WEBINAR

Green Bonds 101

September 12th, 2018

The webinar will begin momentarily...
Speakers

Chris Wigley, Senior Fixed Income Portfolio Manager, Mirova

Kevin Kwok, Vice President of ESG Fixed Income, MSCI

Elizabeth Palchack, Graduate Fellow and a Member of the Socially Responsible Investment Advisory Committee, The University of Vermont

David Ellis, Executive Vice President and CFO, Becker College

Dominic Pappalardo, Portfolio Manager, McDonnell Investment Management

Moderator: Nicole Harman, Program Manager, Intentional Endowments Network
The Intentional Endowments Network

A Peer-Learning Network for Higher Education, Philanthropic & Non-Profit Endowments Aligning Investment Portfolios with Institutional Mission, Values, & Sustainability Goals

**Endowments**
- Presidents
- CFOs
- Trustees
- Students
- Alumni
- Donors
- Faculty
- Staff
- Managers
- Consultants

**Space for Education & Training**

**Creating New Resources When Needed**

**Facilitating Knowledge Exchange**

**Forums & Events**

**Investment Firms**

**Other Institutional Investors**

**Non-Profit & Advocacy Groups**

**Peer to Peer Networking**

**Associations & Networks**

**Creating New Resources When Needed**
The Green Bond Market
The Green Bond Principles

Background

- Established in 2014

- Representing the Industry, the Executive Committee is divided equally between Issuers, Investors and Intermediary Banks

- More than 100 members and an Executive Committee of 24 members

- Established guiding principles for Green Bond market that are evolved and strengthened every year

- Promote progress on environmentally sustainable activities

- Four components:
  - Use of Proceeds
  - Project Evaluation and Selection
  - Management of Proceeds
  - Regular Reporting

Source: Mirova & The Green Bond Principles. 'The Green Bond Principles' (GBP) is an organisation with 60 members (banks, issuers, and investors). The Green Bonds Principles aim to provide guidelines on the elements required for issuing a green bond and how they should be structured.
Green Bond definition

A Green Bond includes the:

1. Disclosure of identifiable ‘use of proceeds’ (projects)
2. Financing of projects with real environmental benefits (impacts)
3. Disclosure of the management of proceeds – use of an auditor to track the funds
4. Regular reporting including impact

Attractions

- Fund environmental projects
- Finance energy and ecological transition
- Transparent
- Environmental and social impact
- Market return

Risks

- Risk of low quality issuance:
- Weak environmental projects
- Poor transparency
- Low level impact
- Loose interpretation of Green Bonds Principles

Definition based on the four pillars of the Green Bond Principles - The "Green Bond Principles" (GBP) is an organization with more than 140 members (banks, issuers, and investors). The Green Bond Principles aim to provide guidelines on the elements required for issuing a green bond and how they should be structured.
Source: Mirova & The Green Bond Principals
Green Bonds Versus Conventional Bonds

<table>
<thead>
<tr>
<th>Conventional Bond</th>
<th>Green Bond</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sumitomo Mitsui Banking</strong></td>
<td><strong>Sumitomo Mitsui Banking</strong></td>
</tr>
<tr>
<td><strong>Coupon:</strong> 2.45%</td>
<td><strong>Coupon:</strong> 2.45%</td>
</tr>
<tr>
<td><strong>Maturity:</strong> January 2020</td>
<td><strong>Maturity:</strong> October 2020</td>
</tr>
<tr>
<td><strong>Currency:</strong> USD</td>
<td><strong>Currency:</strong> USD</td>
</tr>
<tr>
<td><strong>Spread:</strong> 70 bp</td>
<td><strong>Spread:</strong> 70 bp</td>
</tr>
<tr>
<td><strong>Yield:</strong> 1.94%</td>
<td><strong>Yield:</strong> 1.94%</td>
</tr>
</tbody>
</table>

**Use of proceeds**

**Regular Reporting**

**Source:** Mirova & Bloomberg - Figures as of October 20, 2016 For Illustrative Purposes Only. Not representative of any holding or security.
A Market Experiencing Rapid Growth and Diversification in Terms of Issuers

