

NATURAL CAPITAL RISK & OPPORTUNITIES

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WHAT'S THE PROBLEM?



Natural Capital underpins economic activity with companies dependent on resources such as water and raw materials

3bn more middle class consumers by 2030

147% increase in real commodity prices since 2000

80% rise in steel demand projected 2010-2030

\$1 trillion spent annually on resource subsidies



"Over the next quarter century, the rise of three billion more middle-class consumers will strain natural resources. The race is on to boost resource supplies, overhaul their management, and change the game with new technologies."

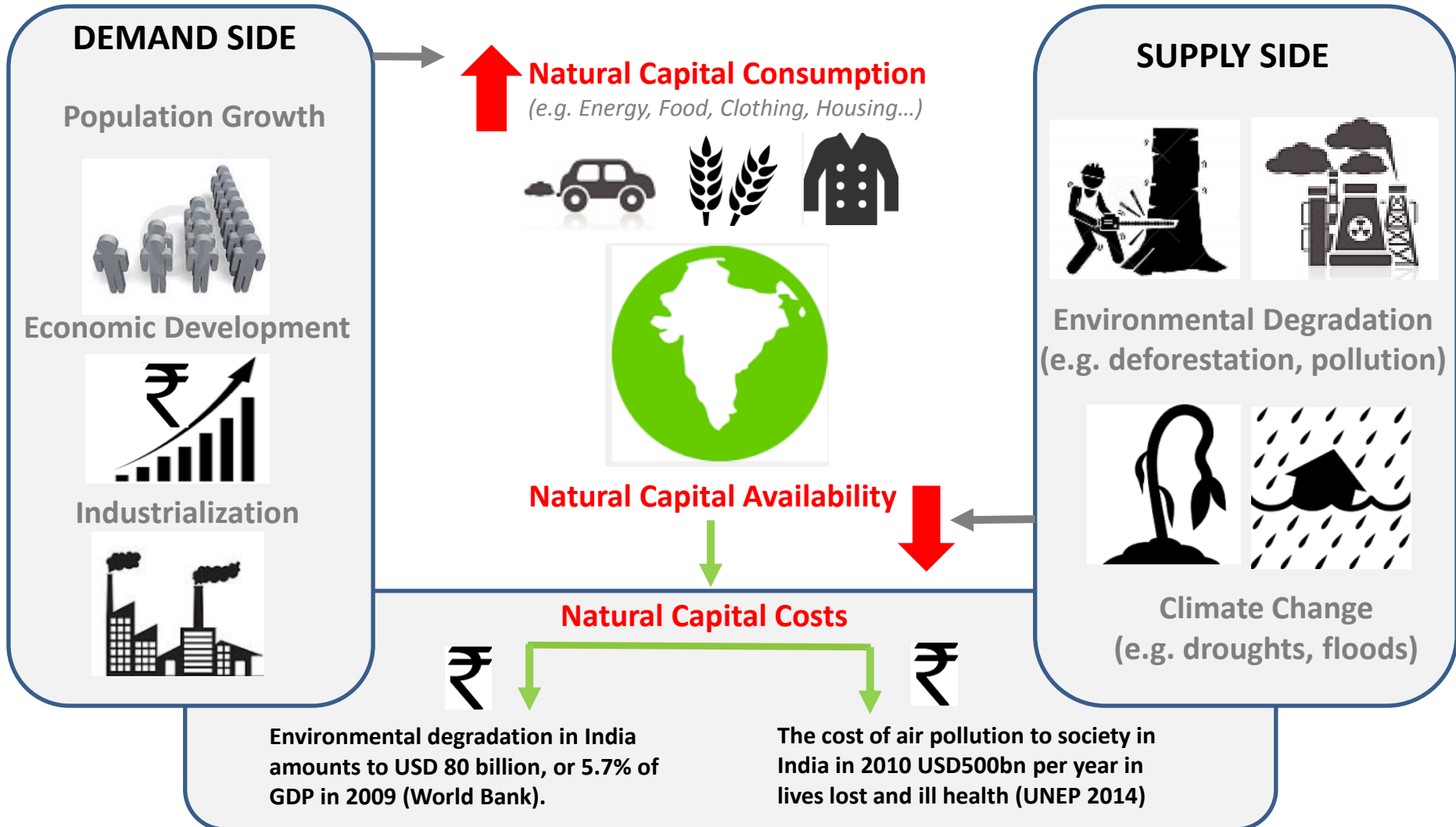
McKinsey, The Resource Revolution



Trucost data allows companies and investors to price risks relating to natural resource constraints and climate change

NATURAL CAPITAL

DEMAND & SUPPLY SIDE PRESSURES



WHAT DOES THIS MEAN FOR THE FINANCIAL SECTOR?



