S&P Global
Ratings

U.S. Green Finance Sees A Clearer (And Brighter) Year Ahead

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U.S. Green Finance Sees A Clearer (And Brighter) Year Ahead

The grass should be even greener in 2018 for green finance globally. The green bond market, especially, remains red hot worldwide. At long last, the proportion issued in the U.S. expanded significantly, though it remains eclipsed by China, France, and Germany. Even though the Trump administration has not shown an inclination to pursue comprehensive carbon reduction policies and even has been slow to address infrastructure, a stated priority, a mixed group of municipalities, states, and large corporations are aggressively pushing forward with decarbonization efforts. The needs are enormous. Water, wastewater, and irrigation systems will require over $630 billion of investment through to 2033 to bring them up to modern standards, according to the U.S. Environmental Protection Agency. With such substantial funding requirements, we expect government agencies to call on a variety of financial tools to fund them.

We expect government agencies to call on a variety of financial tools to fund enormous needs to modernize water, wastewater, and irrigation systems.

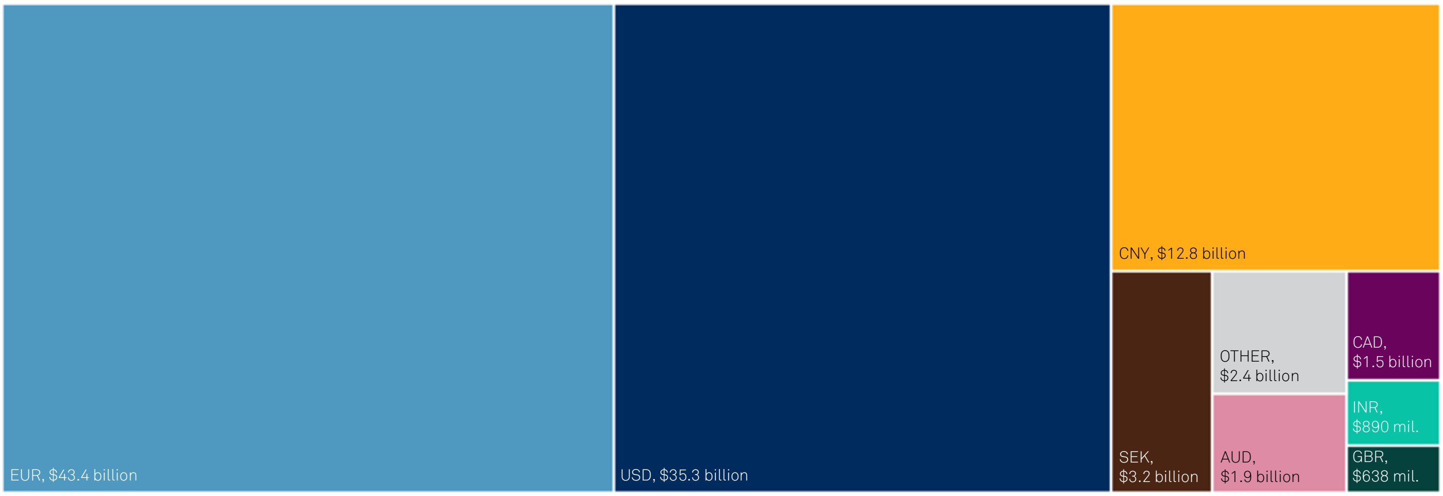
Key Takeaways

- The labeled U.S. green bond market grew substantially during 2017, but still trails several other countries where renewable growth and transportation improvements are propelling issuance.
- Uncertainty about U.S. regulatory policy may have contributed to this limited growth, but the revised U.S. tax code signed at year-end 2017 provided some clarity; however, it could also undermine the value of some critical tax credits.
- Longer term, ambitious infrastructure growth could be a source of green bond issuance.
- To date, we have performed Green Evaluations for seven issuances in the U.S., though not all are labeled green bonds.

In the U.S., green bonds are more often than not issued on the local level. That's because most green projects are financing renewable energy power plant and energy-efficient transportation. Worldwide, labeled green bond issuance jumped to nearly $160 billion in 2017, with the figure also growing in the U.S. despite political headwinds (see chart 1). Knowing that municipalities and states sometimes cater to a different part of the investing community than traditional corporates, this prompts a question: Do these issuers find some kind of intrinsic benefit to issuing green bonds, or do investors prefer them to a degree that might convey a benefit? Climate Bonds Initiative price data to date do not yet suggest any kind of meaningful and consistent premium for green issuances over otherwise comparable nongreen issuances. However, going forward, with a greater number of issuances, patterns may reveal themselves.

