nation, abounding in internal waterways and coastal harbors that help drive the United States' economy. For example, 99 percent of international trade passes through America's ports, which contributes to almost one-third of the nation's Gross Domestic Product. The nation's maritime and waterway infrastructure of harbors, channels, locks, and dams requires significant federal investment to fully exploit America's national resources.

The primary legislative vehicle for supporting the U.S.'s maritime transportation infrastructure is the Water Resource Development Act (WRDA). WRDA legislation authorizes U.S. Army Corps of Engineers (USACE) civil works projects and policies to develop and maintain U.S. harbors, channels, locks, and dams, promoting American competitiveness by ensuring the flow of commerce. Additionally, WRDA legislation may authorize environmental restoration projects.

The 113th Congress passed the Water Resources Reform and Development Act of 2014 (WRRDA 2014)[22] ; and in 2016 Congress is expected to consider another WRDA bill. It took Congress more than seven years to produce WRRDA 2014, but the next WRDA bill will come only two years later. WRDA 2016 will likely be less comprehensive and focus on fewer USACE projects and on improving certain WRRDA 2014 policy changes.

WRRDA 2014

WRRDA 2014 authorized needed investment in 34 USACE water development projects, including improving dam and levee safety, maintaining and developing ports, addressing flood risk management, improving navigation and commerce, responding to extreme weather events, and serving environmental restoration needs. WRRDA 2014 also reformed the Inland Waterways Trust Fund[23] and the Harbor Maintenance Trust Fund (HMTF), including setting an operation and maintenance activities appropriations target of 100 percent of HMTF annual collections by FY 2025.[24]

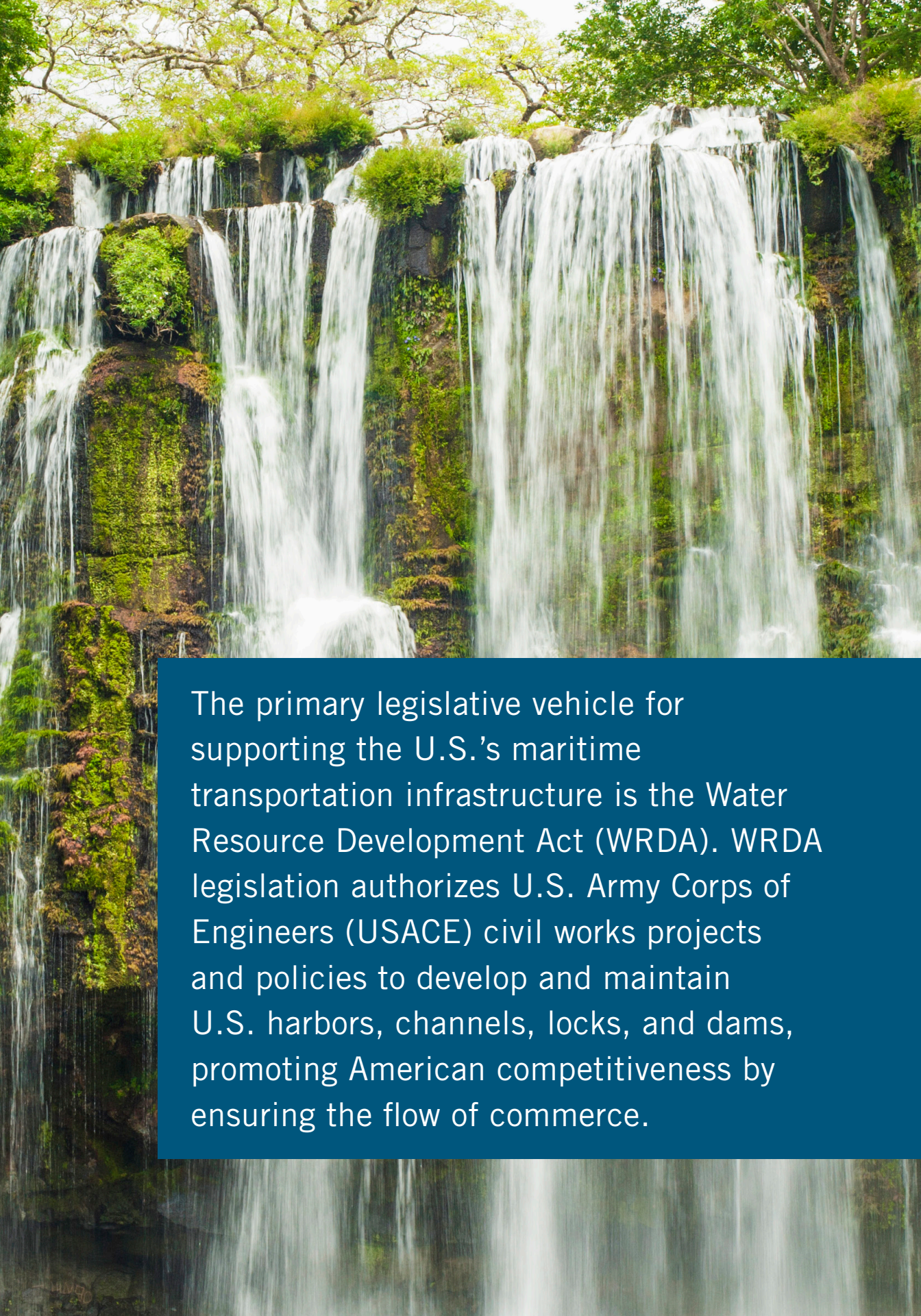
WRRDA 2014 also enhanced the agency's ability to leverage limited federal

[21] H. TRANSP. & INFRASTRUCTURE COMM., THE WATER RESOURCES REFORM AND DEVELOPMENT ACT OF 2014 4 (2014), available at http://transportation.house.gov/uploadedfiles/wrrdabookletpostconflowres.pdf.