Green Bond market size since 2006

Annual issuance of new Green Bonds

Source: Mirova – Data illustrated is from January 1, 2006 through March 29, 2018 – Excl ABS, Muni, China Onshore. We only consider green bond issues > $200m. Note that Mirova categorizes green bonds according to its own analysis, which may differ from the analysis of others. The figures provided relate to previous years and past performance is no indicator of future performance.
Green Bond Market – Currency Breakdown, Issuer Type and Financial Ratings Category

**Distribution by Currency**

- EUR: 56%
- USD: 34%
- GBP: 2%
- AUD: 2%
- CAD: 2%
- SEK: 1%
- Other: 2%

**Distribution by Issuer Type**

- Corporates: 29%
- Supranational: 15%
- Agencies: 14%
- Collateralized and Banks: 15%
- Public Banks: 7%
- Regions: 8%
- High Yield: 3%
- Sovereigns: 9%

**Distribution by Credit Rating**

- AAA: 30%
- AA: 26%
- A: 22%
- BBB: 18%
- High Yield: 4%

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Source: Mirova, Natixis, Bloomberg – March 29, 2018– Excl ABS, Muni, China Onshore. We only consider green bond issues > $200m. Note that Mirova categorizes green bonds according to its own analysis, which may differ from the analysis of others.

*In the bar chart above, credit ratings are ranked highest (AAA) to lowest (High Yield (HY)) and reflect the weighted average credit rating assigned by S&P, Moodys and Fitch to the underlying holdings of the green bond market; ratings are subject to change.
Green Bond Market - Geographic Location

% Distribution by Country

Source: Mirova, Natixis, Bloomberg – March 29, 2018 – Excl ABS, Muni, China Onshore. We only consider green bond issues > $200m. Note that Mirova categorizes green bonds according to its own analysis, which may differ from the analysis of others.
THE EVOLUTION OF GREEN BONDS

Kevin Kwok, Vice President – MSCI ESG Research

September 2018
AGENDA

1. How is the Green Bond market evolving?
2. Why Invest in Green Bonds?
THE NEED FOR TRANSFORMATIVE INVESTMENTS

2100 WARMING PROJECTIONS
Emissions and expected warming based on pledges and current policies

THE FUNDING GAP

USD 29 trillion
additional investment in clean energy required to meet 2°C target between 2015-2050*

Source: Climate Action Tracker, OECD/IEA and IRENA 2017, UN New Climate Economy Report 2017
<table>
<thead>
<tr>
<th>Category</th>
<th>Market Value (USD Billions)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ALTERNATIVE ENERGY</td>
<td>$182 bn</td>
<td>Solar, onshore and offshore wind, geothermal, small hydro projects</td>
</tr>
<tr>
<td>ENERGY EFFICIENCY</td>
<td>$146 bn</td>
<td>Street lighting improvements, electric public transportation projects</td>
</tr>
<tr>
<td>GREEN BUILDING</td>
<td>$83 bn</td>
<td>Certified green buildings (residential, commercial, industrial)</td>
</tr>
<tr>
<td>SUSTAINABLE WATER</td>
<td>$79 bn</td>
<td>Water treatment projects, water efficiency projects</td>
</tr>
<tr>
<td>POLLUTION PREVENTION</td>
<td>$71 bn</td>
<td>Pollution control systems, recycling projects</td>
</tr>
<tr>
<td>OTHER</td>
<td>$70 bn</td>
<td>Climate change adaptation projects, sustainable forestry</td>
</tr>
</tbody>
</table>

Source: MSCI ESG Research, Bloomberg as of July 2018; a single bond may contribute to multiple categories.
EVOLUTION OF GREEN BONDS

BLOOMBERG BARCLAYS MSCI GLOBAL GREEN BOND INDEX
MARKET VALUE (USD MILLIONS)

Source: MSCI ESG Research, Bloomberg as of July 2018.
COMPOSITION OF GREEN BOND MARKET

Bloomberg Barclays MSCI Global Green Bond Index
Market Value by Sector (%)

- GOVERNMENTS: 65%
  - Treasuries
  - Sovereign
  - Supranational
  - Agencies
  - Local Authorities

- CORPORATES: 32%
  - Financial
  - Industrial
  - Utility

- SECURITIZED: 3%
  - Securitized

Bloomberg Barclays MSCI Global Green Bond Index
Market Value by Credit Quality (%)

- AAA: 31%
- AA: 26%
- A: 23%
- BAA: 20%

Source: MSCI ESG Research, Bloomberg as of July 2018.
Evaluation of green bonds is independent of issuer ESG rating (>6,500 companies rated)

On average, green bond issuers tend to have a stronger ESG profile than peers, but even the lowest-rated companies can issue green bonds to finance improvements.