Universal Ownership
Why environmental externalities matter to institutional investors

UNEP Finance Initiative
Innovative Financing for sustainability

PRI

The PRI is an investor initiative in partnership with UNEP Finance Initiative and the UN Global Compact.



Natural Capital Risk Exposure of the Financial Sector in Brazil



PREPARED BY TRUCOST
January 2015



Natural Capital Risk Exposure of the Financial Sector in India



PREPARED BY TRUCOST
October 2015



NATURAL CAPITAL AND COMPANIES



\$2.2tn

Environmental damage caused by world's largest 3,000 companies

>50%

Proportion of company earnings that could be at risk from environmental costs

KEY FINDINGS - BRAZIL



Natural Capital Risk Exposure
of the Financial Sector in Brazil



- Unpriced natural capital costs of companies
R\$1,646bn
- Banks are most exposed through financing of **cattle ranching, fishing, food and beverages and agriculture**
- Pension funds are most exposed through investments in **food and beverage companies**
- The natural capital risk exposure of financial institutions can **vary significantly**

DIFFERENT SECTORS FACE DIFFERENT RISKS



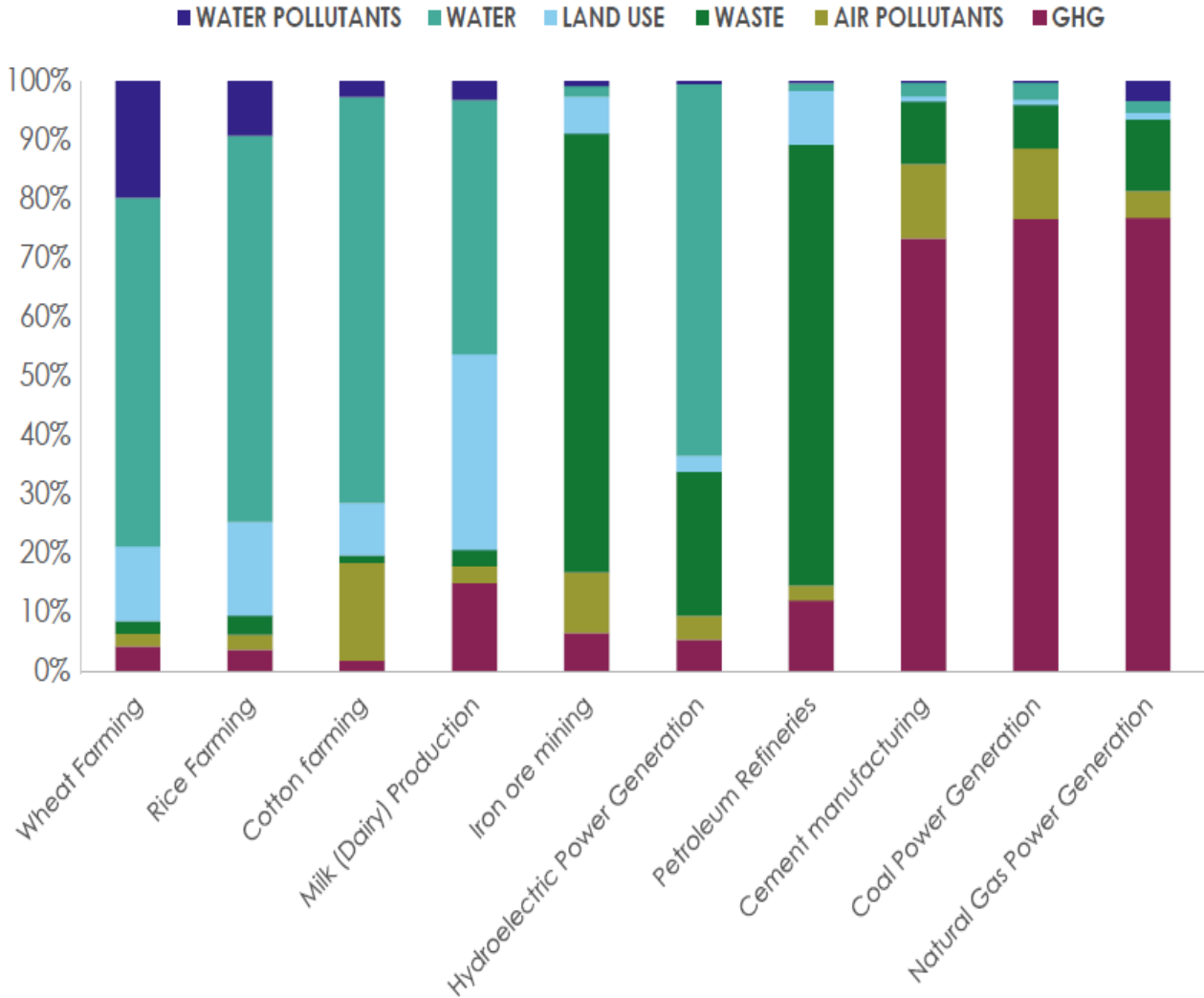
EMERGING MARKETS DIALOGUE



Natural Capital Risk Exposure of the Financial Sector in India

