

Beyond Green Bonds: Sustainable Finance Comes Of Age

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Investment of some \$90 trillion is needed in the next 15 years to achieve global sustainable development and climate objectives, according to estimates put forward by the Group of Twenty's Green Finance Synthesis Report. Over \$800 billion needs to be invested every year to 2020 in renewable energy, energy efficiency, and low-emission vehicles alone, according to OECD estimates. To put it all in to perspective, global investment in clean energy in 2016 was less than \$300 billion.

In our view, a key enabler for higher levels of investment in clean energy and other sustainable infrastructure is a standard by which investors can assess the relative merits of a project to be financed with respect to transparency, governance, and environmental impact, that is, its contribution to decarbonization, pollution reduction, as well as resilience to severe climate impacts. Information about the environmental benefit of an investment has become essential to investors seeking to meet green mandates and to mitigate the potential future risk of climate-related events.

S&P Global Ratings' Green Evaluation, launched today, April 26, aims to provide greater transparency and serve as a global benchmark for environmental impact and improved infrastructure resilience. The Green Evaluation will assist emerging demand from investors to reward good-quality green investments as the market grows and expands beyond labeled green bonds to sustainable loans, other forms of debt such as securitizations, as well as to equity portfolios.

Overview

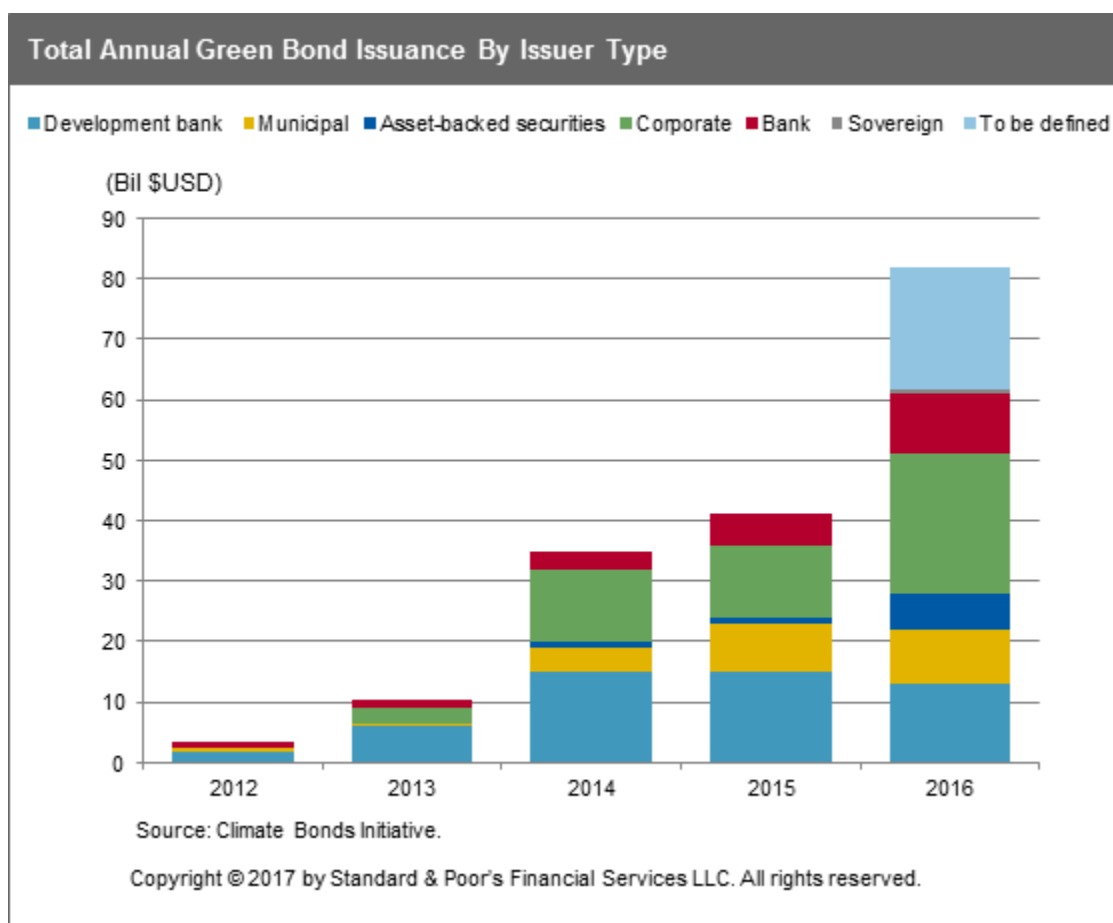
- Sustainable finance is reaching beyond the labeled green bond market to new instruments and asset classes. A continued ramping up will depend on trusted benchmarks for investment in climate-resilient infrastructure, renewable energy, and clean transport.
- Transparency and governance over the use of proceeds as well as green quality will play an increasingly important role in investment decisions. Methods for assessing the "green" quality of an investment will bring visibility and enable price discovery for investors.
- Furthermore, the ability to compare investments based on the environmental benefits they deliver to a wider stakeholder base will enable investors to rank and therefore price green securities according to their environmental quality.
- Our Green Evaluation tool provides investors with the globally recognized level of information transparency they need and can be used for any type of financial instrument including stocks, bonds, loans, and securitizations.