MSCI ESG Rating Distribution of Issuers on Bloomberg Barclays MSCI Global Green Bond Index

40% ESG Leaders (AA, AAA) compared to 15% of Global Aggregate

Source: Bloomberg Barclays MSCI Global Green Bond Index, MSCI ESG Research, as of June 2018.
In a 2016 study on US Corporate Bonds, Barclays found that:

**Bonds with high MSCI governance scores have experienced fewer credit rating downgrades***

12-month rolling downgrade notch rates for bonds with high and low governance scores

**High-ESG bond portfolios performed better than low-ESG***

Return differences in % per year


*Past performance is not indicative of future results, which may differ materially.*
• GOING GLOBAL:
  – Green bonds in Asia, Emerging Markets

• CONTINUED INNOVATION:
  • New types of green bonds – securitized, sovereign green bonds
<table>
<thead>
<tr>
<th></th>
<th>AGENDA</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>How is the Green Bond market evolving?</td>
</tr>
<tr>
<td>2</td>
<td>Why Invest in Green Bonds?</td>
</tr>
</tbody>
</table>
SHOULD YOU INVEST IN GREEN BONDS?

- CHALLENGES:
  - Green bond standards are voluntary
    - Requires consistent and independent assessment, follow-up on use of funds
  - Green bond market is still very small
    - USD 200 billion market value*
    - Challenges in accessibility, liquidity
    - Role for green bond funds

Source: Bloomberg Barclays MSCI Global Green Bond Index, MSCI ESG Research, as of July 2018.
• VALUE PROPOSITION:

*Similar risk / return profile vs. market...*  
*... with measureable positive impact*

**GLOBAL GREEN BOND INDEX EXCESS RETURNS**

![Graph showing excess returns for Global Green Bond Index and Global Aggregate from 2015 to 2018.](image)

**E.G.: WORLD BANK GREEN BOND IMPACT REPORT**

**GLOBAL GREEN BOND VS GLOBAL AGGREGATE**

<table>
<thead>
<tr>
<th>Duration</th>
<th>Yield</th>
</tr>
</thead>
<tbody>
<tr>
<td>Global Green Bond</td>
<td>7.25</td>
</tr>
<tr>
<td>Global Aggregate</td>
<td>7.03</td>
</tr>
</tbody>
</table>

### MSCI Green Bond Criteria

<table>
<thead>
<tr>
<th>USE OF PROCEEDS:</th>
<th>Detailed taxonomy of eligible projects</th>
</tr>
</thead>
<tbody>
<tr>
<td>PROJECT SELECTION &amp; EVALUATION:</td>
<td>Process for determining eligible projects</td>
</tr>
<tr>
<td>MANAGEMENT OF PROCEEDS:</td>
<td>Process for earmarking proceeds for eligible projects</td>
</tr>
<tr>
<td>ONGOING REPORTING:</td>
<td>Annual reporting of use of proceeds and impacts</td>
</tr>
</tbody>
</table>

### MSCI Green Bond Research Process

| INDEPENDENT ANALYSIS:                  | MSCI ESG Research does not provide “second party opinions”, green bond certification, or issuer-solicited ratings |
| PUBLICLY AVAILABLE INFORMATION:       | MSCI ESG Research considers only publicly available information in its assessment |
| TRANSPARENT METHODOLOGY:              | Detailed methodology is available to subscribers |
| ANNUAL REVIEW:                        | Bonds may be removed due to failure to report on an annual basis, following 6-month grace period and issuer outreach |
### MSCI ESG RESEARCH GREEN BOND FRAMEWORK