[22] Pub. L. No. 113-121, 128 Stat. 1193 (2014)..

[23] §§ 2001-13

[24] § 2101



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funding for projects by working more closely with private industry. WRRDA 2014 established a Water Infrastructure Public Private Partnership Pilot Program[25] and facilitated private investment and financing of water resources infrastructure projects, such as permitting private stakeholders to contribute funds to expedite permit evaluation and processing.[26] In addition, WRRDA 2014 deauthorized old, inactive projects totaling $18 billion in authorized spending to offset new project authorization costs.[27] To prevent future backlogs, WRRDA 2014 also sunset new project authorizations.[28]

As part of congressional oversight of the USACE, WRRDA 2014 reformed internal agency processes to reduce red tape, increase transparency, and streamline administrative reviews.[29] It enhanced congressional oversight of water resources development initiatives by establishing a more transparent process for future WRDA bills to prioritize USACE projects. WRRDA 2014 also established deadlines and monetary caps for feasibility studies, consolidated and eliminated duplicative reviews, and required concurrent reviews to streamline environmental review processes and accelerate project delivery.

WRDA 2016

Building off WRRDA 2014, Congress is motivated to complete a bipartisan WRDA bill in 2016. Next year will be Chairman Jim Inhofe's (R-OK) last term as chairman of the Senate Environment and Public Works (EPW) Committee because he is term limited by Senate Republican Caucus rules, and ranking member Barbara Boxer (D-CA) is retiring. This may also be the last WRDA bill under Congressman Bill Shuster (R-PA) as chairman of the House Transportation and Infrastructure Committee, whose term as chairman will expire at the end of the 115th Congress. Therefore, both committees are very driven to complete a WRDA bill next year.

Although Congress may be motivated, the congressional calendar during the presidential election year will make it rather difficult to pass significant legislation. As a result, any effort to move WRDA would have to come early in 2016. The recent Dear Colleague letter from Chairman Inhofe and ranking member Boxer calling for Senators' water resources priorities by February 12, 2016 indicates that the Senate will likely move WRDA in March 2016.[30] Accordingly, the House would likely move its WRDA bill in a similar timeframe.

In addition to authorizing USACE civil works projects and addressing continued reforms to the HMTF, WRDA 2016 will likely improve upon several provisions in WRRDA 2014. One such area of improvement could be the USACE's annual reports to Congress under section

[25] § 5014.

[26] § 5027.

[27] §§ 6001, 6004.

[28] § 6003.

[29] See §§ 1001-52.

[30] Letter from Sen. James Inhofe, Chairman, & Sen. Barbara Boxer, Ranking Member, S. Env't. & Pub. Works Comm., to Members, S. Env't. & Pub. Works Comm. (Dec. 9, 2015).

7001 of WRRDA 2014. The USACE's 2015 section 7001 report did not meet congressional expectations, and the 2016 report is expected in February. If this report is not satisfactory, Congress may focus on reforming section 7001 to provide additional guidance to the USACE for preparing the report.

Two other programs WRDA 2016 could enhance are the Water Infrastructure Public Private Partnership Pilot Program and the Water Infrastructure Finance and Innovation Act (WIFIA).[31] WRRDA 2014 established the public-private partnership pilot program, but it is not yet effectively set up. WRDA 2016 may address ways to better leverage limited federal funding and improve the pilot program. Similarly, additional measures beyond WIFIA may be needed to provide USACE with more innovative project funding and financing options.

Congress will likely continue its focus on improving project delivery, environmental streamlining, and internal process reform in the next WRDA. WRDA 2016 can build off administrative reforms achieved under the Moving Ahead for Progress in the 21st Century Act,[32] WRRDA 2014, and the recently enacted Fixing America's Surface Transportation Act.[33]

CONCLUSION

Congress will likely consider a WRDA bill in 2016, and the Senate EPW Committee is already soliciting water resources priorities and comments on USACE projects, due early February 2016. Interested stakeholders should engage now with Senate and House committees to promote their water resource development projects and other related initiatives.

AUTHORS

Sarah M. Beason
Associate
+1.202.778.9019
sarah.beason@klgates.com

James A. Sartucci
Government Affairs Counselor
+1.202.778.9374
jim.sartucci@klgates.com

[31] See §§ 5021-35.

[32] Pub. L. No. 112-141, 126 Stat. 405 (2012).faa_bill_principles.pdf.

[33] Pub. L. No. 114-94 (2015).