The Need To Be Seen As Green

Labeled green bonds are growing in volume but are still a niche market segment. Issuance of labeled green bonds doubled to \$82.6 billion in 2016 from 2015 levels, driven by the successful negotiation of The Paris Agreement,

increased national initiatives to establish green bond principles, and strong issuance from China (see chart 1). We expect that in 2017 the market will meet the milestone of issuing over \$100 billion worldwide in a single year, supported by continued strong volumes from Asia and the entry of new sovereign issuers. While January saw a strong start toward this goal, with total issuance of \$11.2 billion, February and March fell behind with total volumes of only \$5.14 billion and \$5.24 billion. Despite strong signals from issuance growth year on year, the market remains relatively small, representing only 1.4% of a \$90 trillion global aggregate fixed-income market.

Chart 1



S&P Global Ratings views the emergence of new instruments integrating green finance and conventional financings, such as green loans and green securitizations, combined with a widely used standard, as crucial to the further development and scaling up of the sustainable finance industry. So far, it's been driven by a mixture of retail demand, increasing regulation, portfolio decarbonization commitments, and a growing awareness of climate risk exposure.

Green loans

Green loans are an example of a new sustainable finance instrument. These loans draw on similar governance principles as labeled green bonds, with ring-fencing of proceeds and certification against Green Bond Principles.

A recent example, the largest green loan issued to date, is a six-year \$533 million green labeled loan, secured by

Spanish utility Iberdrola from banking group BBVA in February, which was certified against Green Bond Principles.

Our Green Evaluation tool facilitates identification of the green contribution of a financing by highlighting the portion of funds dedicated to green investments and assessing its environmental or resilience impact. This approach lends itself to loan instruments as well as the conventional green bond. The Green Evaluation can also apply to a mixed-purpose financing where proceeds are used for a variety of green projects or if only a portion of these are green.

Green securitizations

Green securitization, another emerging instrument, generally allows smaller-scale assets to be pooled to reach large capital-market investors. It could therefore provide a suitable mechanism for pooling green loans or mortgages for green buildings, so that banks can take them off their balance sheets. Constraints to widespread market use of these instruments have been an insufficient volume of identifiable green loans to bundle, the absence of standardized green loan contracts, and a lack of standards to ensure the environmental quality of these products. Despite these constraints, and only \$5 billion of issuance so far, new asset-backed financings in the green space have started to emerge including the innovative synthetic green securitization by Crédit Agricole (see box).

Crédit Agricole's Innovative Synthetic Green Securitization

Crédit Agricole freed up capital by transferring the risk of a \$3 billion portfolio of infrastructure loans to Mariner Investment Group LLC. The loans remain on Crédit Agricole's balance sheet; the risk transfer means that Mariner now shares some of the liability in the event of any default. Crucially, this risk transfer allows the bank to hold less regulatory capital (essentially the levels of capital banks must carry as reserves, which are higher following the global financial crisis). The use of the resulting \$2 billion of freed up capital is what makes this synthetic deal innovative; Crédit Agricole has committed it in full to new green lending. A central benefit of synthetic securitization is high leverage. Mariner's investment in this first green synthetic deal is likely to be around \$150 million. The green credentials of the synthetic securitization arise from its "proceeds" in the form of \$2 billion of freed up capital that is then allocated to green projects. The \$3 billion portfolio backing the deal is not green, but a mix of 200 mainly non-green loans from a range of sectors, including power, oil and gas, and real estate.

