

Strategic Alliance on Green Bond Market Development in G20 Emerging Economies

Green Bond Workshop *Monitoring, Reporting and Market Aspects*

Peter Ellsworth, Director, Investor Program, Ceres



Introduction to Ceres



- Ceres is a nonprofit organization mobilizing business and investor leadership on **climate change, water scarcity**, and other **sustainability challenges**.
- We work with institutional investors and companies on key environmental, social and governance (ESG) issues as business and investment risks and opportunities
- We make the economic case for sustainable business and investment strategies; for integrating material ESG issues into investment decision-making
- We work with key capital markets players including stock exchanges, SEC, rating agencies, investment consultants

Ceres Networks



Ceres is a nonprofit organization advocates for sustainability leadership, working with investors and business to build a sustainable global economy

Investor Network

(INCR)

More than 120 institutional investors currently representing \$15 trillion in AUM

Company Network

More than 70 company members, with more than a third in Fortune 500

BICEP & Climate Declaration

More than 38 leading companies, and over 1,700 businesses across the US

Ceres Coalition

More than 130 organizations including sustainability leaders and public interest groups

Ceres Industry Teams



Food, Agriculture & Forests - Contacts: Brooke Barton, Senior Director, Water & Food Program; David Bennell, Director, Food & Capital Markets

Electric Power- Contact: Dan Bakal, Director, Electric Power Program

Financial Services - Contact: Veena Ramani, Senior Director, Corporate Program

Insurance - Contact: Cynthia McHale, Director, Insurance Program

Oil and Gas - Contacts: Andrew Logan, Director, Oil & Gas Program

Transportation - Contact: Carol Lee Rawn, Director, Transportation Program

Water Risk and Infrastructure - Contacts: Brooke Barton, Senior Program Director; Monika Freyman, Director, Water Program

Ceres Investor Network



- 125 members
- \$15 trillion AUM
- Members: Asset owners, Asset managers, Pension Funds, Endowments, Foundations
- Focused on climate and sustainability as investment risks + opportunities

Largest public pension funds in North America:

CALSTRS



CalPERS

Prominent asset managers & financial institutions:



BLACKROCK

SSGA
STATE STREET GLOBAL ADVISORS

 **Prudential**



Leaders in responsible/sustainable investing:

 **TRILLIUM**
ASSET MANAGEMENT

PAX
Pax World Mutual Funds

Calvert
INVESTMENTS

A UNIFI Company

generation_____

 **BOSTON COMMON**
ASSET MANAGEMENT, LLC

How We Work With Investors



The Ceres Investor Network provides opportunities for collaboration and leadership through:

- Working groups
- Investor statements
- Sign-on letters
- Corporate & policy engagement opportunities
- Key issue and industry expertise
- Information access and distribution
- Leading edge reports
- Webinars
- National and regional meetings
- International investor collaboration
- Investor Summit on Climate Change at the U.N.

Projects & Working Groups



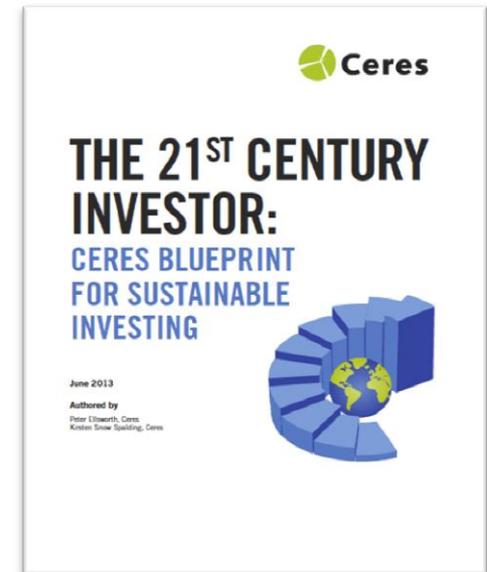
- **Investor Water Hub** supports investors around the evaluation and management of water risks across the portfolios.
- **International Collaboration (Global Investor Coalition)** supports international investor policy advocacy and best practices on climate change.
- **Investor Initiative on Sustainable Exchanges** advocates a global stock exchange listing standard for ESG reporting based on INCR proposal.
- **Low Carbon Clean Energy Working Group** supports members on managing carbon risk and seeking clean energy investments using *21st Century Investor Blueprint*.