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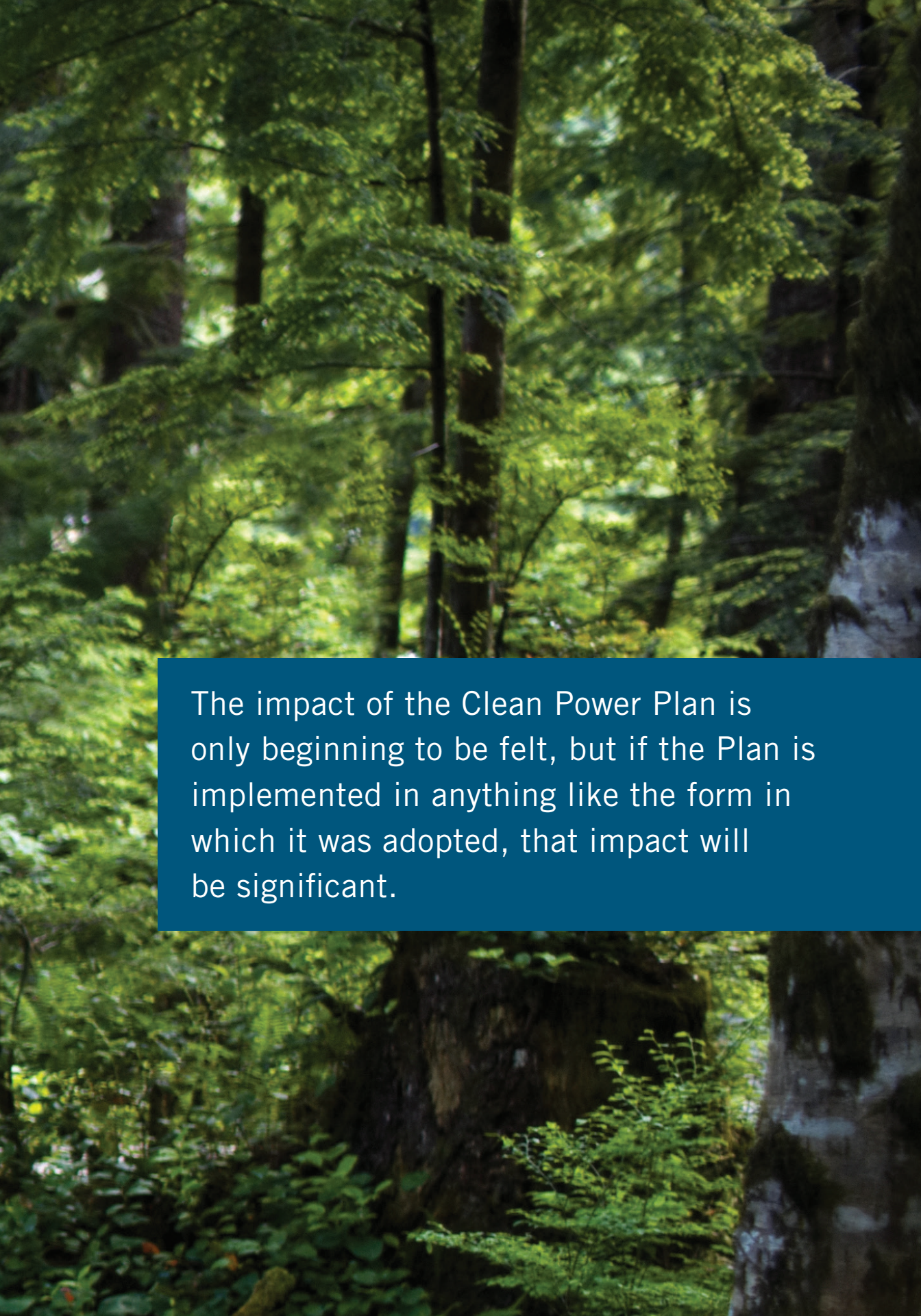
An expansion of the U.S. electric transmission will be required also as a result

[34] "Grid 2030" — A National Vision For Electricity's Second 100 Years, United States Department of Energy, Office of Electric Transmission and Distribution (July 2003), at iii.

[35] The Critical Role of Transmission in Clean Power Plan Compliance, Presentation by Judy W. Chang, The Brattle Group, InfoCast Transmission Summit West 2015, September 28, 2015, at 13.



The impact of the Clean Power Plan is only beginning to be felt, but if the Plan is implemented in anything like the form in which it was adopted, that impact will be significant.

of the requirements of the Clean Power Plan, which was issued by the United States Environmental Protection Agency (EPA) on August 3, 2015.[36] The impact of the Clean Power Plan is only beginning to be felt, but if the Plan is implemented in anything like the form in which it was adopted, that impact will be significant. The Clean Power Plan will result in the retirement of a considerable amount (by the EPA's own estimate, 100-110 GW)[37] of existing coal-fired generation, and the replacement of those plants with natural gas-fired generation and renewable energy (again, by the EPA's own estimate, 80-85 GW)[38] generation. The delivery of energy from those plants, and, in particular, the new renewable energy plants, will require the construction of a large number of new electric transmission lines. In addition, the decommissioning of a large number of coal-fired plants, which currently play an important role in furnishing required baseload generation and maintaining the stability of the electric transmission system, will require extensive investment to preserve the reliability of the electric transmission system. Most renewable resources, because they operate on an intermittent and variable basis depending on the availability of the natural resource that powers them, are more challenging to integrate into the transmission system than coal-powered facilities, which function generally as continuously operating baseload facilities, or natural gas-fired facilities, which can be dispatched and scheduled on a very precise and predictable basis.