Sources: Climate Bonds Initiative, Financial Times.

Lowering The Barriers To Green Financing

S&P Global Ratings views recent initiatives undertaken by institutional market leaders to be highly supportive of greater sustainable investment. Good examples are the G-20 Green Finance Study Group (GFSG), formed in 2015 to identify barriers to green financing and mobilize private investment into green projects, which works with the European Commission and European Investment Bank (EIB), together with market stakeholders, to devise a transparent and trusted framework for securitization. In addition, the EIB is exploring ways to accelerate the development of a green securitization market. The European Commission's recent appointment of a High-Level Expert Group on Sustainable Finance, of which S&P Global is a member, indicates that its leadership in this field is set to continue.

A key barrier to green financing has been the lack of internationally agreed climate-related key performance indicators (KPIs) for corporate financial reporting. These could provide visibility to investors when comparing how well companies deliver on their green targets. To begin to address this issue, the Financial Stability Board (FSB) set up a Task Force on Climate-related Financial Disclosures (TCFD) to promote such reporting. In December 2016, the task force released recommendations in four areas: governance, strategy, risk management, and metrics and targets. As well, a key recommendation is that companies conduct forward-looking scenario analysis to assess and illustrate the potential impact of different climate scenarios on their businesses.

Despite the lack of climate KPIs, there is significant corporate momentum to improve climate reporting. More than 11,700 companies around the world now practice some kind of environmental, social, or governance (ESG) reporting, according to Bloomberg. Most notably, Asian countries, particularly Japan, have recorded a sharp rise in ESG reporting following the introduction of new ESG guidelines by regulators. The TCFD's recommendations should add to the momentum, but more importantly start to provide a basic level of standardization. This will aid comparability, which in turn will greatly improve the usability of disclosure for investors. Another driver, although on a smaller scale, is the publication of guidance on ESG disclosure by about 20 stock exchanges around the world, with the latest being the London Stock Exchange Group.

A Clear Price Premium Can Add Momentum

Up to now there have been few market standards that allow investors to benchmark pricing of financial instruments based on their level of greenness, in the same way that credit ratings facilitate the pricing of credit risk through a risk premium or spread over the risk-free rate. In our view this has inhibited market growth in the green finance sector.

Initial evidence seems to point to higher demand for green financings, which in some instances has driven price differentials. This evidence is still limited and remains inconclusive, but analysis carried out by French bank Natixis (see table 1) suggests that issuers benefited from the green label in the primary market through:

- The reduction of execution risks, that is, improved market depth and penetration, an increasingly captive investor base, and slightly stronger pricing power in some cases;
- Diversification of the investor base; and
- During difficult market conditions, the ability to better distribute bonds among a wider and more granular range of investors.

Table 1

Examples Of Pricing In The Primary Market For Green Bonds

Issuer Name	Issue date	Inaugural green bond	Initial pricing terms	Final terms	Comment
Institut Credito Oficial	February 4, 2015	Yes	+12 bps	+9 bps	First Social Bond issued by Instituto de Crédito Oficial (ICO), largest-ever deal for this type of bond that was 35% subscribed by ESG investors. The final pricing was better than the gray transaction (-2 bps inside).
Land Nordrhein-Westfalen	March 11, 2015	Yes	-8 bps	-11 bps	Inaugural sustainable Issue. Better spread traction (-3 bps) than comparable gray issue (0 bps/-1 bps).