Chart 1

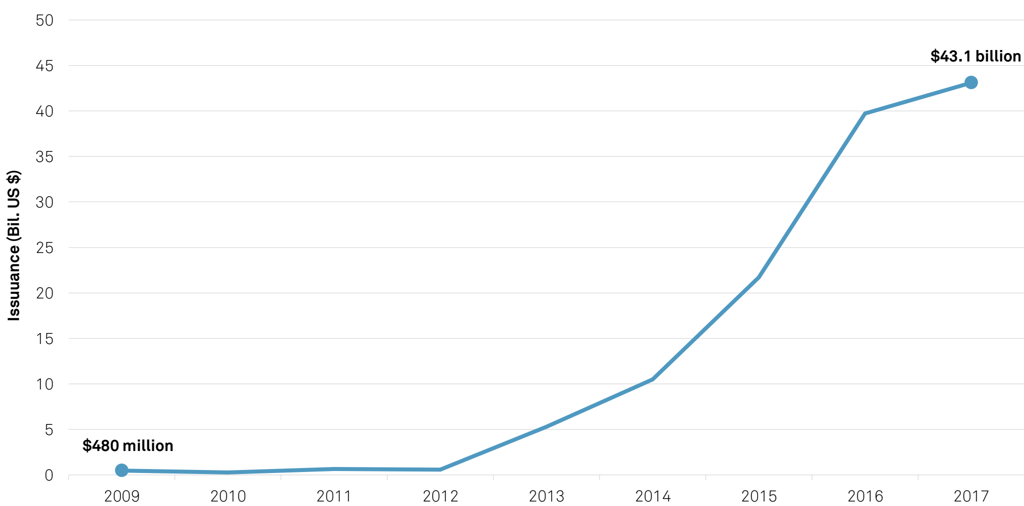
2017 Green Bond Issuance By Denomination



Data as of November 2017. Source: Climate Bonds Initiative.

Chart 2

U.S. Dollar Green Bond Issuance



Source: Climate Bonds Initiative.

Tax Reform: No Real Hit To Green Energy?

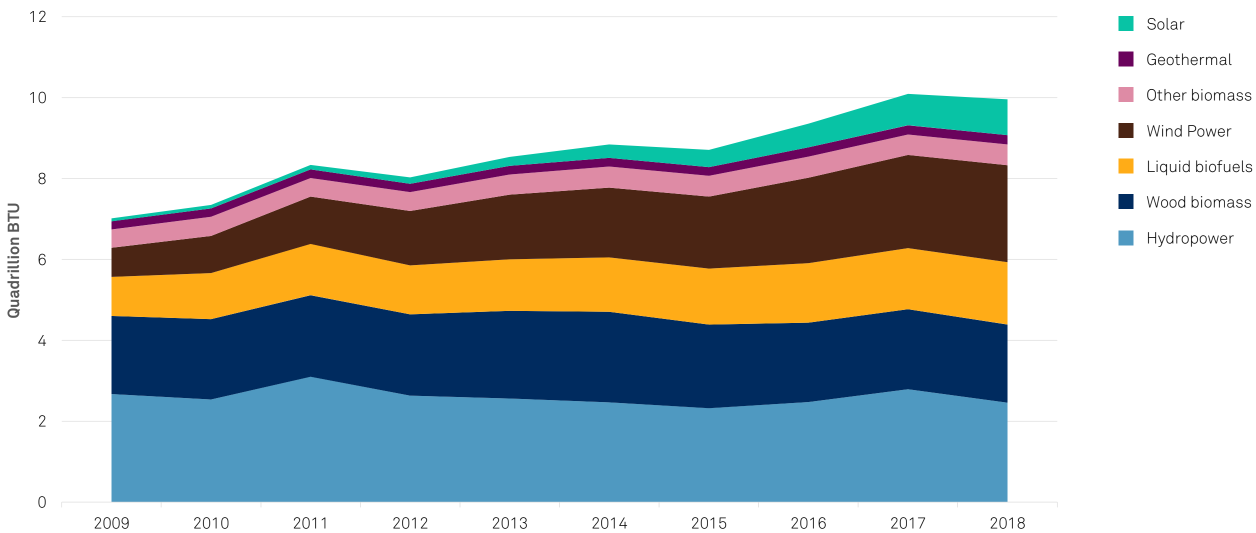
The green finance market breathed a sigh of relief once it realized that renewable tax credits were spared the budget ax. As the debate over tax reform came to a head in late 2017, the fate of the production tax credit (supporting wind) and the investment tax credit (supporting solar) hung in the balance, with early versions of the bill excluding these critical credits altogether and later versions curbing it to a large degree. However, the final version of the bill, signed by President Donald Trump on Dec. 22, 2017, continued the credits – a surprising outcome, given that the bill (now law) is thought to add substantially to the federal deficit. In a bill passed without a single Democratic vote, the continuation of the tax credit speaks to the enduring value of the credits as a tool for spurring renewable development that transcends partisan politics. Still, despite the critical credits being maintained for the moment, the revised tax code may have an indirect impact on the value of these credits. A lower corporate tax rate (with the marginal percentage down to 21% from 35%) could cause tax equity investment to be less valuable. With a limited number of tax equity investors as it is, the change to the tax code may affect how these projects are funded.

