SEVENTH ANNUAL PRACTICE FORUM

Unlocking Enterprise Value through Embedded Sustainability

Friday, March 15
9:00am - 5:00pm ET
NYU Stern School of Business & Virtual
Thank you to our sponsors

Deloitte.

Nespresso®

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Glenmeade

Fortune
Opening Remarks

ALAN MURRAY
CEO
Fortune Media
As a longstanding partner of New York University Stern Center for Sustainable Business, Nespresso is thrilled to serve the below blends for today's event during breakfast, lunch and coffee breaks. All capsules will be recycled through our NYC curbside recycling program.

Learn more on our website or by asking one of our baristas.

**ROASTED HAZELNUT**
Rich & Nutty
7.77 oz | Coffee
The rich, caramelized flavor of roasted hazelnut delights with sweet, velvety Arabica beans.

**COSTA RICA**
Malty & Sweet
5.07 oz | Gran Lungo
The one-of-a-kind process of fermentation in hot-spring waters brings a balanced, clean taste.

**ALTISSIO**
Full-Bodied & Creamy
1.35 oz | Espresso
Bold taste cloaked in a creamy cereal note, full-bodied with a thick crema full of roasty notes.

**INTENSO**
Deep & Dense
7.77 oz | Coffee
Brown sugar, roasted notes. An intense dark with a think coffee crema and a distinct aftertaste.
WiFi and Virtual Program

WiFi: nyuguest
Username: csbforum959
Password: x?iUØHsD
CSB Research Roundup

TENSIE WHELAN
Founding Director
NYU Stern CSB
Unlocking Enterprise Value Through Embedded Sustainability

Professor Tensie Whelan
Founding Director
NYU Stern CSB
NYU Stern Center for Sustainable Business

Unleash the business value of sustainability

&

the transformative potential of business
to

solve societal challenges at speed and scale
Motivating leaders to shape a new business paradigm

<table>
<thead>
<tr>
<th>Innovation in Education</th>
<th>Practical Research</th>
<th>Business Breakthroughs</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Top 10 specialization among MBA students with 30+ offered classes</td>
<td>- Return on Sustainability Investment™</td>
<td>- Research partnerships</td>
</tr>
<tr>
<td>- Fellowships/internships</td>
<td>- Sustainable Market Share Index™</td>
<td>- Bespoke executive trainings</td>
</tr>
<tr>
<td>- Experiential learning</td>
<td>- Invest NYC SDG</td>
<td>- Practice forum</td>
</tr>
<tr>
<td>- Executive education</td>
<td>- Private Equity Responsible Investing</td>
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</tr>
</tbody>
</table>

NYU Stern Center for Sustainable Business
The Latest and Greatest: CSB Research in 2023/24

- Growing ESG Expertise on Boards
- Consumers Stay the Course on Sustainability
- The ROSI of Decarbonization is Positive
- Private Equity and Driving ROSI
- Decarbonization and Food Finance initiatives
- New Academic Study on the Correlation between Sustainability and Financial Performance
Fortune 100 Board Member
ESG Expertise Improving
But Still Lacking

Researchers:
Tensie Whelan
Ozair Arfi, MBA Candidate
Lauren Marx, Undergraduate
Boards Need Expertise in Material Sustainability Issues

- Certain sustainability issues are material to a company’s performance
- Increasingly, boards are being held accountable for sustainability topics (reporting, compliance, greenwashing, societal impacts)
- Boards need ESG background and training to ask the right questions
- Boards need committees to help focus on the right ESG issues
29% of 1188 directors had relevant ESG credentials in 2018
- 21% had S experience
- 6% each for E and G

43% of 1161 board members have relevant ESG credentials in 2023!
- 13% E credentials
- 15% G credentials
- 21% S credentials