In the face of this pressing need for new electric transmission facilities, there are a number of legal and regulatory constraints that add to the costs, time, and risks involved in the development of such facilities. Despite significant efforts over the past decade to promote greater coordination between federal and state agencies in the electric transmission planning and permitting process, that process continues to involve a complex and overlapping array of federal and state laws and regulations that create inconsistency and uncertainty and that prevent federal and state agencies from working together as closely as they should to streamline and expedite the planning and

[36] Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units, 80 FR 64661 (October 23, 2015).

[37] The Critical Role of Transmission in Clean Power Plan Compliance, Op. Cit., at 7.

[38] Id.

permitting process. The development of electric transmission infrastructure has been impeded also by policies that have failed adequately to encourage alternative approaches to ownership and financing of such infrastructure.

PLANNING AND PERMITTING OF ELECTRIC TRANSMISSION FACILITIES

The planning and development of new electric transmission lines is a costly and time-consuming process. In a series of orders, of which the most recent is Order 1000[39] , the Federal Energy Regulatory Commission (FERC) has imposed requirements and created incentives for the planning of transmission facilities on a regional and inter-regional basis. The actual permitting of the lines nonetheless remains largely the province of state and local regulation. Under the Natural Gas Act, developers of interstate natural gas pipelines apply to FERC for the issuance of a certificate of public convenience and necessity for the construction of an interstate pipeline.[40] There is no corresponding grant of authority to FERC under the Federal Power Act with respect to electric transmission lines. Although the demand and planning for electric transmission infrastructure tend to be regional, the permitting of electric transmission infrastructure tends to be local. Developers of electric transmission lines are required to obtain certificates of public convenience and necessity and other required permits from the applicable state and local authorities in each jurisdiction in which the line is proposed to be located. Given the regional nature of the transmission planning process, developers are often required to seek approval to build transmission in states that are hostile to development because customers in the state will receive little to no benefit from the project. The permitting process commonly involves many stakeholders and considerable controversy. Permitting of electric transmission lines therefore typically takes a period of at least several years.

The length of time required for permitting of an electric transmission line can pose a risk to the economic viability of the line as a result of intervening changes in laws and regulations. That is particularly true in the case of transmission lines that are proposed for purposes of delivering the output of renewable energy generation. One of the benefits of long-distance transmission lines for electric power customers generally, and for purchasers of renewable energy generation in particular, is that such lines reduce wholesale energy costs by providing customers access to regions with lower-cost generating resources. Another benefit is that such lines provide increased certainty of supply by facilitating short-term and long-term resource diversity. The economic viability of electric transmission

[39] Order No. 1000, Transmission Planning and Cost Allocation by Transmission Owning and Operating Public Utilities, FERC Stats. & Regs. ¶ 31,323, 76 Fed. Reg. 49,842 (2011), order on reh'g, Order No. 1000-A, 139 FERC ¶ 61,132, order on reh'g, Order No. 1000-B. 141 FERC ¶ 61,044 (2012), aff'd sub nom. South Carolina Public Service Authority v. FERC, 762 F.3d 41 (D.C. Cir. 2014).

[40] 15 U.S.C. § 717f.

lines is often dependent on assurance that a sufficient amount of electric generation will interconnect with the line and a sufficient number of transmission service customers will enter into long-term contracts to use the capacity of the electric transmission line to move the interconnecting generation to market. By the same token, the viability of renewable energy generating resources is generally dependent on the availability of electric transmission to deliver the output of the generating resources to the relevant markets. If the viability of the generating facilities is in question, so too will be the viability of the electric transmission line, and, conversely, if the viability of the electric transmission line is in question, so too will be the viability of the electric generating resources and, correspondingly, the prospects of the customers that seek the output of those resources.

The extent of the interdependency of planning for electric transmission infrastructure and electric generation infrastructure has been made clear by state RPS laws that impose geographic restrictions on the sources of generation that may be counted by utilities toward the satisfaction of their RPS requirements. One such RPS law is California's RPS statute, which requires that by 2017 not less than 75% of the renewable energy that California utilities use to satisfy their RPS requirements come from generating facilities located in, directly connected to, or delivering in real-time to a California balancing authority such as the California Independent System Operator (CAISO).[41] California is a huge market for renewable energy as for many other commodities, and if it were not for the limitation imposed by California's RPS statute, renewable energy project developers would be developing renewable energy generating facilities throughout the Western Interconnection (the interconnected high-voltage transmission system that includes the California transmission system) with the aim at least in part of selling the output into California. When the California legislature imposed the 75% RPS limitation in 2011, the result was an immediate cancellation of plans for the development of various large wind energy projects in the Pacific Northwest and Rocky Mountain states. The limitation also caused the cancellation of plans for long-distance high voltage transmission lines that had been proposed for the delivery of renewable energy into California from renewable energy projects to be located in other parts of the western U.S. and in western Canada. As a result in large part of the change in law, for example, Pacific Gas and Electric Co. (PG&E) in 2011 was forced to cancel its participation in a proposed 3,000 MW transmission line that was to deliver renewable energy from British Columbia to Northern California.[42] The project had been intended to increase reliability, reduce transmission congestion, and help utilities in California meet their RPS requirements. As the project's lead sponsor, PG&E had planned to assume about 60 percent, or approximately $1.9 billion, of the project's estimated $3.2 billion costs, excluding upgrades to existing transmission systems.[43]

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[41] Calif. Pub. Util. Code § 399.16(c)(1).

[42] Pacific Gas & Elec. Co., 137 F.E.R.C. ¶ 61,193 (2011)

[43] Id. at 2.