The continuation of the tax credit speaks to its enduring value as a tool for spurring renewable development that transcends partisan politics.

When the market suspected (ultimately incorrectly) that the production tax credit would be excluded from future budgets, installed wind capacity surged in 2015, especially for corporate power purchase agreements (PPAs). With the phase-out of the tax credit expected avoided (at least for now), we believe renewable financing, especially PPAs will continue to grow quickly, spurred by diminished costs, but we don't expect an immediate surge.

Chart 3

U.S. Renewable Energy Sources



BTU--British thermal units. Source: Energy Information Administration.

It remains to be seen whether yieldcos, which have been popular vehicles for renewable energy financing but on the sidelines of the capital markets during much of the past two years, will re-enter the green bond market to fund new developments and acquisitions (see "Credit FAQ: How Is YieldCo Credit Quality Faring?" Jan. 4, 2018). (Yieldcos are companies formed to own operating assets that produce a predictable cash flow, primarily through long-term contracts.) As we previously mentioned a number of major yieldcos suffered governance failures, casting a pall on the whole industry, even though the underlying fundamentals (contracted assets with high credit quality offtakers) have remained more or less unchanged (see "Green America: The Prospects For The Development Of The Green Bond Market In The U.S.," published on Sept. 5, 2017).

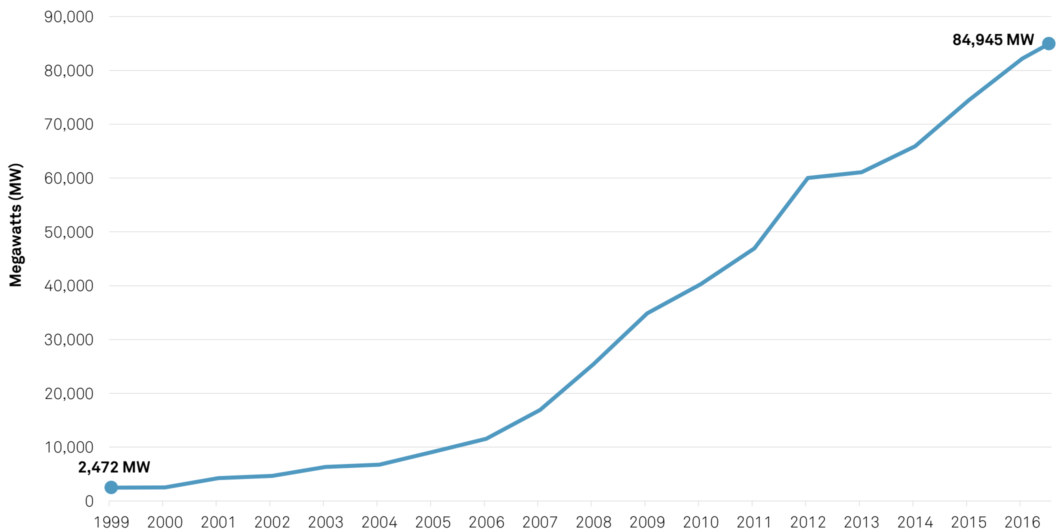
More potential for pricing advantage in the speculative-grade space might be found where spreads are much higher.

Certainly, Brookfield Renewable Energy Partners's recent acquisition of former SunEdison-controlled yieldcos, and their stated desire to delever those enterprises, is suggestive of higher credit quality in the industry, and, perhaps, improved access to capital markets. TerraForm Power and NextEra Energy Partners, for their part, have accessed the markets on relatively favorable terms since our last publication, but neither has, for now, pursued a labeled green issuance.

Indeed, TerraForm Power's recent $1.2 billion issuance partially served to take out a high interest rate labeled green bond issuance. And, for the moment, few of these issuers are investment grade, even though the overwhelming majority of labeled green bond issuances have been. Nevertheless, we note that more potential for pricing advantage in the speculative-grade space might be found where spreads are much higher.

Chart 4

U.S. Installed Wind Generation Capacity



Source: American Wind Energy Association.