In 2018, 22 boards had ESG committees. In 2023, 89 had ESG committees
- In 2018, 24% of men had ESG credentials; 36% in 2023
- In 2018 40% of women had ESG credentials in 2018; 56% in 2023
  (Female board members 25% of total in 2018; 34% in 2023)
Highlighted Changes:

**S credentials:**
- DEI credentials increased from 60 to 108 board members – the largest ESG area
- Nonprofit C-Suite executives from 9 to 24

**G credentials:**
- Accounting oversight increased from 31 to 71
- Cyber security increased from 8 to 50

**E credentials:**
- Sustainable business increased from 10 to 49
- Renewable energy from 14 to 43
- Climate change increased from 3 to 22
- ESG investing from 5 to 15
- Water stayed at 2!
### Fortune 100 ESG Board Credentials by Category

<table>
<thead>
<tr>
<th>S Categories</th>
<th>2023 % with Relevant Credentials</th>
<th>2018 % with Relevant Credentials</th>
<th>E Categories</th>
<th>2023 % with Relevant Credentials</th>
<th>2018 % with Relevant Credentials</th>
<th>G Categories</th>
<th>2023 % with Relevant Credentials</th>
<th>2018 % with Relevant Credentials</th>
</tr>
</thead>
<tbody>
<tr>
<td>Workplace diversity</td>
<td>9.30%</td>
<td>5.05%</td>
<td>Sustainable business</td>
<td>4.22%</td>
<td>0.84%</td>
<td>Accounting oversight/experts</td>
<td>6.1%</td>
<td>2.6%</td>
</tr>
<tr>
<td>Economic/community development</td>
<td>2.41%</td>
<td>1.09%</td>
<td>Renewable Energy</td>
<td>3.70%</td>
<td>1.18%</td>
<td>Cyber/telecomm security</td>
<td>4.3%</td>
<td>0.7%</td>
</tr>
<tr>
<td>Health challenges/Advocacy</td>
<td>2.07%</td>
<td>1.85%</td>
<td>Climate</td>
<td>1.89%</td>
<td>0.25%</td>
<td>Governance</td>
<td>2.5%</td>
<td>0.2%</td>
</tr>
<tr>
<td>Nonprofit C-Suite</td>
<td>2.07%</td>
<td>0.76%</td>
<td>Conservation/nature</td>
<td>1.21%</td>
<td>1.18%</td>
<td>Risk</td>
<td>0.9%</td>
<td>0.4%</td>
</tr>
<tr>
<td>CSR/ESG</td>
<td>1.81%</td>
<td>1.52%</td>
<td>Environmental protection</td>
<td>1.21%</td>
<td>0.51%</td>
<td>Regulator body</td>
<td>0.8%</td>
<td>1.0%</td>
</tr>
<tr>
<td>Health care</td>
<td>0.78%</td>
<td>3.45%</td>
<td>ESG investing</td>
<td>0.69%</td>
<td>0.34%</td>
<td>Fiduciary/director responsibility</td>
<td>0.7%</td>
<td>0.3%</td>
</tr>
<tr>
<td>Sustainable Development</td>
<td>0.78%</td>
<td>0.51%</td>
<td>Water</td>
<td>0.17%</td>
<td>0.17%</td>
<td>Corporate ethics/corruption/professional</td>
<td>0.2%</td>
<td>0.3%</td>
</tr>
<tr>
<td>Civil and human rights</td>
<td>0.60%</td>
<td>1.52%</td>
<td>Environmental law</td>
<td>0.09%</td>
<td>0.51%</td>
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<tr>
<td>Labor Relations</td>
<td>0.60%</td>
<td>1.01%</td>
<td>Sustainable development</td>
<td>0.00%</td>
<td>0.84%</td>
<td></td>
<td></td>
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<tr>
<td>ESG investing</td>
<td>0.60%</td>
<td>0.08%</td>
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<tr>
<td>Youth</td>
<td>0.26%</td>
<td>1.18%</td>
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<tr>
<td>Philanthropy</td>
<td>0.17%</td>
<td>0.76%</td>
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<tr>
<td>Public Policy</td>
<td>0.17%</td>
<td>0.34%</td>
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<tr>
<td>Affordable Housing</td>
<td>0.17%</td>
<td>0.25%</td>
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<tr>
<td>Adult education</td>
<td>0.00%</td>
<td>0.76%</td>
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<tr>
<td>Media/arts</td>
<td>0.00%</td>
<td>0.34%</td>
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<tr>
<td>Nutrition</td>
<td>0.00%</td>
<td>0.17%</td>
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<td></td>
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<tr>
<td>Workplace safety</td>
<td>0.00%</td>
<td>0.08%</td>
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</table>
Sector Analysis