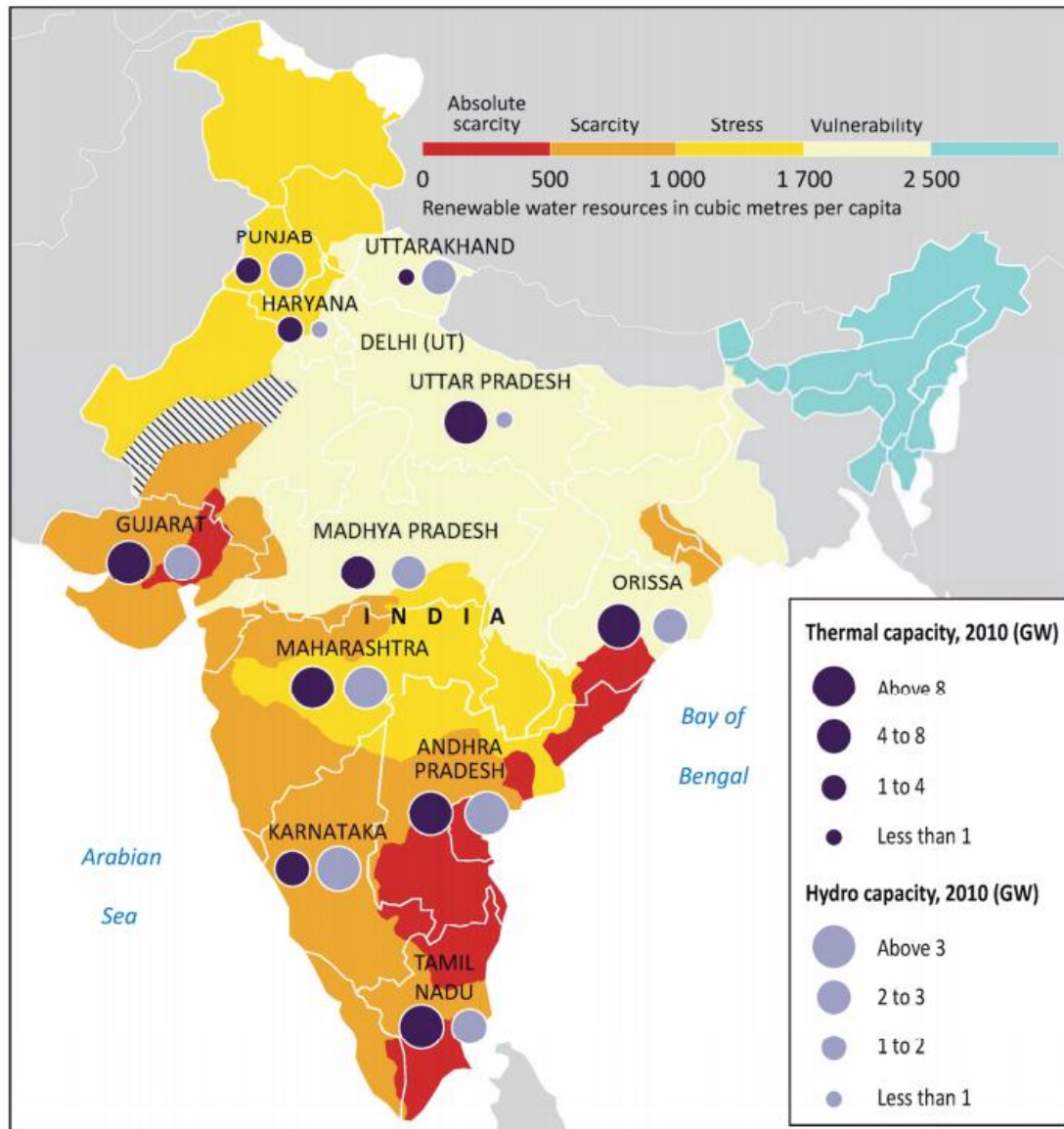


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Source: Trucost

INDIA POWER & WATER – REGIONAL RISK



Almost half of India's coal-fired power generation is located in regions facing severe water stress (19% northern and 28% western regions).

Power generation accounts for 9% of commercial bank lending in India, driven by coal – 61% of the total installed domestic power generation capacity.

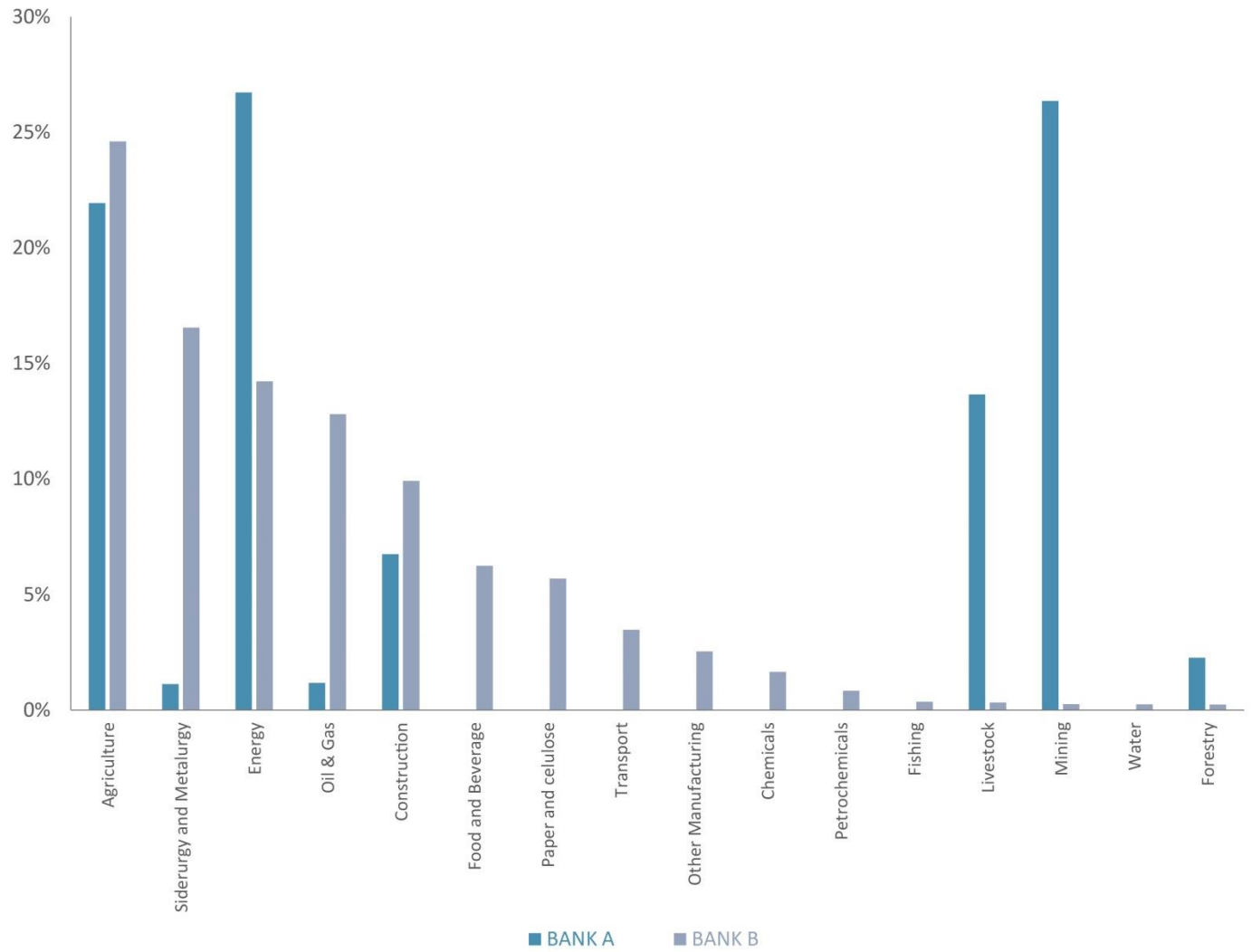
The NCI of 2.6x is driven by **GHG emissions and air pollution** (89% of total natural capital impacts)