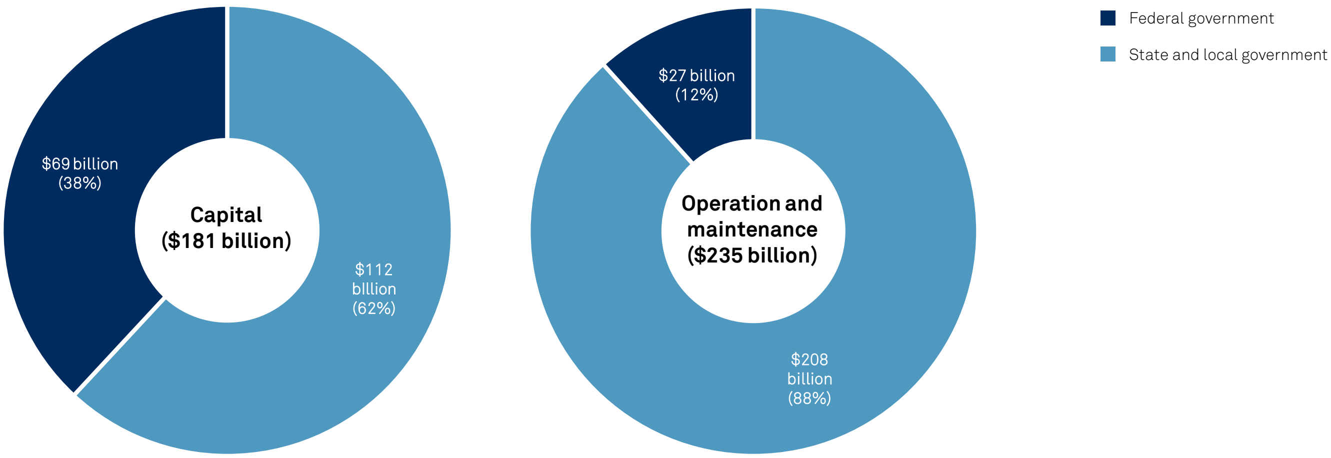
A Greening Of Infrastructure?

Now that the U.S. political agenda has moved on from tax reform, we expect that discussion will return to rebuilding the country's infrastructure. Indeed, while polarization has typified American politics in recent years, one area of agreement between Democrats and Republicans is the need for an overhaul of aging infrastructure, which has been underfunded for decades.

The White House has recently proposed over a trillion dollars in infrastructure investments, in addition to the $200 billion in the 2018 budget. However, the federal government continues to acknowledge that much of the funding for these projects (about 75% according to the Council on Foreign Relations) will have to continue to come from the state and municipal level, as it has for much of the past century.

Chart 5

The Federal Government's And State And Local Governments' Shares Of Spending On Transportation And Water Infrastructure



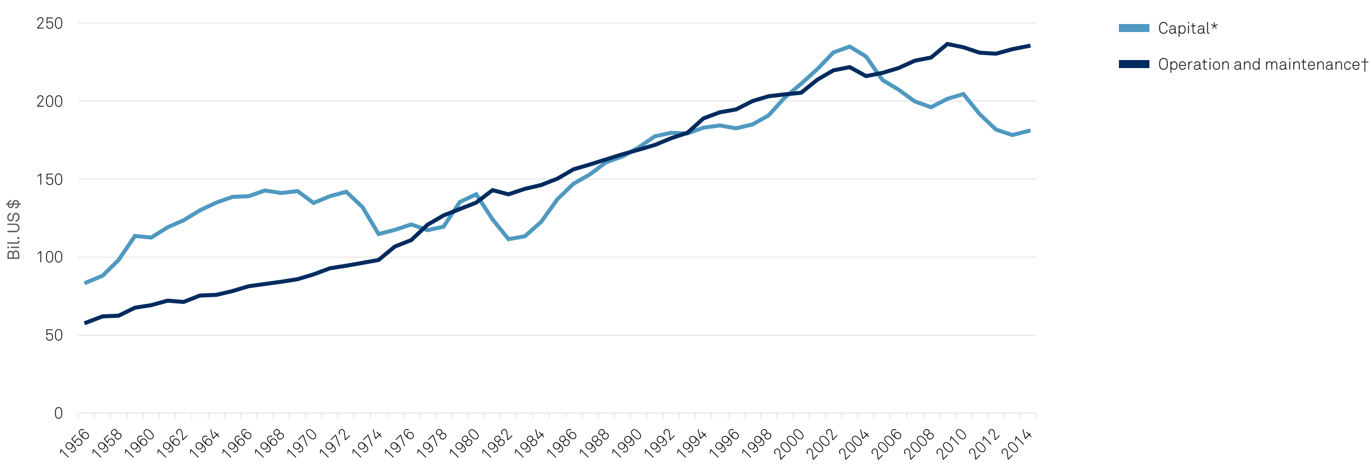
Source: Congressional Budget Office.