**Highest ESG** relevant representation found in:

- Materials (83%)
- Telecommunications Services (65%)
- Consumer: Food, Beverage and Tobacco (61%)
- Consumer Staples: Household & Personal Products (52%)

**Lowest ESG** relevant representation found in:

- Utilities (22%)
- Communication Services; Media & Entertainment (23%)
- Consumer Discretionary: Consumer Durables & Apparel (29%)
- Financials: Insurance (30%)
But Do the Boards Have the “Right” ESG Credentials? A Look at the Energy Sector (124 board members)

37 board members with “E” credentials
- 21 with credentials in renewable energy
- 7 in sustainable business
- Only ONE has expertise in climate and only ONE in ESG investing

18 board members have “S” credentials
- 8 have diversity credentials
- ONE in labor relations
- ZERO board members with credentials in workplace safety

9 board members have “G” credentials
- Primarily in accounting oversight and governance broadly
- Two in cybersecurity and one in ethics
Two Low-Credentialed Companies and ESG Exposure

**Enterprise Products** (a midstream energy services company)
- Only one ESG-credentialed board member of 14 (expertise in renewables and governance). It has an ESG committee.
- Website covers energy “addition” vs. energy transition and its own GhG emissions have increased. No evidence of planning for the low carbon transition.

**The StoneX Group** (financial services firm that manages commodity trading -- agriculture, metals, fertilizer, carbon, and risk management for clients)
- Has one ESG-credentialed board of nine (employee relations). Has an ESG committee.
- Natural resource based commodities are under immense strain from both environmental (climate change, water scarcity) and social (human rights violation, labor exploitation, negative health impacts) causes. Carbon and environmental market solutions now being offered.
Does the Lack of ESG Credentials Matter? An Instructive Case

**McKesson:**

Successfully sued as contributing to the opioid crisis by various states, and has material environmental (energy, materials, water), social (access to medicines, ethical clinical trials), and governance (misleading advertising, doctor “incentives”) issues.

In 2018 had NO board members with relevant ESG credentials and NO ESG committee.

In 2023:

- Has an ESG committee
- 2 members with **E** credentials (renewable energy and sustainable business)
- 3 with **S** credentials (in workplace diversity, health care advocacy and civil rights)
- 3 with **G** credentials (telecommunications security, accounting, and corporate law)
Liberty Mutual Board ESG Maturation

Financially material climate risk exists and is growing for property and casualty insurance

In 2018, Liberty Mutual had no board members with climate credentials, though two were affiliated with energy companies. No ESG committee.

In 2023:

- Three board members with climate, low-carbon transition and renewable energy credentials
- Two board members with social credentials in sustainable business and health care advocacy
- No board members with governance credentials (the lack of cybersecurity expertise stands out)
- Now has an ESG committee
Principles of Good Board Sustainability Governance

- Board credentials and training must include the material ESG issues confronting the sector
- Sustainability/ESG committee is a must
- Nominating, audit/risk, comp, etc should include relevant ESG topics
- Management should engage the board in understanding the upside opportunities and downside risks associated with material ESG issues
- Management and the board should engage on embedded sustainability strategy and ROSI KPIs in addition to reporting and compliance
Consumer Purchasing of Sustainability-Marketed Products Annual Review

Randi Kronthal-Sacco
Circana
Sustainable Market Share Index™: 2022 Market Share

Sustainability-marketed products continues to grow share.