21st Century Investor Blueprint



- Unprecedented ESG Risks & Opportunities
- Business Case for Sustainable Investing
- Fiduciary Duty & Sustainable Investing
- Key Steps to Integrate ESG Risks & Opportunities

Premise: Climate change and other key environmental, social and governance (ESG) factors can and do produce material investment risks and opportunities



10 Steps to Sustainable Investing



INVESTMENT GOVERNANCE

Step 1: Investment Beliefs

Step 2: Trustee Oversight

INVESTMENT PRACTICES

Step 3: Materiality

Step 4: Asset Allocation

Step 5: Investment Strategy

Step 6: Manager Selection

Step 7: Asset Classes

Step 8: Monitor Manager Performance

ASSET STEWARDSHIP

Step 9: Proxy Voting & Active Ownership

Step 10: Market & Policy Initiatives



Sustainable Investing



- Meeting the needs of current beneficiaries without compromising the needs of future beneficiaries; longer term perspective on risk and return
- Integrating material ESG risks and opportunities in the investment process
- Asset stewardship/active ownership/corporate engagement on ESG issues
- Consistent with Fiduciary Duty
- Can and should be integral to all investment strategies

Mega Trends: Global Risks & Opportunities



- **Climate Change** – Extreme weather events
 - Superstorm Sandy: \$60 billion in losses
 - 2012 US Drought: food security risks, Mississippi River shipping
 - Carbon asset risk / stranded assets
- **Population Growth** – 9 billion people will need food, water, energy and resources by 2050; growth of middle class
- **Human Rights + Worker Safety** – Human impacts of global supply chains (Bangladesh garment factory disasters, Foxconn)
- **Resource Depletion** – 2/3 of the world's population will live in water stressed regions by 2025; deforestation, over fishing, loss of arable land
- **Economic Globalization** – competition for resources/commodities
- **Connectivity + Communications** – social media, transparency, ESG awareness, everything is public

Key Ceres Climate-related initiatives



- **Carbon Asset Risk:** reducing energy transition risk to high carbon fuel producers, utilities & their investors
- **Clean Trillion:** supporting increased clean energy investment and deployment by investors & companies
- **Climate Risk Disclosure:** supporting investors in seeking better risk reporting by companies with material climate risk exposure
- **Corporate Engagement:** engaging companies in key sectors on climate & clean energy risks & opportunities
- **Water Risk Integration:** integrating water risk into corporate and investment decision-making

Climate Change Causes Multiple Risks for Companies & Investors



- Physical Risk
- Regulatory/Policy Risk
- Liability/ Litigation Risk
- Reputation/Competitive Risk
- Supply Chain Risk
- Stranded Asset Risk
- Water/Resource Scarcity Risks
- Systemic Economic Risk

The “Clean Trillion:” Closing the Clean Energy Investment Gap

- To limit global warming to below 2° C and avoid the worst effects of climate change, **the world needs to invest more than an *additional \$1 trillion per year*** in clean energy through 2050 – the “Clean Trillion.”
- Will require shifting capital away from high carbon fossil fuels and into clean energy, accelerating the energy transition, and doubling global clean energy investment by 2020
- Ceres/INCR work with investors, banks, electric utilities, energy and industrial companies, policymakers, the UN and NGOs to help build the Clean Trillion

The Low Carbon Economy Will Need To Be Financed The Debt Markets Will Play A Significant Role



The Emergence of Green Bonds



Green Bond Principles, 2014

Green Bond Principles, 2015

Green Bond Principles, 2016

Voluntary Process Guidelines for Issuing Green Bonds



16 June 2016



Investor Network on
CLIMATE RISK

a project of **Ceres**



A Statement of Investor Expectations for the Green Bond Market

Recent success in the development of the Green Bond market has elicited calls from the investment community to develop and adhere to clarity in standards and procedures. This document is intended to provide guidance to issuers of green bonds.