ALTERNATIVE STRUCTURES FOR OWNERSHIP AND FINANCING OF ELECTRIC TRANSMISSION FACILITIES

If policymakers want to foster the development of new transmission, they must incentivize a variety of business models for investing in, owning and operating grid infrastructure. Once completed, transmission facilities provide stable, long-term cash flows that make them attractive for investment. The costs and risks involved in the development of electric transmission facilities, however, create challenges for the financing of such infrastructure. In order to help address this problem, the Energy Policy Act of 2005[44] directed FERC to adopt incentive rates for the development of new transmission facilities.[45] FERC has responded by establishing rates of return that consider the risk involved in development of the facilities, and has provided for accelerated rates of depreciation and favorable recovery of costs, including costs of construction work in progress, for transmission facilities. However, rates of return for transmission projects are currently at all time lows, and developers are therefore experimenting with alternative sources of capital for financing electric transmission facilities.

In order to tap into additional sources of capital for financing of electric transmission facilities, some transmission developers have turned to nontraditional ownership structures that facilitate public investment in and financing of electric transmission infrastructure. One such nontraditional structure is real estate investment trusts (REITs). REITs are corporations but are generally exempt from corporate-level income tax, provided that certain technical requirements are met, including that at least 90% of the REIT's taxable income in each year is distributed to the REIT's shareholders. A REIT must have a minimum of 100 stockholders, and no more than 50% of the shares in the REIT may be held by five or fewer individuals. REITs are limited to owning "real property assets," as defined in the Internal Revenue Code, but in 2007 the U.S. Internal Revenue Service (IRS) issued private letter ruling determining that transmission and distribution assets qualify as "real property assets" for such purposes.[46] The pass-through tax structure of REITs and the liquidity provided by widely held ownership of the REIT's shares typically allows the REIT to finance transmission at a lower cost than ownership vehicles having fewer owners.

The recipient of the 2007 IRS private letter ruling determining that transmission and distribution assets qualify as real property assets was a REIT that is now named InfraREIT, Inc. (InfraREIT). InfraREIT was formed in 2010 by Hunt Power, L.P.; Marubeni Corporation; John Hancock Life Insurance Company (U.S.A.); OpTrust Infrastructure N.A. Inc.; and Teachers Insurance and Annuity Association of America. It owns electric

[44] Public Law 109–58, 119 Stat. 961 (2005).

[45] 16 U.S.C. § 824s.

[46] Annual Report on Form 10-K of InfraREIT, Inc. for the Year Ended December 31, 2014, available at http://www.sec.gov/Archives/edgar/data/1506401/000119312515097157/d889218d10k.htm

transmission facilities in Texas and leases those facilities to Sharyland Utilities, L.P. (Sharyland Utilities). Members of the Hunt family own Sharyland Utilities and Hunt Consolidated, Inc. or affiliates are the largest shareholder in and the manager of InfraREIT. Shares of InfraREIT were offered to the public in an initial public offering in early 2015, and are now traded on the New York Stock Exchange.[47]

Another nontraditional ownership and financing structure is the yieldco. Yieldcos are publicly traded corporations that are formed to hold operating electric generating or transmission assets, meaning assets that have been de-risked and that generate a reliable cash flow. Yieldcos rely upon having an affiliated entity that has a constant pipeline of projects under development that can be dropped down to the yieldco once the projects reach commercial operation. Because yieldcos are publicly traded and own only assets with predictable cash flows, yieldcos can raise equity at a higher multiple to earnings than can less liquid and less reliable investment vehicles. Most of the existing yieldcos own renewable energy generating facilities exclusively, and have not yet expanded into ownership of electric transmission facilities. Although there has been considerable volatility in the trading prices of shares of yieldcos over the course of the past year, the yieldco form is well suited to the ownership of long-term contracted infrastructure assets such as electric transmission.

Yet another promising approach to the ownership and financing of electric transmission infrastructure is public-private partnerships. Public-private partnerships take a wide variety of forms but share the characteristic that they involve a joint venture between one or more public sector and private sector parties. Public-private partnerships have been used successfully in a variety of electric transmission projects, such as Path 15 in the Central Valley of California and the Trans Bay Cable (Pittsburg Power Company) in the San Francisco Bay Area. Public-private partnerships rely upon federal and state laws that provide express authorization for public participation in the venture. In order to provide incentives for further use of public-private partnerships for the development of electric transmission infrastructure, there is a need for new laws that provide additional and expanded such authorization.

AUTHORS

Eric E. Freedman
Partner
+1.206.370.7627
eric.freedman@klgates.com

William M. Keyser
Partner
+1. 202.661.3863
william.keyser@klgates.com

[47] Id.