While the Trump Administration has not revealed its detailed infrastructure plan, a broad outline included with the 2018 budget sent to Congress proposes to spend $200 billion in direct federal funding over 10 years. Of this, about half, would be used to spur state and local governments, along with private equity investors, to boost their funding contributions, with the goal of leveraging another $800 billion under an 80% state or local and 20% federal arrangement. Under current law, the standard federal share of project costs funded with highway funds is essentially the opposite: up to 90% for interstate system and 80% for any other project. This means that local infrastructure providers looking to compete for federal funding might have to generate a significantly higher nonfederal share than they do today.

We expect the issues of how and who should fund infrastructure will remain unresolved in 2018.

Chart 6

Spending On Transportation And Water Infrastructure



Note--2014 U.S. Dollars. *Dollar amounts are adjusted to remove the effects of inflation using price indexes for government spending that measure the prices of materials and other inputs used to build transportation and water infrastructure. †Dollar amounts are adjusted to remove the effects of inflation using price indexes for government spending that measure the prices of goods and services consumed by governments, including materials and other inputs used to operate and maintain transportation and water infrastructure. Source: Congressional Budget Office.

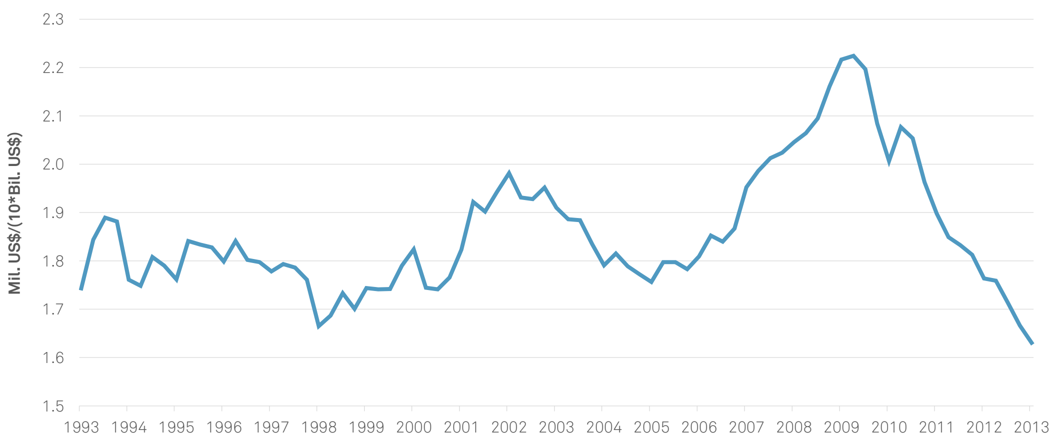
While the U.S. government has left undefined the types of projects that its infrastructure initiative will cover, what is even less clear is how it will be funded.

Optimists hope for a long-term fix to the diminishing federal Highway Trust Fund (HTF) balance, which is forecast to be depleted by 2021, but we believe this is unlikely this year. HTF moneys are disbursed largely to states and regional transit providers for capital projects and relies on a federal fuel tax of 18.4 cents per gallon of gasoline and 24.4 cents per gallon of diesel fuel, 7 unchanged since 1993. On the heels of the December 2017 tax law and forecast increases to the federal deficit, it will be difficult to whet Congressional appetite for a significant rise in direct federal funding for infrastructure, absent any required revenue enhancements or expenditure reductions. While preservation of private activity bonds in the 2017 tax law was a positive sign that policymakers understand the role they play, we expect the issues of how and who should fund infrastructure will remain unresolved in 2018.

Issuance by large, highly rated corporates is one area of the green bond market where the U.S. has actually surpassed EMEA.

Chart 7

U.S. Public Construction Spending As A Proportion Of GDP



Sources: U.S. Bureau of Economic Analysis, U.S. Bureau of the Census, retrieved from Federal Reserve Bank of St. Louis.

Whether undertaken by a public sponsor, a private entity, or under a public-private partnership (P3) structure, we expect that large infrastructure projects will be funded by debt. Given that most of these kinds of financings will likely be of investment-grade credit quality, and, importantly, are very long term in nature, we believe investors will be concerned about climate risk. And we expect this concern will only grow if U.S. federal government efforts to mitigate and adapt move slowly. This is perhaps even truer for large infrastructure projects than for renewable projects, whose environmental attributes are typically baked into contract pricing.