- Eligibility: General Criteria for Green Projects
- Initial Disclosures and Intended Use of Proceeds
- Reporting on Use of Proceeds and Project Impacts / Benefits
- Independent Assurance

Reporting on Use of Proceeds and Project Impacts/Benefits



We expect issuers to provide **annual updates** on the use of green bond proceeds for eligible projects and reports of the estimated impact or benefits of projects supported by the green bond financing.

The use of proceeds can be reported on a **project-by-project or aggregate basis**, and can be provided together with the issuer's impact report.

Issuers should communicate to investors, at least annually, information concerning the **beneficial climate, environmental and other impacts of their projects**.

Impact reports should be **publicly available and include expected results** according to estimates developed when projects are in the design, construction and/or implementation phase.

To make such reporting easy for investors to understand, a **simplified set of indicators concerning impact is recommended**. Where available, references to more detailed supporting documentation should be noted and made available if requested.

Signatories



Addenda Capital
Allianz SE
AXA Group
AXA Investment Management
BlackRock Inc.
Boston Common Asset Management
Breckinridge Capital Advisors
California State Teachers' Retirement System (CalSTRS)
Colonial First State
Community Capital Management
Connecticut Retirement Plans and Trust Funds
Employees' Retirement System of the State of Rhode Island
Everence
Mirova
New York State Comptroller, Thomas P. DiNapoli
North Carolina Retirement System
Pax World Investments
PIMCO
RBC Global Asset Management
Standish Mellon Asset Management
State Street Global Advisors
Treasurer, State of California
Trillium Asset Management
University of California
Walden Asset Management
Zurich Insurance Group

5 Essential Resources for Green Bonds



- 1) *The Green Bond Principles*: Do the bond issuer's projects and processes for selection, transparency and reporting generally conform to these basic principles recognized by most current green bond participants?
- 2) *The Investor Statement of Expectations for the Green Bond Market*, signed by 28 global investors: Does the proposed green bond align with these fundamental investor expectations concerning project eligibility, initial disclosures, impact reporting and independent assurance?
- 3) *The Barclays / MSCI Green Bond Index*: Does the proposed green bond issue satisfy the criteria to be included in this index, other than any minimum notional amount the index might require?
- 4) *The Climate Bonds Initiative*: Does the proposed green bond meet CBI's general pre- and post-issuance criteria, or its specific criteria for bonds used to finance projects that support solar, wind, water, geothermal, low carbon buildings, or low carbon transport?

5 Essential Resources for Green Bonds



5) A group of experienced green bond issuers and investors has developed best practices they recommend for reporting on environmental and climate impact. Prior to issuing a green bond, an issuer should ask: Does it have a plan for reporting the impact the proceeds are expected to have, consistent with this framework's core principles and recommendations?

<http://treasury.worldbank.org/cmd/pdf/InformationonImpactReporting.pdf>

These five resources offer an accessible and manageable starting point for issuers, investors and underwriters of green bonds to communicate using a common language.

A Framework for Impact Reporting



Green Bonds

Working Towards a Harmonized Framework for Impact Reporting

December 2015

Core Indicators for Measuring Impact for Energy Efficiency & Renewable Energy



A. Energy Efficiency

#1) Annual energy savings in MWh

#2) Annual GHG emissions reduced/avoided in tonnes of CO2 equivalent /a

Other Indicators e.g.,

- Annual Absolute (gross) GHG emissions from the project in tonnes of CO2 equivalent /a /b

B. Renewable Energy

#2) Annual GHG emissions reduced/avoided in tonnes of CO2 equivalent /a

#3) Annual renewable energy production in MWh

#4) Capacity of renewable energy plant(s) constructed or rehabilitated in MW

Other Indicators e.g.,

- Capacity of renewable energy plant(s) to be served by transmission systems (MW)
- Annual Absolute (gross) GHG emissions from the project in tonnes of CO2 equivalent /a /b