IN A BUDGET CONSTRAINED ENVIRONMENT, FEDERAL POLICYMAKERS INCREASINGLY ARE PROPOSING ALTERNATIVE INFRASTRUCTURE FINANCING POLICIES

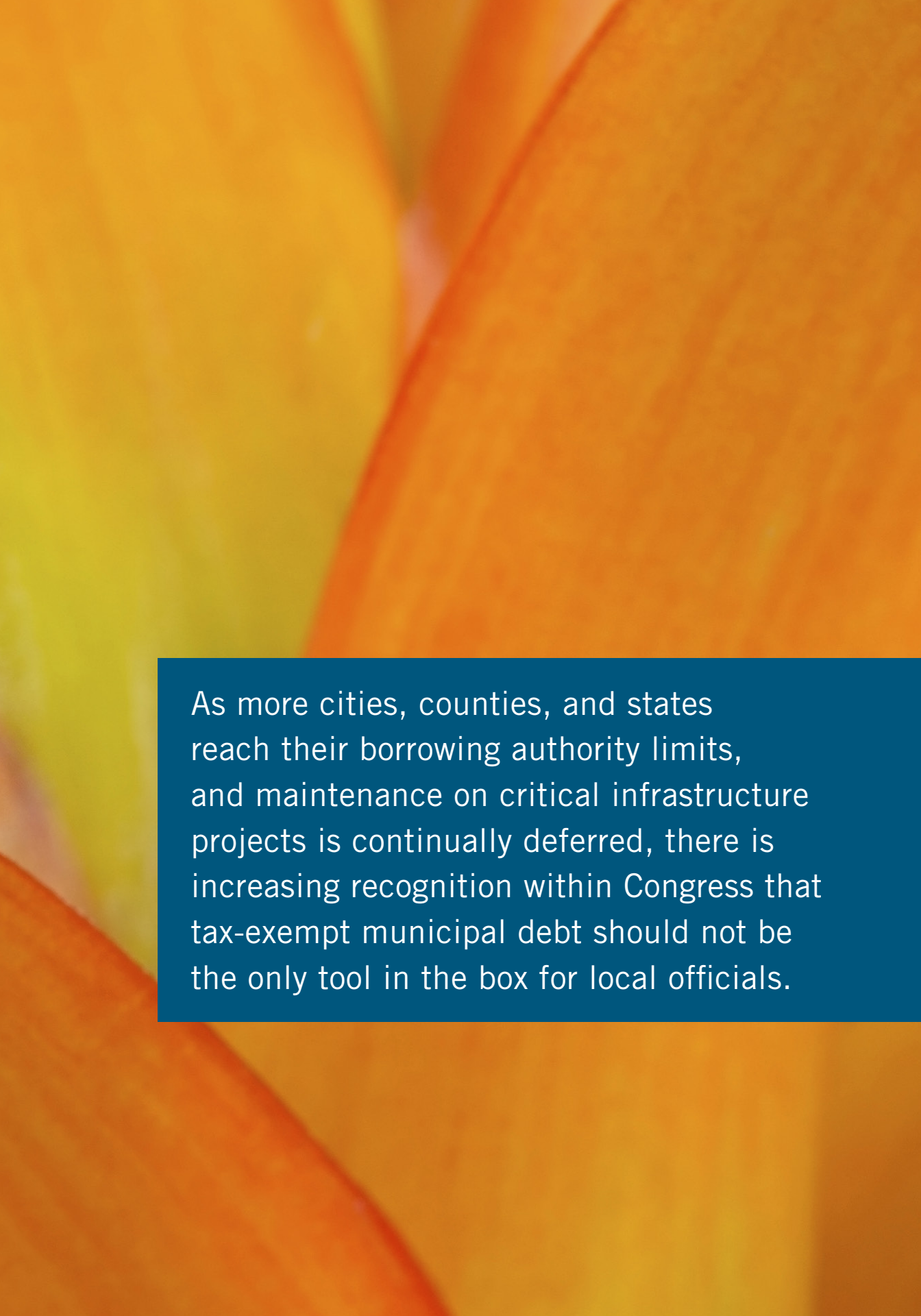
By Judson M. Greif

On the heels of calendar year 2014, where Congress and the Administration made strides toward proposals of innovative infrastructure financing models, 2015 held some action. In 2014, the House Transportation and Infrastructure Committee released a special report on public-private partnerships (PPPs), detailing a series of studies and hearings on how PPPs are developed and the value they offer.

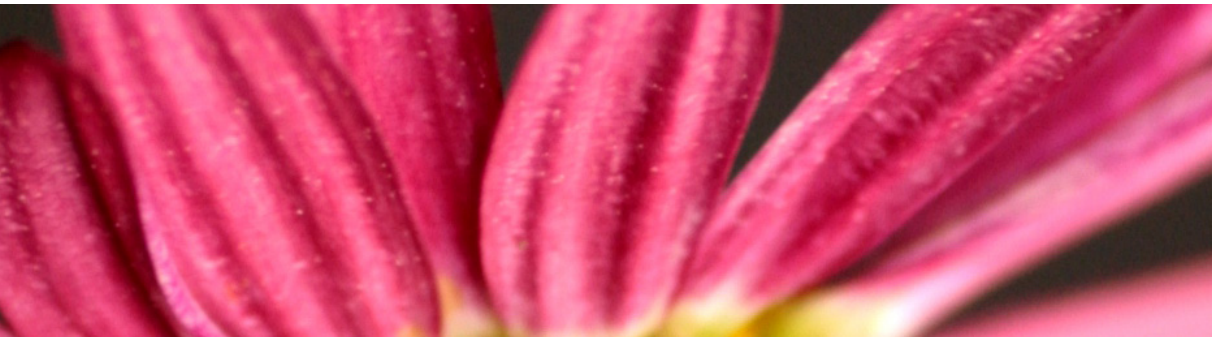
Additionally, President Barack Obama signed an executive order that created the "Build America Transportation Investment Initiative," which created a collaborative effort between the U.S. Departments of Transportation (US DOT) and Treasury (Treasury) designed to develop increased private investment in infrastructure. While each effort was commendable, each effort fell far short of changing the infrastructure investment landscape.