<table>
<thead>
<tr>
<th>ALTERNATIVE ENERGY</th>
<th>Products, services, or infrastructure projects supporting renewable energy and alternative fuels.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wind</td>
<td>Hydro (Specific Criteria)</td>
</tr>
<tr>
<td>Solar</td>
<td>Biogas</td>
</tr>
<tr>
<td>Geothermal</td>
<td>Biofuels</td>
</tr>
<tr>
<td></td>
<td>Biomass</td>
</tr>
<tr>
<td></td>
<td>Waste energy</td>
</tr>
<tr>
<td></td>
<td>Wave tidal</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ENERGY EFFICIENCY</th>
<th>Products, services, infrastructure, or technologies addressing the demand for energy while minimizing environmental impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demand-side management</td>
<td>Energy storage</td>
</tr>
<tr>
<td>Battery technology</td>
<td>Superconductors</td>
</tr>
<tr>
<td>Fuel cells/hydrogen systems</td>
<td>Nat gas comb. heat &amp; power</td>
</tr>
<tr>
<td>Smart grid</td>
<td>LED Lighting</td>
</tr>
<tr>
<td>Industrial automation</td>
<td>Environmental IT</td>
</tr>
<tr>
<td></td>
<td>Compact fluorescent lighting</td>
</tr>
<tr>
<td></td>
<td>Insulation</td>
</tr>
<tr>
<td></td>
<td>Hybrid/electric vehicles</td>
</tr>
<tr>
<td></td>
<td>Clean transport infrastructure</td>
</tr>
<tr>
<td></td>
<td>IT optimization</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>POLLUTION PREVENTION</th>
<th>Products, services, or projects that support pollution prevention, waste minimization, or recycling to alleviate unsustainable waste generating.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environmental remediation</td>
<td>Waste treatment (ex landfill and incineration)</td>
</tr>
<tr>
<td></td>
<td>Reuse &amp; recycling of waste</td>
</tr>
<tr>
<td></td>
<td>Conventional pollution control</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SUSTAINABLE WATER</th>
<th>Products, services, and projects that attempt to resolve water scarcity and water quality issues, including minimizing and monitoring current water use and demand increases, improving the quality of water supply, and improving the availability and reliability of water.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water infra &amp; distribution</td>
<td>Smart metering devices</td>
</tr>
<tr>
<td>Rainwater harvesting</td>
<td>Drought-resistant seeds</td>
</tr>
<tr>
<td></td>
<td>Waste water treatment</td>
</tr>
<tr>
<td></td>
<td>Desalination</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>GREEN BUILDING</th>
<th>Design, construction, redevelopment, retrofitting, or acquisition of ‘green’ certified properties, subject to local building criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Green certified properties (LEED, BREEAM, etc.)</td>
<td>Uncertified green properties (top 15% on energy efficiency)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CLIMATE ADAPTATION</th>
<th>Projects that reduce the vulnerability of social or environmental systems to the effects of risks related to climate change by maintaining or increasing adaptive capacity, reducing sensitivity to climate change or increasing climate resilience, including:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flood Protection, Climate Resilience Services, etc.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>OTHER</th>
<th>Other environmental activities that do not fit into the categories above, including sustainable forestry / agriculture</th>
</tr>
</thead>
</table>
### What is “Green”?

<table>
<thead>
<tr>
<th>Category</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alternative Energy</td>
<td>Wind and solar power generation</td>
</tr>
<tr>
<td>Energy Efficiency</td>
<td>Energy efficiency retrofits</td>
</tr>
<tr>
<td>Pollution Prevention</td>
<td>Recycling projects, pollution remediation</td>
</tr>
<tr>
<td>Sustainable Water</td>
<td>Investments in water efficiency</td>
</tr>
<tr>
<td>Green Building</td>
<td>Gold or Platinum LEED certified properties</td>
</tr>
<tr>
<td>Climate Adaptation</td>
<td>Flood and storm surge mitigation projects</td>
</tr>
</tbody>
</table>

### “Grey” Areas

<table>
<thead>
<tr>
<th>Category</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Large hydropower projects without commitment to HSAP or IFC standards</td>
<td>Waste landfilling or incineration without a waste-to-energy component</td>
</tr>
<tr>
<td>Energy efficiency in coal power production; Freight rail transport</td>
<td>Water distribution without measurable gains in efficiency or quality</td>
</tr>
<tr>
<td>Energy efficiency retrofits</td>
<td>Investments in water efficiency</td>
</tr>
<tr>
<td>Recycling projects, pollution remediation</td>
<td>Gold or Platinum LEED certified properties</td>
</tr>
<tr>
<td>Waste landfilling or incineration without a waste-to-energy component</td>
<td>Flood and storm surge mitigation projects</td>
</tr>
<tr>
<td>Water distribution without measurable gains in efficiency or quality</td>
<td>Uncertified buildings that do not demonstrate top-ranking energy efficiency performance</td>
</tr>
<tr>
<td>Freight rail transport</td>
<td>Lack of a clear climate adaptation benefits</td>
</tr>
</tbody>
</table>

Source: MSCI ESG Research, Bloomberg
SECTOR
Treasury, corporate, government-related, and securitized bonds are included. This includes taxable municipals.