Table 1**Examples Of Pricing In The Primary Market For Green Bonds (cont.)**

Issuer Name	Issue date	Inaugural green bond	Initial pricing terms	Final terms	Comment
Neder Financierings-Maat	April 20, 2015	No	-10 bps	-13 bps	Better demand (€1 billion) and price traction (-3 bps versus -1 bps for the €500 million five-year gray issue). Better diversification in France.
Region of Ile de France	April 23, 2015	No	+22 bps	+21 bps	
Berlin Hyp	May 5, 2015	Yes	-14 bps	-16 bps	
European Investment Bank	August 27, 2015	No	-24 bps	-24 bps	Priced in line with comparable European Investment Bank (EIB) bonds and generated more demand (€600 million versus €500 million) and better diversification, especially in the Netherlands and France.
Neder Waterschapsbank	September 3, 2015	No	+4 bps	+2 bps	Demand from SRI investors meant it was possible to print a larger size (€1 billion) than initially planned. Price in line with gray issuances.
Kutxabank	October 27, 2015	Yes	+37 bps	+35 bps	
KFW	October 27, 2015	No	-21 bps	-22 bps	Much higher rate of oversubscription than on the gray seven-year benchmark issuance earlier in 2015 that did not reach the usual €3 billion size. Demand allowed KFW to print a larger deal (€1.5 billion) than initially targeted (€1 billion). Smaller new issue premiums (NIP) (+3 bps) than for a typical gray benchmark transaction.
Bank Nederlandse Gemeeten	November 3, 2015	No	-6 bps	-8 bps	Strong demand that made it possible to print a larger deal (€650 million) than the inaugural green bond (€500 million).
Nordrhein-Westfalen Bank	November 10, 2015	No	-1 bps	-2 bps	The transaction suffered from less visibility and distribution depth than other gray issuances. The number of book runners and lead managers was limited compared with other benchmark deals from the issuer.
Ville de Paris	November 18, 2015	Yes	+30 bps	+30 bps	Very domestic allocation and overall in line with gray transactions.
Land Nordrhein-Westfalen	March 16, 2016	No	+2 bps	-2 bps	
Institut Credito Oficial	April 12, 2016	No	+28 bps	+24 bps	
KFW	May 20, 2016	No	-21 bps	-24 bps	Tighter spread and higher price traction (-3 bps) than usual gray benchmark transactions (-1 bps).
Nordic Investment Bank	June 10, 2016	No	-17 bps	-17 bps	
Region of Ile de France	June 14, 2016	No	-35 bps	-30 bps	
Bank Nederlandse Gemeeten	July 13, 2016	No	-1 bps	-3 bps	Much bigger book than for gray benchmarks from BNG (20% to 50% more demand).
European Investment Bank	October 5, 2016	No	-10 bps	-10 bps	Broader geographical distribution than gray issuances as well as broader demand. Fully subscribed.

bps—Basis points. ESG—Environmental, social, and governance. SRI—Socially responsible investing. Source: Natixis.

In the secondary market, some examples exist of pricing premiums when comparing spread differences between comparable green and non-green bonds, but again plenty of evidence points to no significant difference between green and non-green pricing, leaving us with no conclusive trend.

In an example of a pricing advantage in the secondary market, yields for the euro-denominated green bonds of Hera SpA, an Italian utility, were lower than yields of comparable non-green bonds (see chart 2). However, it must be noted that the difference in tenor accounted for some (and perhaps all) of the price difference. Notably in the primary market, the initial order book was 3x oversubscribed with 69% of demand coming from investors with ESG investment criteria. In contrast, the difference in the Z-spread (the single spread that, when added to each spot rate, produces a bond value that is equal to the current market value of a bond) is negligible for Engie, a French utility company (see chart 3).