While progress was incremental, most agree that Congress and the Administration took further action in 2015 that many are hoping will yield better results. The Administration continued to press for more private financing and project innovation. The Treasury proposed the Qualified Public Infrastructure Bond (QPIB) that would eliminate caps for private activity bonds for certain infrastructure investments; US DOT formalized the Build America Transportation Innovation Center, designed to serve as the federal government's single point of contact to access credit programs and private capital in PPPs; and the Environmental Protection Agency and Army Corps of Engineers (Corps) continue to develop their Water Infrastructure Finance and Innovation Act (WIFIA), a federally subsidized loan program for water infrastructure projects.

The 114th Congress has also seen an array of bipartisan legislative proposals designed to spur greater private investment in public infrastructure. Rep. John Delaney (D-MD) introduced a renewed version of his infrastructure financing proposal (HR 625), which would establish funding for an infrastructure investment authority to provide assistance to project managers. Sen. Mark



As more cities, counties, and states reach their borrowing authority limits, and maintenance on critical infrastructure projects is continually deferred, there is increasing recognition within Congress that tax-exempt municipal debt should not be the only tool in the box for local officials.



Warner (D-VA) reintroduced his Building and Renewing Infrastructure for Development and Growth in Employment Act (S. 1589), which would establish an infrastructure financing authority. Another proposal which saw plenty of activity was the "Move America Act of 2015" (S. 1186) introduced by Sen. Ron Wyden (D-OR). This proposal was vigorously lobbied by the senator and his Republican colleague, Sen. John Hoeven (R-ND), to be included in the year-end omnibus agreement.

Also notable was the effort by House Transportation and Infrastructure Chairman Bill Shuster (R-PA) to encourage PPPs through the bill reauthorizing the Federal Aviation Administration (FAA). While privatization of air operations in the United States is not a new concept (the FAA already has the Airport Privatization Program), what was new was the chairman's proposal to enter into a public-private agreement to manage the air traffic control system. While this proposal was not a brick-and-mortar infrastructure project per se, it was an indicator of congressional interest in leveraging private market capital and expertise to manage large governmental infrastructure assets and their operations.

While none of these standalone bills were passed into law, pieces of many of them were adopted into the surface transportation reauthorization bill (the "Fixing America's Surface Transportation Act" of 2015 (FAST Act), H.R. 22). A few of the more notable accomplishments of that bill include:

- Title IX of the bill authorizes the National Surface Transportation and Innovative Finance Bureau (Bureau) within US DOT. The Bureau is designed to serve as a one-stop-shop for states and local governments to receive federal financing and funding assistance, as well as technical assistance, in order to move forward with complex surface transportation projects. The Title also establishes a Council on Credit and Finance (Council) within US DOT that will review applications for various credit assistance programs as appropriate, and make recommendations to the secretary about which applications should receive federal financing and funding assistance.

- The FAST Act includes provisions to streamline the environmental review and permitting process to accelerate project approvals. In addition, it establishes a new pilot program to allow up to five states to substitute their own environmental laws and regulations for the National Environmental Policy Act (NEPA) if the states' laws are at least as stringent as NEPA.
- The FAST Act establishes pilot program which will fund the establishment of regional infrastructure accelerators. These regional accelerators are designed to facilitate public and private investment in infrastructure projects through the provision of technical expertise and project development services in a multi-jurisdictional region. Accelerators will act as "field agents" for the Bureau by being on-the-ground resources for local project sponsors.

Other legislative accomplishments for innovative finance and PPP infrastructure development occurred throughout the year as well. In the FY2016 Omnibus Appropriations bill, Congress directed the Corps, traditionally not receptive to PPP proposals, to develop a policy on how proposals for PPPs will be considered by the Corps, and how such partnerships will be incorporated into budgetary policy.

If trends hold true, 2016 will produce even further action on innovative financing policies, as Congress and the Administration continue to pursue measures to bring more capital into U.S. infrastructure projects. In addition to implementing many of the programs that were passed in to law in 2015, we anticipate a number of additional efforts to incentivize private market investments.

Beginning with the president's budget request, we anticipate seeing the reintroduction of past proposals, as well as some new approaches. Treasury is almost certain to include their QPIB proposal in their 2017 request, along with other previously offered proposals for private activity bonds. And while details are scarce, we believe the Treasury will also propose a new concept based off successful infrastructure finance and innovation programs like the Transportation Infrastructure Finance and Innovation Act and WIFIA.

The proposal will introduce the concept of a new program housed at Treasury that will provide a low-interest loan program (at Treasury rates) for qualified projects. However, unlike other subsidized programs, this proposal will include a type of risk insurance premium built into the loan and paid for over the life of the loan. This innovative approach might be compared to private mortgage insurance products for infrastructure projects and, more importantly, would insulate the loan program from annual appropriations battles over funding to subsidize the loans. Such a program would reasonably offer access to loans at Treasury rates, plus a small premium—figure 20–30

basis points—which would make the loan very attractive and likely unlock significant capital investments. This may become the foundation of a national infrastructure bank, just by another name.