World Bank / IBRD Project Examples



Energy Efficiency

A project that improves energy efficiency in the industrial, commercial and municipal sectors in Ukraine will result in energy saving of nearly 7 million MWh per year – the equivalent of 517,000 homes' energy use for a year.¹



Forestry

A project to improve forest management in China will result in 132,600 hectares of forests restored or re/afforested and a 20% increase in vegetative cover plus improve species diversity. It will also train 216,000 farmers in forest management.



Renewable Energy

A geothermal energy project in Indonesia will add 150 MW of renewable energy by 2018. The project avoids 1.1 million tons of CO2 eq. annually – equivalent to taking 232,000 passenger vehicles off the road each year.¹

Transport

A public transport project in Ecuador will increase passengers by 369,000 people per day and reduce travel time by 40%. It will provide affordable, safe, reliable transportation for all with special focus on the disabled.

Climate Resilient Infrastructure

A project to increase resilience of communities to the impacts of climate change in China will benefit 6.6 million people and provide 9,500 km² of flood protection in rural and urban areas.



Water

A project to improve sustainable water management in Brazil will benefit 2.6 million people and provide 164,000 people with improved sanitation improving quality of life and environmental preservation and conservation.

Climate Focused Mitigation & Adaptation Projects



Examples of climate change mitigation projects:

- Solar and wind installations
- Funding for new technologies that permit significant reductions in greenhouse gas emissions
- Rehabilitation of power plants and transmission facilities to reduce greenhouse gas emissions
- Greater efficiency in transportation, including fuel switching and mass transport
- Waste management (methane emission) and construction of energy-efficient buildings
- Carbon reduction through reforestation and avoided deforestation

Examples of climate change adaptation projects:

- Protection against flooding (including reforestation and watershed management)
- Food security improvement and implementing stress-resilient agricultural systems (which slow down deforestation)
- Sustainable forest management and avoided deforestation.

Examples of Green Projects Financed by the World Bank in Mexico



- **Forests and Climate Change:** The project supports the improvement of Mexico's incentive programs for community forestry and forest-based environmental services
- **Integrated Energy Services:** The project supports use of renewable energy, mainly photovoltaic (solar) systems and some wind generators together with the regulatory and technical support needed to develop a sustainable market.
- **Modernization of the National Meteorological Service for Improved Climate Adaptation:** The project supports improvements to the government's observational infrastructure, data management and processing, and climate modeling and forecasting tools.
- **Sustainable Rural Development Project:** This project supports environmentally-friendly technologies with a focus on energy efficiency, renewable energy, waste management, and biomass-to-energy conversion.
- **Urban Transport Transformation Program:** The project aims to help transform urban transportation efficiency in Mexican cities and reduce its transport-related carbon footprint.

Source: The World Bank

Other Examples of Green Projects



Belarus - Biomass District Heating: The project aims to replace the use of natural gas with a local renewable fuel source (wood biomass: wood chips and wood wastes) supplied by certified forestry companies in 13 district heating systems.

Belize - Climate Resilient Infrastructure: The project supports rehabilitation and reconstruction of the country's road infrastructure to address increased flood risk.

Brazil - Espirito Santo Integrated Sustainable Water Management Project: The Project will support improved drinking and coastal water quality in the State's capital and the river basins of the broader metropolitan area.

Brazil - Federal Integrated Water Sector: The project follows a long engagement in support of Brazil's federal programs for water resources management.

Brazil - Greening Rio de Janeiro Urban Rail Transit: The system is expected to especially serve the poor populations who rely on public transportation by reducing travel time, in particular when switching from inefficient bus services.