Chart 2

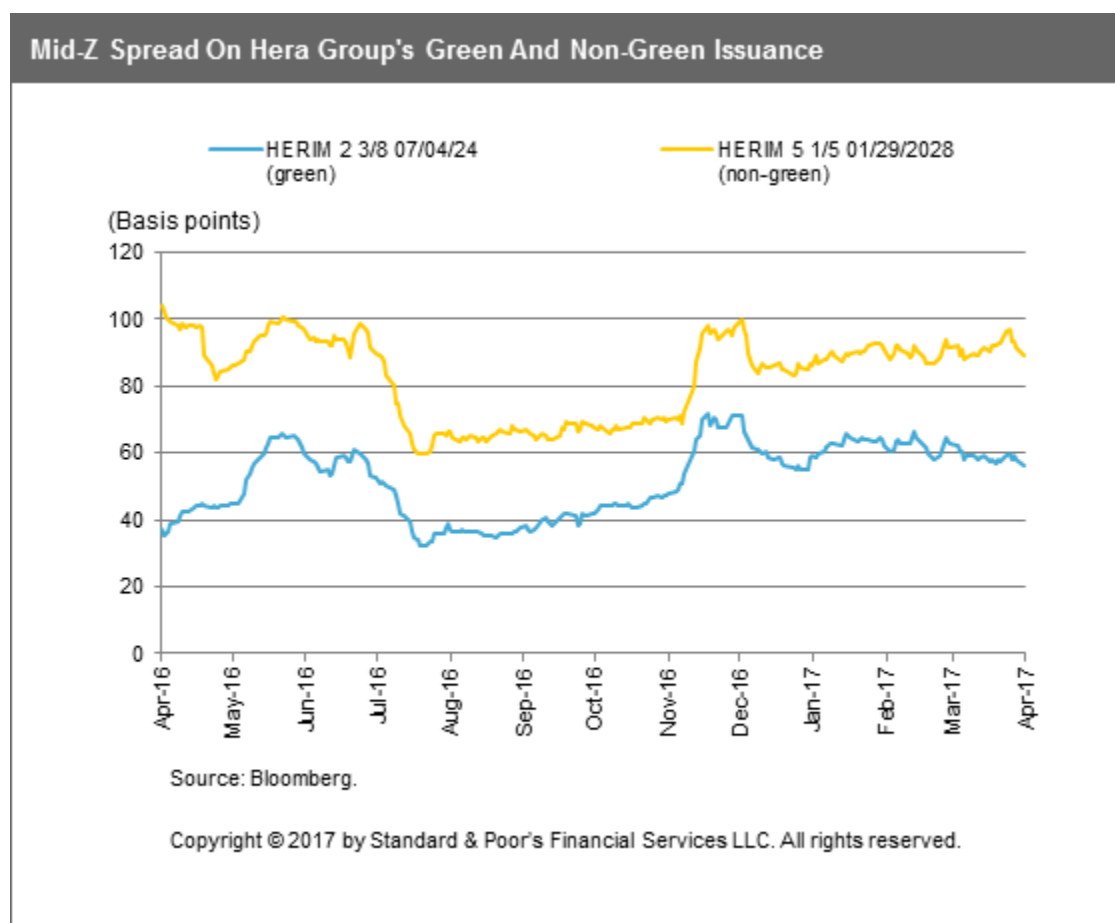
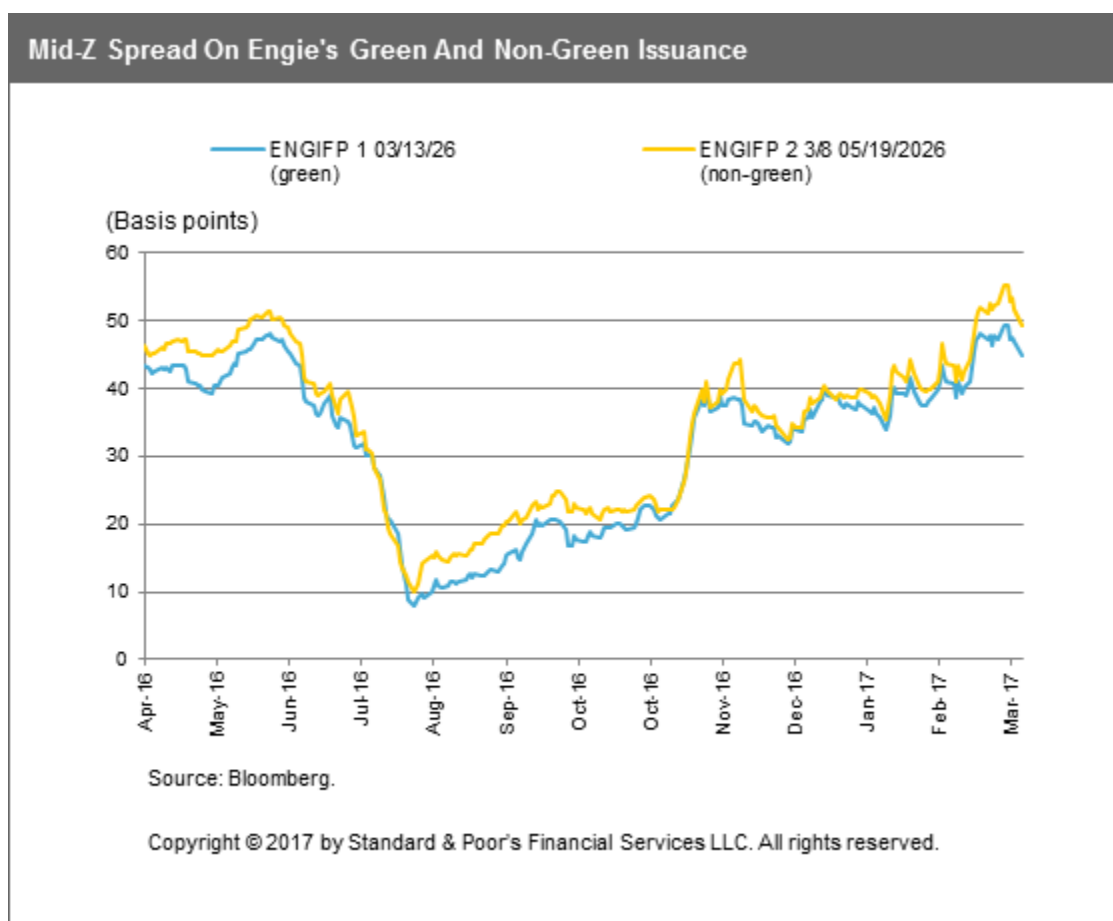