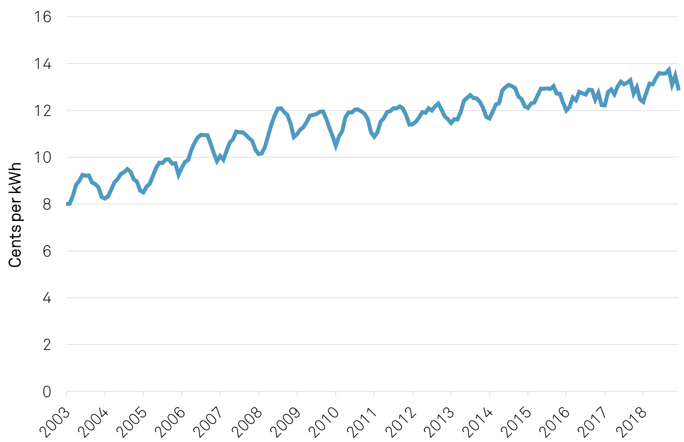
Corporate Sustainability Efforts

Large, highly rated U.S. corporates are likely to increase issuance of green bonds as they pursue both preferential access to capital markets and reduce their environmental footprints. Indeed, this is one area of the green bond market where the U.S. has actually surpassed Europe, the Middle East, and Africa (EMEA). Additionally, as parts of the U.S. transition into more deregulated market constructs, power pricing volatility becomes a reality that large corporates must face. A PPA, especially one with a fixed price, helps mitigate that risk to a great degree. Increasingly, though, we're also finding that it's an approach that resonates with investors who are concerned with addressing long-term climate risks at the corporate level, according to Norton Rose Fulbright.

Increasingly, the vehicle through which major companies are attempting to decarbonize is through a so-called corporate PPA. Under such a construct, a developer (or other entity) builds and owns a generating asset, then agrees to sell the power for a fixed period to a corporate offtaker; the entity may still rely on the utility for backup generating capacity and could still be subject to transmission and distribution charges. While the credit quality of a power project itself can vary depending on the credit quality of the offtaker--corporates are often lower rated than utilities, which have historically been the offtakers--the corporate can benefit from obtaining clean power at a low cost over a long period of time. Additionally, those that have significant taxable income may be able to capitalize on current tax credits. However, as mentioned earlier, the ability to do so may be waning. Some states have also allowed for the commoditization of renewable energy certificates (RECs). These can be monetized as well, subject to local laws, though, in some parts of the country, the prices of RECs have fallen as the market-driven pace of renewable installation has surpassed the applicable regulation.

Chart 8

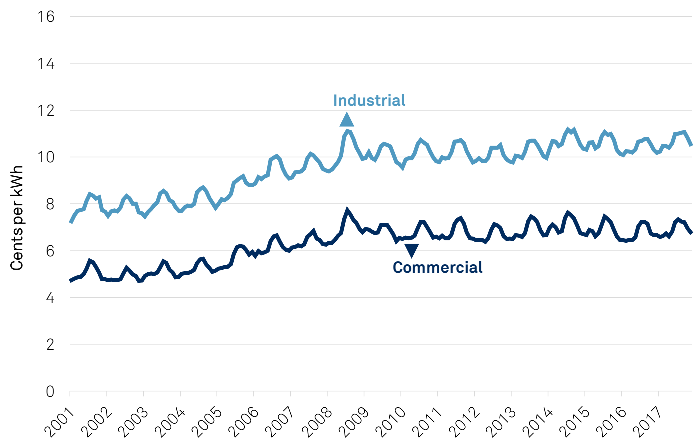
Residential Electricity Pricing



Source: Energy Information Administration.

Chart 9

Commercial And Industrial Electricity Pricing



Source: Energy Information Administration.

To some degree, efforts to overcome the incumbent vertically integrated regulated utility have slowed growth. For instance, a number of large Las Vegas casinos have sought to source their power outside of NV Energy Inc., the utility with territorial rights over its property. However, as the cost of installing renewable capacity continues to decline but the cost of servicing the grid does not, large corporate players may continue to defect from the grid even if it means paying breakage fees to compensate the utility. Of course, they are unlikely to do so without having a reliable replacement source of power, which makes the use of corporate PPAs much more likely. That would be especially the case if the growing contingent of sustainability-minded corporates sees them as a viable means for attaining their targets--even amid dwindling gas prices, which have kept a lid on conventional generation pricing, according to Norton Rose Fulbright. Still, with more than 5 GW of U.S. renewable capacity dedicated to corporate PPAs in 2015 and 2016 alone (and another 2.8 GW spread across 39 companies in 2017, according to Wind Power Monthly), energy-intensive corporates and data companies (about 23% are IT firms according to PWC) appear eager to find ways to capably manage their cost structures. This should continue as installed renewable costs continue to tumble and renewables can increasingly be paired with battery storage technologies.

Rating Corporate PPAs

The rise in the corporate PPA model has prompted questions from investors concerning the credit quality of these types of structures. Here, we discuss some of the key risk attributes of project financings supported by corporate PPAs.