Source: The World Bank

Another Example: Impact Reporting by KfW



Green Bonds – Made by KfW

Impact of EUR 1 million investment:	800 tons	of GHG emission reductions (CO ₂ -equivalents) (per annum)
	69,000 EUR	of savings for energy imports to Germany and in fossil fuel costs (per annum)
	22 jobs	created and/or secured (person years)
	94,000 EUR	of savings in external costs: e.g. by avoiding environmental and health damage (per annum)

On the basis of the estimated environmental and social impact, KfW's green bond issuances in 2016 contribute to the prevention of approximately 2,243,914 tons of greenhouse gas (GHG) emissions per annum. This corresponds roughly to GHG-reducing effects of a forest larger than New York City, London, Tokyo and Berlin together.

Green Bonds Issued by Mexican Entities



Nacional Financiera (Nafin)

USD 500 million; 5 Year Tenor

Use of proceeds: renewable energy (9 wind farms in Oaxaca, Nuevo Leon and Baja California)

USD 108 million; 7 Year Tenor

Use of proceeds: renewable energy (onshore wind projects and small run-of-river hydro power plants)

Mexico City Airport Trust

USD 2 billion; 10 and 30 Year

Use of proceeds: Mixed (energy efficiency improvements, renewable energy, waste and water management, adaptation)

Mexico City

USD 50 million; 5 Year Tenor

Use of proceeds: water, wastewater, energy efficient public lighting and subway infrastructure

Source: Climate Bonds Initiative

Green Water Bonds: Catalyzing a Transition to Sustainable Water Infrastructure

The critical need to fix our nation's public water infrastructure presents an unprecedented opportunity to influence the development of sustainable water systems through resilient and equitable solutions.