Chart 3



Other deals such as Ontario's inaugural green bond were as much as 5x oversubscribed and MidAmerican Energy's \$850 million green bond issued in February 2017 was over 3x oversubscribed, showing that the demand for such instruments transcends the Atlantic.

Some studies indicate that the secondary market also appears to be less liquid mainly because investors tend to hold green issues until maturity, which might potentially result in an increased price for a green label. We believe that price discovery up to now has been inhibited by a lack of widely recognized benchmarks available in the green label finance market.

Beyond market pricing, we believe that use of a Green Evaluation score will aid in comparability and price discovery for this asset class, as investors will be better able to determine the environmental and social benefits of any green financing. These benefits are likely to identify a financially quantifiable value to the asset owner as well as the local economy and help countries to meet climate targets. For instance, the benefits of building effective flood defenses to protect a local power plant can help avoid the costs associated with repair, recovery, and environmental cleanup in the event of a disaster and protect the health, safety, and wealth of the local community.

The information and metrics that the Green Evaluation provide can assist in decision making. While efforts are being

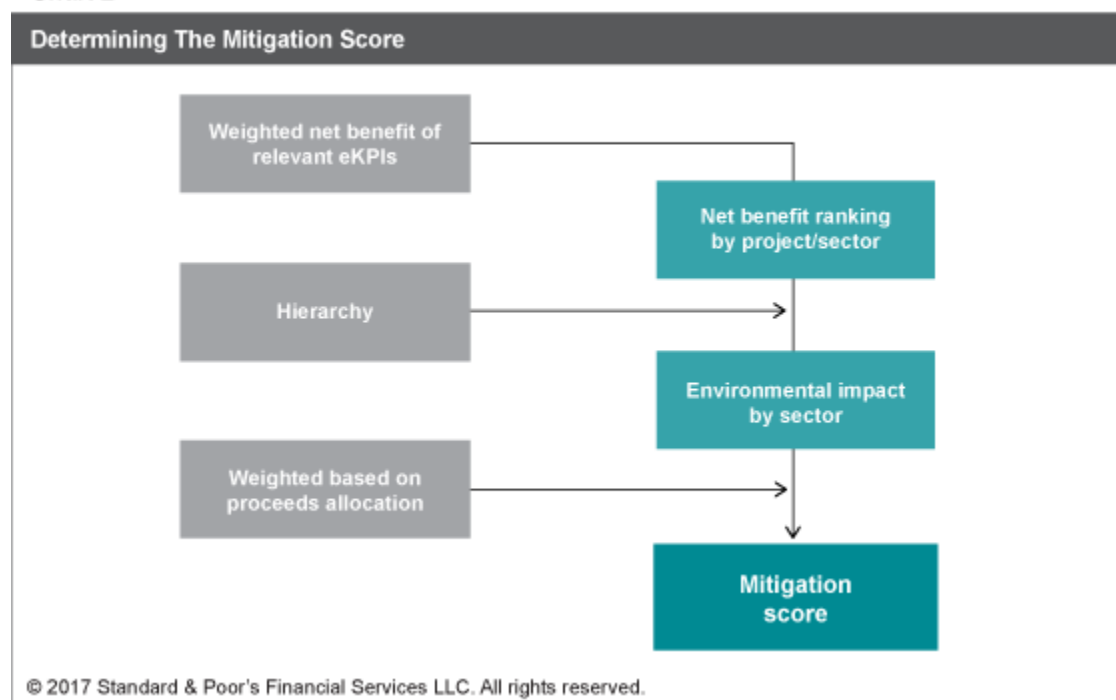
made to include environmental analysis in risk profiling, the lack of analytical capacity to quantify benefits designed to mitigate climate-related risks or adapt to severe weather events can result in investment decisions based on incomplete information, leading to a higher cost of financing for developers in comparison to the cost of financing that could be achieved if the environmental benefits of the project were properly priced in. Where environmental impact analysis does happen, the lack of a standard analytical approach can hinder decision making.