BRAZIL - CREDIT EXPOSURE OF TWO BANKS

EMERGING MARKETS DIALOGUE

Natural Capital Risk Exposure of the Financial Sector in Brazil

PREPARED BY TRUCOST January 2015



WHAT CAN INVESTORS DO?

BUILD RESILIENCE



- **TOP DOWN: QUANTIFY PORTFOLIO NATURAL CAPITAL EXPOSURE:** Map portfolio to sectoral natural capital intensities to identify exposure hotspots
- **BOTTOM UP: DEEP DIVE ON SECTOR & COMPANY SPECIFIC HOTSPOTS:** Integrate natural capital risks and opportunities into valuation models
- **DUE DILIGENCE:** Acquire additional information for high risk sectors e.g. agriculture, infrastructure, power
- **CAPACITY BUILDING:** FIs should invest in natural capital training in order to build capacity for risk managers to identify and quantify exposure to natural capital risks. This should be beyond ESG to help them quantify NC value, impact and risk.
- **INTEGRATE:** Sector specific natural capital considerations should be included into credit analysis, particularly long duration loans & . Sensitivity analysis with shadow carbon pricing.
- **MITIGATE/ACCOUNT MANAGEMENT:** long term timeframes and relationships offers the opportunity to educate clients on sustainable resource management and provide financing for new projects e.g. energy efficiency, sustainable agriculture etc.
- **RURAL DEVELOPMENTS BANKS:** High exposure = high opportunity

WHAT CAN INVESTORS DO? CREATE OPPORTUNITIES



- **LENDING FOR SUSTAINABILITY IMPROVEMENTS:** e.g. Energy efficiency, Capex for implementation of sustainable cotton certification etc
- **LENDING TO SECTORS WHICH BENEFIT:** e.g. Renewable Energy, Low-Carbon Transport, Infrastructure and Sustainable Farming.
- **PRODUCT INNOVATION:** consider innovative financing instruments such as green bonds to find projects with a net positive impact
- **GREEN BONDS:** invest in green bonds

GREEN BONDS



The image shows the cover of a consultation paper. The background is a dark green with a faint, semi-transparent financial chart showing candlesticks and a line graph. The text is white and green. At the top, there is a table with columns for 'Change', 'Vol', 'Premium', and 'Volume'. Below the table, the title 'A PROCESS FOR RATING THE GREEN IMPACT OF GREEN BONDS' is written in large, bold, white capital letters. Underneath the title, it says 'A consultation paper by S&P Dow Jones Indices and Trucost'. At the bottom left, the date 'MARCH 2016' is printed. At the bottom center, there are two logos: the S&P Dow Jones Indices logo (a red circle with a white 'S' and 'D' and the text 'S&P DOW JONES INDICES' and 'McGraw Hill Financial') and the Trucost logo (a red square with a white 'T' and the text 'TRUCOST').

Change	Vol	Premium	Volume
-128.3	-0.68%		21114
-62	-0.33%	-64	210
-68	-0.36%	-75	
-92	-0.50%		

**A PROCESS FOR RATING
THE GREEN IMPACT OF
GREEN BONDS**

A consultation paper by S&P Dow
Jones Indices and Trucost

MARCH 2016

**S&P DOW JONES
INDICES**
McGraw Hill Financial

TRUCOST

Green bonds are defined by the Green Bond Principles as fixed-income instruments that fund projects promoting climate change mitigation or other environmental sustainability purposes.

Green bonds market experiencing exponential growth reaching \$43bn in 2015

Green bonds are being encouraged and even given preferential treatment by regulators across the globe, especially China.