ELIGIBLE CURRENCIES
Americas: CAD, CLP, MXN, USD
EMEA: CHF, CZK, DKK, EUR, GBP, HUF*, ILS, NOK, PLN, RUB, SEK, ZAR
Asia-Pacific: AUD, HKD, JPY, KRW, MYR, NZD, SGD, THB

QUALITY
Securities must be rated investment grade (Baa3/BBB-/BBB- or higher) using the middle rating of Moody’s, S&P and Fitch;

AMOUNT OUTSTANDING
- 300mn: USD (excluding MBS, ABS, and CMBS), CAD, EUR, CHF, AUD
- 150mn: CAD*
- 200mn: GBP
- 35bn: JPY
- 1bn: USD MBS pass-throughs
- 25bn: USD ABS and CMBS tranches*
- 2bn: DKK, NOK, PLN, ZAR, ILS, HKD, MYR
- 2.5bn: SEK
- 10bn: MXN, CZK, THB
- 20bn: RUB
- 500mn: NZD, SGD
- 200bn: HKD
- 500bn: HUF
- 2trn: IDR*

COUPON
Fixed-rate coupon.

MATURITY
Unlike other Bloomberg Barclays Aggregate Bond Indices, the Global Green Bond Index does not have a 1- year minimum time to maturity and will hold bonds until final maturity.

TAXABILITY
Only fully taxable issues are eligible.

MARKET OF ISSUE
Publicly issued in the global and regional markets.

SENIORITY OF DEBT
Senior and subordinated issues are included.

*Note: Subject to change based on Bloomberg Barclays Global Aggregate Index. All information based on August 2018
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Green Bonds and SRI at UVM

Elizabeth Palchak, PhD
Consultant – Energy and Behavior | VEIC
Serving as Interim Sustainable Funds Coordinator at The University of Vermont
September 12th, 2018
Proven solutions for a changing energy landscape

- Businesses
- Utilities
- Foundations
- Government
- Universities & Colleges
Millennials’ Attitudes and Behaviors
Potential for Impacts

• Millennials
• Energy Cultures
• Qualitative expertise
• Design Thinking for sustainability

• Socially responsible investing
• Fossil fuel divestment
Socially Responsible Investing Advisory Council

Division of Finance Chairperson
Administrative Representative
Sustainability Fund Coordinator

2 Representatives from each constituency
Undergraduate students
Graduate students
Staff
Faculty
Divestment at UVM

Photo credits: Burlington Free Press
Towards Green Bonds

Green Bonds NOT divestment
Operating funds NOT the endowment

- $10M to start
- A LOT of group education
- Finance faculty on SRIAC**
- Sustainable Funds Coordinator
- Aligned efforts with AASHE STARS

Final recommendation included a new course in our Business School
Thank you!

Elizabeth Palchak, PhD
Consultant

epalchak@veic.org
The Path to 100% Impactful Investing in the Becker College Endowment

September 12, 2018
Becker’s Path to 100% Impactful Investing

✓ Q1-2016: COMMIT to 100% Impact Goal in the Becker Endowment: Unanimous BOARD APPROVAL of IPS Addendum

✓ Q2-2016: RATE all fund manager holdings with HIP Impact-Ratings

✓ Q3-2016: ANALYZE potential changes with Financial Advisor

✓ Q1-2017: APPROVE changes formally at the BOARD and INV-COMM

✓ Q2/Q3-2017: MIGRATE to strategies & funds for 100% impact

✓ Ongoing: MEASURE Quarterly Progress towards 100% Impact Goals

✓ Underway in 2018: ENGAGE fund managers towards more Impact
## Becker Results of Pursuing 100% Impactful Investing