- **Counterparty credit quality:** As with any project financing, the credit rating on the material revenue counterparty serves as a cap on the overall rating of the project. Under a corporate PPA structure, the corporate counterparty could (but not always) have a weaker rating than the utilities and municipalities that have traditionally supported such projects and thereby limit the ultimate rating on the project.
- **Long-term credit stability:** Corporate credit ratings could be less stable over the life of the bond than the more traditional offtakers, such as electric utilities, which benefit from some level of government support. In cases where the offtaker constrains the project rating, the credit quality of a corporate PPA project could see an increased ratings transition over the long-term life of the asset and bond tenor.
- **Asset diversity:** We would consider a project supported by multiple, uncorrelated assets a credit strength that could quality for a positive 'performance redundancy' score under our operations methodology. For example, a project supported by a wind energy asset in Iowa and solar farm in California where the cash flow of each asset is independent of one another is considered less risky than a single asset project financing and could therefore support lower debt service coverage for the comparable rating level.
- **Asset value over time:** Given the long-term nature of infrastructure assets, the contract price under the corporate PPA could exceed market rates over time. This is especially true for renewable assets, which have seen substantial cost declines in recent years in a trend that we expect to continue. These factors could create an incentive for the corporate offtaker to terminate the contract to go to the market to pursue lower-cost renewable energy. This has been less of a concern for utility PPAs, which have traditionally been contracted at above-market rates largely to meet state regulatory requirements. Our analysis considers the termination provisions under contract to assess the extent to which the contract could be cancelled as well as any rights and remedies of the project under these cases.
- **Asset life versus contract term:** Our analysis also considers the extent to which the tenor of the corporate PPA aligns with the debt maturity. While market risk is not typically a consideration, in cases where a corporate PPA terminates prior to debt maturity, we consider whether recontracting is possible, especially if the corporate PPA is priced significantly above current market rates. Under such a case, this merchant period could constrain the overall rating of the project.

Recent Evaluations

To date, we have evaluated seven U.S. issuances under our Green Evaluation tool. In total, we have approximately seven public green evaluations, with funds evaluated totaling over $7 billion. While each issuance has earned a score of E1, the highest under our methodology, they didn't arrive there all the same way.

U.S. energy efficiency initiatives are likely to be a focal point of green bond issuances.

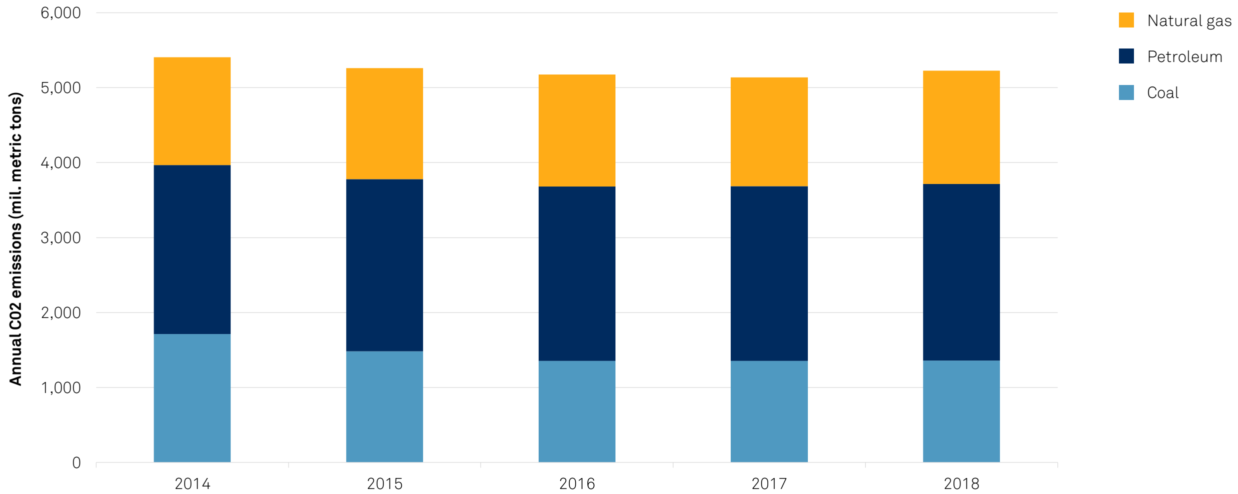
- **Cross Sound Cable (E1/87).** Our first Green Evaluation, released in May 2017, was unique because it assessed a bidirectional transmission cable under our renewable energy framework. Despite not being a labeled a green bond, it fared well under governance and transparency due to its project finance structure and commitment of its sponsor to reporting on environmental impact. In addition, the cable effectively supplanted more carbon-intensive generation in New York with cleaner New England generation, derived largely from hydroelectric power and wind.