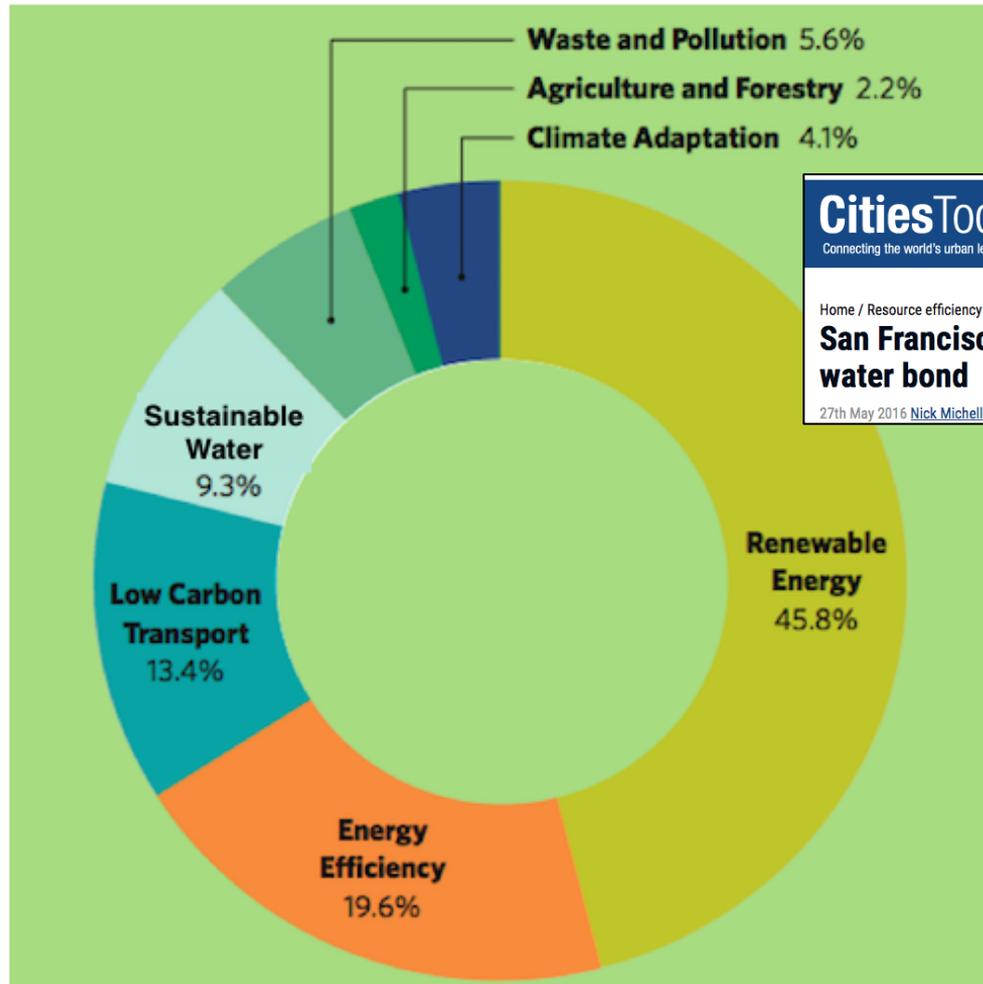
Water Related Green Bonds



WORLD
RESOURCES
INSTITUTE



Green bond allocations



CitiesToday
Connecting the world's urban leaders

HOME ABOUT SUBSCRIBE KNOWLEDGE HUB 20-20 EVE

Home / Resource efficiency
San Francisco issues world's first climate-certified water bond
27th May 2016 Nick Michell

Resource:

UNC
UNIVERSITY OF NORTH CAROLINA

Ceres

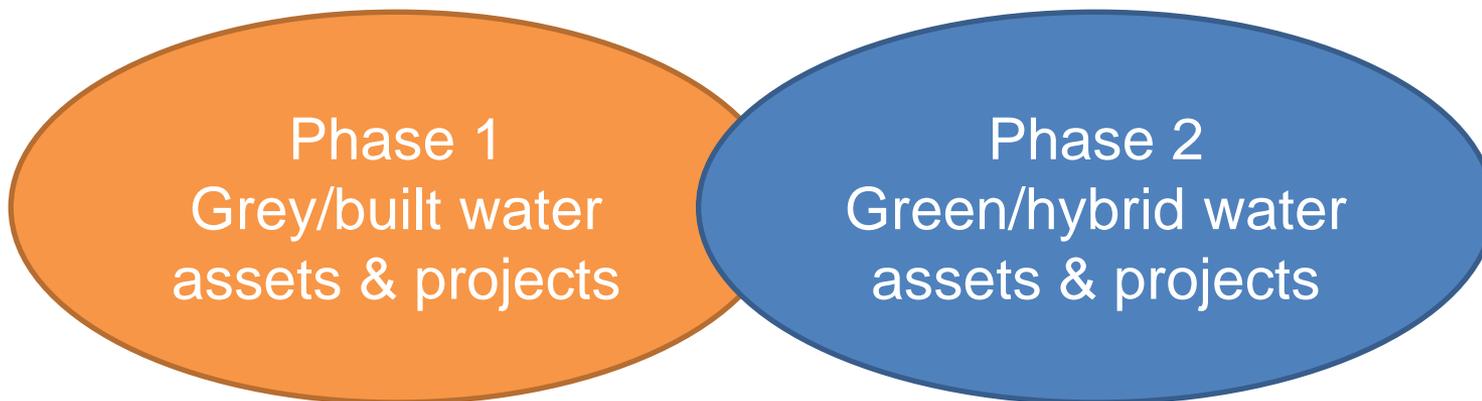
ASSESSING WATER SYSTEM REVENUE RISK:
Considerations for Market Analysts

August 2013

Authored by
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Adopting a Water Climate Bond Standard

- Working with an international team of Green Bond and water experts, Ceres and the Climate Bonds Initiative launched a Water Climate Bond Standard in 2016
- CBS Water Criteria capture eligible assets and projects relating to freshwater and waste water capture, treatment and distribution (including sewage systems, water treatment plants, flood defenses, distribution systems etc.)



What's Your Green Bond Story?



Green bond issuers have to tell investors a story

- how the proceeds will be used
- what the benefits will be
- how the impacts will be reported

Those stories need to be clear and credible.

They also need to conform to a body of understandable and recognized best practices.

Thank you. Are there any questions?



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