In Congress, it can be reasonably anticipated that proposals presented in the first session of the 114th Congress will continue to be lobbied and promoted. However, given that Congress passed a five-year surface transportation reauthorization bill, it is hard to see an "infrastructure bill" emerging as a priority and passing Congress. Other legislative priorities for 2016 related to infrastructure will include continued debate over the reauthorization of FAA programs and certain innovative financing mechanisms in that bill; reauthorization of the Water Resources and Development Act (WRDA) will take place in 2016—and while most expect a "clean" or narrowly tailored bill, there may be opportunities to include innovative programs (WIFIA was authorized in the WRRDA 2013 bill, for example); congressional budget authorizers also continue to express interest, or exasperation, in how the Congressional Budget Office scores PPP agreements with the federal government. Federal budgeting requires that federal financial commitments should be recognized up front in the budget, at the time a commitment is made—meaning the entire cost of a 30-year project agreement would have to be borne in the first year. A bipartisan coalition of members of Congress is growing tired of their inability to be creative in financing, largely inhibited by budgetary scoring rules which they hope to change.

We also anticipate that open debate over tax reform in Congress will include hearings on how the tax code influences how our nation invests in infrastructure. The issue at hand will be the effect of tax exempt municipal debt on infrastructure investment. While there is absolutely no question that tax exempt muni-debt will continue to play the primary role in financing major infrastructure projects, there are increasing questions as to how it may be inhibiting innovation. As more cities, counties, and states reach their borrowing authority limits, and maintenance on critical infrastructure projects is continually deferred, there is increasing recognition within Congress that tax-exempt municipal debt should not be the only tool in the box for local officials. Tax authorizers are increasingly interested in discovering how the private market can bring additional tools, including increased efficiency and accountability, to infrastructure investment and development.

In conclusion, the federal government has been trending towards proposing, supporting, and enacting policies that encourage more private and innovative financing of our nation's infrastructure. We anticipate this trend to continue in 2016 and beyond.

AUTHORS

Judson M. Greif
Government Affairs Analyst
+1.202.778.9283
judson.greif@klgates.com

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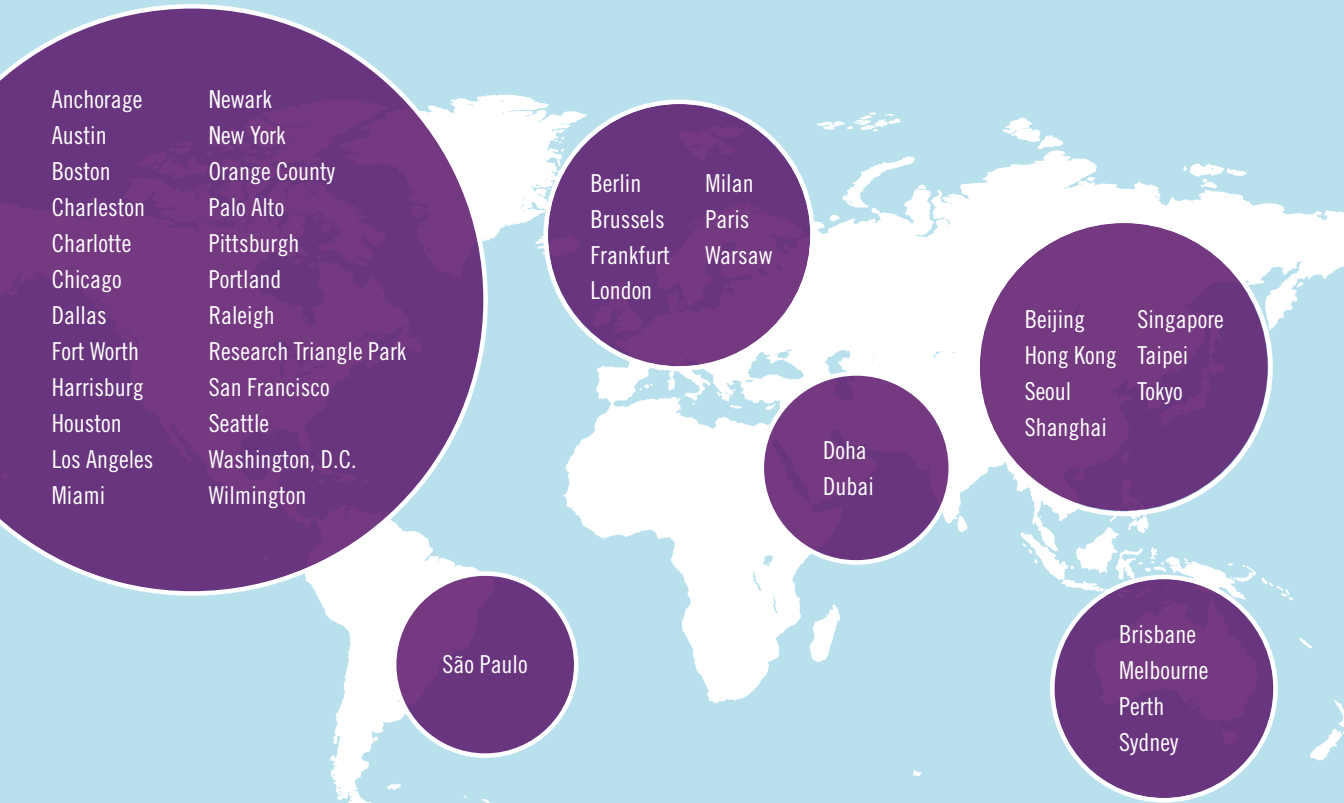

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