THREE LEVELS OF GREEN BOND IMPACT ASSESSMENT



Portfolio

Issuer
(company group level)

Project/
Bond

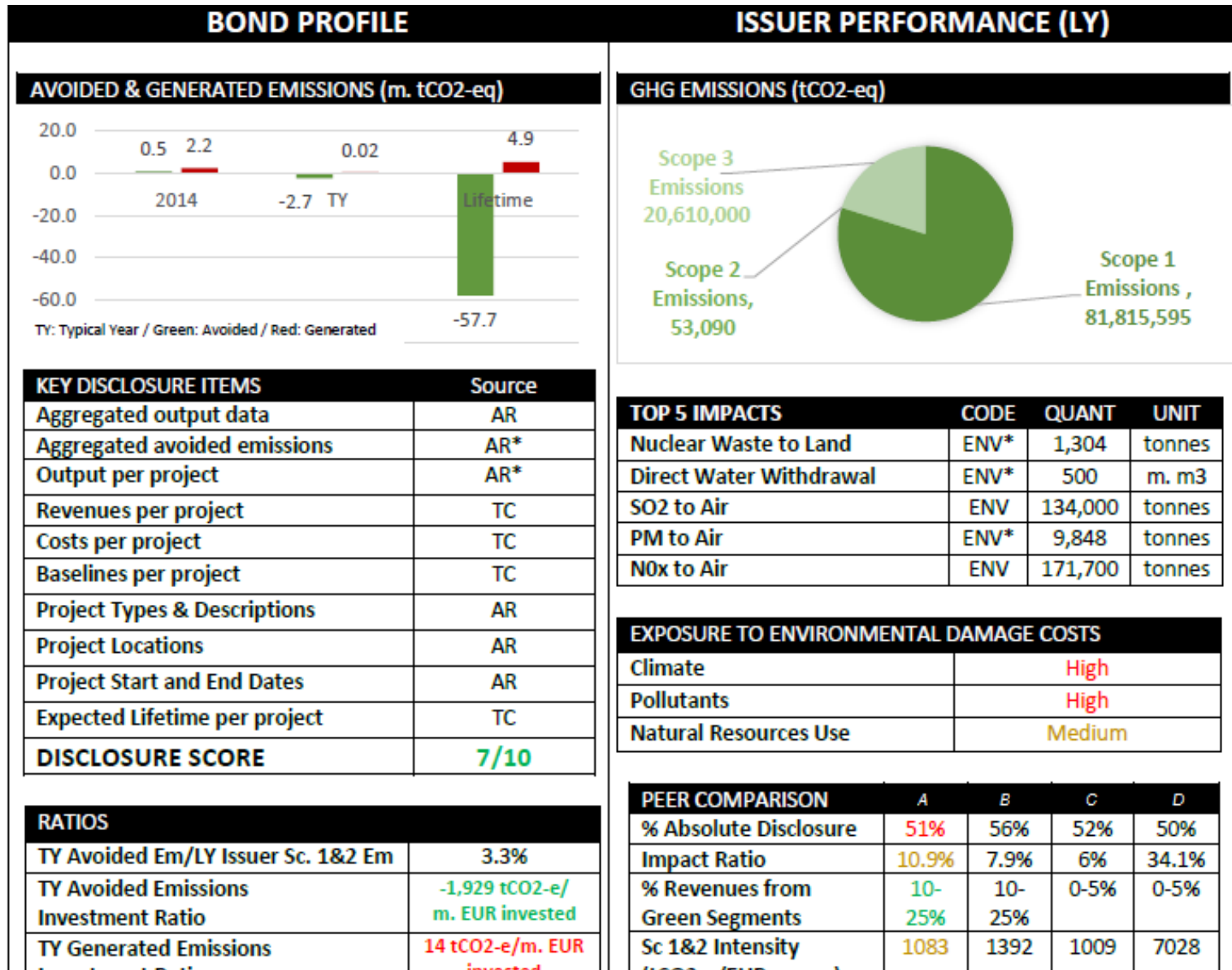
Key performance indicators

- Portfolio emissions
- Share of revenues/production from green/brown activities
- Emissions savings per \$bn invested
- Externality (\$) benefit per \$bn invested

- Direct emissions (Scope 1)
- Indirect emissions from suppliers (Scope 2 & 3 upstream)
- Share of revenues/production from green/brown activities
- Total Carbon Footprint (Direct + First Tier Indirect)
- Env. Damage Costs relative to Revenue (Impact Ratio) etc.