<table>
<thead>
<tr>
<th>Impact Metric</th>
<th>Goals in the new Becker IPS</th>
<th>2016 Allocation Before HIP (Excludes Hedge Funds)</th>
<th>New Portfolio (as of 12/31/17) (Divested Hedge Funds)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) IMPACT: Absolute HIP Impact Rating</td>
<td>50%+</td>
<td>48%</td>
<td>52.1% Net Positive</td>
</tr>
<tr>
<td>(weighted-average)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2) IMPACT: Relative HIP Impact Rating</td>
<td>75%+</td>
<td>73%</td>
<td>77.7% Top Quartile</td>
</tr>
<tr>
<td>(weighted-average vs industry peers)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3) RISK-ADJUSTED RETURNS</td>
<td>Growth allocation</td>
<td>10.01%</td>
<td>10.70%</td>
</tr>
<tr>
<td>- Annual 5-year RETURNS</td>
<td>65%-30%-5% (EQ-FI-ALT)</td>
<td>8.95%</td>
<td>8.52%</td>
</tr>
<tr>
<td>- Annual 5-year RISK volatility</td>
<td></td>
<td>+1.02</td>
<td>+1.09</td>
</tr>
<tr>
<td>- Sharpe Ratio</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4) FEES (weighted average of mutual funds, ETFs, &amp; SMAs in portfolio)</td>
<td>Reasonable</td>
<td>0.83%</td>
<td>0.53%</td>
</tr>
</tbody>
</table>

Risk, return and Sharpe ratios are based on the 5 years ending 12/31/2017.

Source: Thomson Reuters; Morningstar; Morgan Stanley, HIP Investor Ratings

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## Becker College Endowment: Fixed Income Funds

<table>
<thead>
<tr>
<th>Fixed Income Fund</th>
<th>HIP Impact Rating Absolute (50+ positive)</th>
<th>Financial Return (5-year cumulative)</th>
<th>Expense Ratio (annual)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Community Capital Mgmt (CRANX)</td>
<td>70% → 98%</td>
<td>11.0%</td>
<td>0.45%</td>
</tr>
<tr>
<td>Breckenridge SMA</td>
<td>62% → 89%</td>
<td>9.5%</td>
<td>0.15%</td>
</tr>
<tr>
<td>Calvert Short Duration (CULIX)</td>
<td>58% → 86%</td>
<td>7.4%</td>
<td>0.47%</td>
</tr>
<tr>
<td>Black Rock Taxable Munis (BBN)</td>
<td>47% → 59%</td>
<td>15.0%</td>
<td>0.92%</td>
</tr>
<tr>
<td>Nuveen Build America Bond Opportunity (NBD)</td>
<td>47% → 59%</td>
<td>18.4%</td>
<td>0.94%</td>
</tr>
</tbody>
</table>

Return ratios are based on the 5 years ending 9/11/2018

Source: Morningstar; HIP Investor Ratings

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Example Impacts of CCM Fixed Income Funds

<table>
<thead>
<tr>
<th>CCM's SECTORS</th>
<th>AGENCY CMBS</th>
<th>SINGLE FAMILY</th>
<th>AGENCY CMBS</th>
<th>TAXABLE MUNICIPALS</th>
<th>ABS</th>
<th>U.S. CREDIT</th>
<th>EQUITIES</th>
</tr>
</thead>
</table>

**Our Clients’ Positive Impact**

As a firm, CCM has invested over $8.3 billion in impact initiatives nationwide on behalf of our clients since inception with the following quantitative metrics:

- 385,000 affordable rental housing units
- 17,600 home mortgages for low- and moderate-income borrowers
- $337 million in enterprise development and job creation
- $445 million in economic development and healthy communities
Apple Inc. Green Bond (in CRANX)

**Impact:** Investment proceeds will finance projects across Apple’s business focused on environmental sustainability such as
- energy and water efficiency including renewable energy,
- green buildings, and
- a closed-loop supply chain using environmentally friendly materials

Apple expects to spend most green investment proceeds within two years of the date of issuance and commits to publishing annual updates of the proceeds and impact of the projects that have received allocations.

In 2016, 96 percent of the electricity used at Apple’s global facilities came from renewable energy, reducing the corporation’s carbon emissions by nearly 585,000 metric tons.

Apple’s new corporate campus, Apple Park, located in Cupertino, California, is already fully powered by renewable energy and is on track to be the largest LEED Platinum-certified building in North America.
Dominic Pappalardo, Portfolio Manager, McDonnell Investment Management
Q&A

Please enter your questions in the GoToWebinar text box
Thank You!

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