Assessing Greenness

Transparency, governance, and credibility are crucial in assigning environmental value to green investments. There is still a lack of universally accepted principles about what constitutes green, resulting in different interpretations. For example, green bonds have been issued for "clean coal" projects in China to install emissions-cutting technologies for coal power stations. While this is allowed under Chinese rules, it is not considered green under the Green Bond Principles or the Climate Bonds Standard. These discrepancies carry reputational risks and litigation risks for issuers, deterring them from green labeling and, in effect, subduing supply below its potential.

Rather than define what green means, our Green Evaluation takes the approach of evaluating the relative environmental impact of a given project compared to peers. We consider three core environmental KPIs in the areas of carbon, water, and waste. These KPIs are weighted and combined to form a net benefit ranking (see the chart "Determining The Mitigation Score" below, which is chart 2 in "Green Evaluation Analytical Approach," published on April 26, 2017). For resilience projects we consider the cost of the project and the benefits of the promised increased resilience to climate change-related extreme weather events.

Chart 2



We also differentiate between projects like renewable energy which enable systemic change and industrial efficiency measures that might reduce a carbon footprint but aren't compliant with the target of an average global temperature rise of at most 2 degrees compared with preindustrial levels. A similar approach is taken for projects that focus exclusively on the management of water resources that aim to address water scarcity and pollution. The environmental impact of each type of project (for example renewable energy and green buildings) is assessed separately. The combined environmental or resilience impact for each financing is combined with our transparency and governance assessments to form the overall Green Evaluation score (see "Green Evaluation Analytical Approach," published on April 26, 2017). Lastly we translate the final score (on a scale of 0 to 100) to a final Green Evaluation score which ranges from 'E1', which in our view contributes the most to meeting climate change targets, to 'E4' which contributes less.

The Role Of Analytics In Sustainable Finance

It is clear that the \$90 trillion requirement over the next 15 years will not be met by green bonds alone and that other forms of financing will play a key role. As the world of sustainable finance expands beyond green bonds, it is essential that investors are able to compare the environmental quality of a financing irrespective of asset class. Our Green Evaluation lays the foundation for comparing sustainability and is applicable to a wide range of financing methods. Tools like ours are designed to enable investors to easily identify projects of high environmental quality, make more informed investment decisions, and avoid being "green-washed." Over time green analytics can start to more consistently impact pricing and create demand for sustainable finance of all kinds.

We would like to acknowledge the contribution of Michaela Brnova to this report.

Related Research

S&P Global Ratings

- Green Evaluation Analytical Approach, April 26
- Guest Opinion: We Won't Solve for Green Finance Unless We Solve For Infrastructure, April 26
- Green Finance: The Next Driver Of Real Growth? March 28, 2017
- New Recommendations For Climate Risk Disclosure Follow A Positive Outcome At Marrakech, Dec. 14, 2016
- The Paris Agreement: A New Dawn For Tackling Climate Change, Or More Of The Same? Jan. 18, 2016

External research

- Green & Sustainable Bonds – Green Bonds 3.0: Quality Check, Natixis, January 2017

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