- Upstream project emissions (e.g. from the construction of a rail infrastructure by the company or suppliers)
- Operational project emissions (e.g. from the maintenance of a wind farm)
- Carbon Net Benefit Indicator
- Carbon Avoided/Generated Emissions Ratio etc.





EXAMPLE OF A GB INVESTOR BRIEF



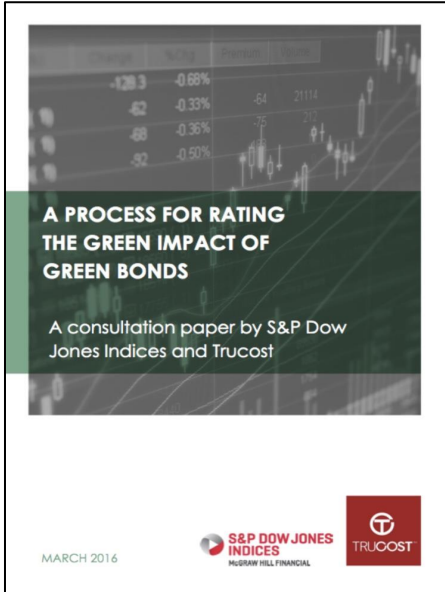
PORTFOLIO IMPACT



Climate Investments Portfolios save x tonnes carbon per \$mn invested

Your Investments	Per project carbon savings	Carbon savings attributed to your investment	Carbon savings attributed to your portfolio
 <p>Project 1: Solar Power Station A utility scale solar PV power plant.</p>	Carbon Savings: 800,000 tonnes pa	Carbon Savings: X tonnes per \$mn	
 <p>Project 2: Wind Farm Largest single stage wind farm in the southern hemisphere.</p>	Carbon Savings: 700,000 tonnes pa	Carbon Savings: X tonnes per \$mn	
 <p>Project 3,4,5 etc... xxxx</p>	Carbon Savings: X tonnes pa	Carbon Savings: X tonnes per \$mn	

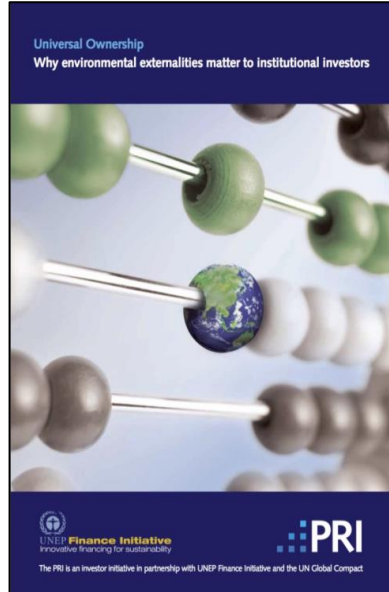


QUESTIONS?



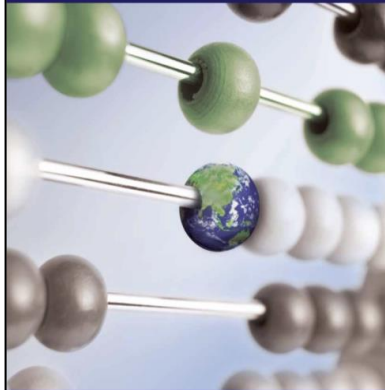
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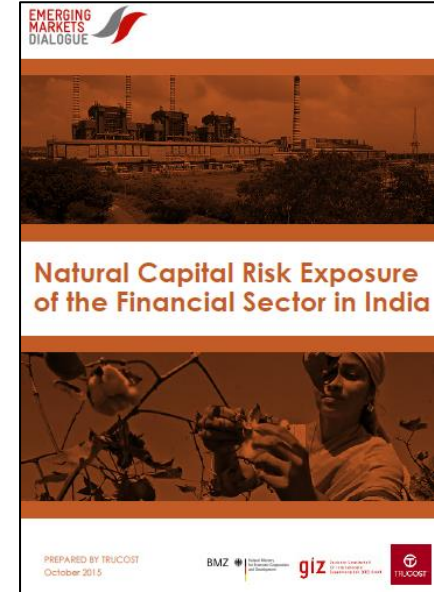
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