- **Brookfield White Pine Hydro (E1/90).** Also not a labeled green bond, White Pine's high score also stemmed from a substantial environmental benefit within its geographic footprint. In addition to funding the refinancing of a large hydro portfolio, we noted that excess funds from the initial $475 million could be used for other renewable ventures within this pure play issuer (Brookfield Renewable Partners).
- **DC Water (E1/90).** We viewed governance quite favorably based on its requirements for regular reporting of fund disbursements and environmental impacts, over the very long life of the financing. The transparency score also benefited from stringent criteria used to select projects that were eligible for funding.
- **Capital Region Water (E1/87).** This financing received an excellent mitigation score due to wastewater treatment being at the top of our water hierarchy, combined with moderate water stress in Pennsylvania. The single-purpose mission of Capital Region Water and the segregation of funds for capital investment supported the governance score, and the entity reports on some key environmental measures in its financial documents and other regular communications to the public.
- **Greater Orlando Aviation Authority (E1/78).** The $997 million of funding issued by the authority will partially finance construction of a new terminal complex that has been designed and will be built to LEED standards. The transaction obtained a strong mitigation score, resulting from significant anticipated avoided carbon emissions in a state with an electric grid possessing a medium-high carbon intensity. While the financing possesses a strong governance framework, the absence of a commitment to publicly report the environmental impacts of the new complex contributed to a satisfactory transparency score.
- **Brookfield Power New York Finance LP (E1/91).** Much like the White Pine Hydro transaction (also owned by Brookfield), this large portfolio financing, which mixed both large and small hydro assets across a few states, fared well because of its location in geographies with moderate carbon emission intensity. As Brookfield is a pure-play renewable developer, we expect that, as with other financings, it will report on the environmental impacts of this investment.
- **Hannon Armstrong Sustainable Infrastructure Capital, Inc. (E1/80).** This financing was used by Hannon Armstrong to refinance land leases that support solar generation projects. While not financing the development of the solar assets, which have high credit quality offtakers, financing the land leases is critical to supporting these 57 assets, which have a broad geographic footprint and, consequently, an effective mitigation score. The somewhat lower governance score, while still well above average, reflects the lack of independent third-party verification of use of proceeds.

As 2018 opens, we anticipate another impressive year for U.S. green bond issuance, driven by a mix of renewable-backed issuances, as well as those used to help repair and replace infrastructure projects with more efficient and modern equivalents. Additionally, U.S. energy efficiency initiatives, which reflect shifting consumer preferences and are leading to decarbonization of the U.S. power grid, are likely to be a focal point of green bond issuances, especially as corporate issuers look to reduce their footprints. The revised U.S. tax code with its lower corporate tax rate could influence issuers' decision about whether to use tax-exempt municipal issuances or corporate debt, and, further, in the absence of a formal climate change policy at the federal level, determine what advances will be made at the state level that could drive green issuance. Without the Clean Power Plan and amid diminishing installed costs for renewable capacity, we continue to expect that a number of states will pursue either new or heightened renewable portfolio standards (see "Green America: Renewable Standards, Tax Credits, And What's Next," published Oct. 10, 2017). These standards drove investment and green bond issuance in the past, and will continue to do so in the years ahead. And while estimates on green bond issuance vary wildly and can hinge on a bevy of market and political conditions, the decarbonization of the world economy continues unabated.

Chart 10

U.S. Energy-Related Carbon Emissions



Source: Short-Term Energy Outlook, Energy Information Administration, December 2017.

Related Research

S&P Global Ratings

- Green Bond Issuance Is Set To Shoot Up Further, Jan. 29, 2018
- Frequently Asked Questions: S&P Global Ratings' Analytical Approach In Evaluating Green Transactions, Dec. 6, 2017
- Credit FAQ: U.S. Tax Reform: Preliminary Thoughts On Credit Implications For U.S. Nonfinancial Corporate And Infrastructure Issuers, Nov. 9, 2017
- Green America: Renewable Standards, Tax Credits, And What's Next, Oct. 10, 2017
- Green America: The Prospects For The Development Of The Green Bond Market In The U.S., Sept. 5, 2017
- Trumped Up: How The Clean Power Plan's Exit Could Affect The Power Sector, June 28, 2017
- Withdrawal Symptoms: What Trump's Paris Agreement Decision Could Mean For American Generators, June 2, 2017
- Beyond Green Bonds: Sustainable Finance Comes Of Age, April 26, 2017
- Green Evaluation Analytical Approach, April 26, 2017
- Credit FAQ: Standard & Poor's Takes A Look At The Emerging YieldCo Financing Vehicle, Sept. 8, 2014

External Sources

- The State of U.S. Infrastructure, Council on Foreign Relations, Jan. 12, 2018
- Corporate renewable PPAs – a framework for the future? Norton Rose Fulbright, May 2017
- Corporate PPAs, Norton Rose Fulbright, August 2017