<table>
<thead>
<tr>
<th>Year</th>
<th>Annual Share of Sustainability-Marketed Products</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td>13.70%</td>
</tr>
<tr>
<td>2019</td>
<td>16.10%</td>
</tr>
<tr>
<td>2020</td>
<td>16.80%</td>
</tr>
<tr>
<td>2021</td>
<td>17.00%</td>
</tr>
<tr>
<td>2022</td>
<td>17.30%</td>
</tr>
</tbody>
</table>
Sustainable Market Share Index™: Price Premiums

Recent **price increases** on **conventionally marketed products** reduced the price premium between sustainability-marketed products and their conventional counterparts.

*Weighted by $ Sustainable Sales of categories examined; analysis excluded store brand/private label*
Across all categories studied, green chemistry-marketed products account for 28.8% share of market ($) in 2022, up from 14.3% in 2019.
Green Chemistry Market Share by Category

Floor Cleaner and the Personal Care categories (suntan, soap, skincare) made significant inroads from 2019 to 2022. All categories grew green chemistry shares of their respective categories, with the exception of HH Cleaner and Autowax which remained essentially flat vs 2019.
Legacy Products to Greener Chemistry; Embraced by All Demographics

- $3.4B of conventionally-marketed products in 2019 have converted to greener chemistry approaches and were marked as Green Chemistry in 2022.

- Consumers of all demographics (age, income, education) are purchasing green chemistry products. No real under-indexing by cohort.
The Return on Sustainability Investment (ROSI™) and Decarbonization Strategies

Researchers:
Chisara Ehiemere
Elyse Douglas
Divya Chandra
Beverly Teng

Funders: Commonwealth Fund, PwC, Investindustrial
By embedding sustainability risk and opportunities within core business strategy, the return on investment in sustainable practices can be quantified, delivering the possibility of both financial value and positive societal impact.
Identify Material ESG Issues and Strategies

Identify material sustainability challenges, (referencing frameworks such as SASB and GRI) and how the business is addressing associated risks and/or opportunities.

Assess Practices

Determine which practices have been implemented to address sustainability strategies.

Define Benefits

Define the types of economic benefits that could be expected from the changed practices through the ROSI mediating factors.

Quantify Benefits

Estimate the magnitude of those benefits and when they could be realized.

Monetize

Translate the benefits into economic value, stress test, and then forecast ROI.
Our ROSI™ Partners

NYU Stern CSB has collaborated with corporate alliances and more than 30 research partners to date on building and implementing ROSI™.
Healthcare Decarbonization Research
CSB developed a decarbonization framework for healthcare delivery systems utilizing the Return on Sustainability Investment (ROSI™) Framework and Methodology to address the 8.5% of total U.S. GHG emissions that come from Healthcare. The project produced the following:

1. **A strategy map and monetization framework** to support Decarbonization in Healthcare Delivery Systems including new research and analysis to aid in increasing the rate of adoption of decarbonization practices by highlighting the financial implications of the tangible and intangible benefits and prioritizing these in matrices.

2. **Open source tools** that hospitals of all sizes can use for calculations for a subset of decarbonization practices.

3. **Case studies** that highlight some of the monetization processes for a subset of decarbonization practices.
CSB identified the **following decarbonization strategies and enablers** that are being used by Healthcare Delivery Systems and developed monetization metrics and tools to support the strategies:
# Decarbonization Framework - Critical Enablers

These three enablers help Healthcare Delivery Systems speed the adoption of decarbonization practices and ensure that they are maintained over time.

<table>
<thead>
<tr>
<th>Leadership</th>
<th>Financing</th>
<th>Education</th>
</tr>
</thead>
<tbody>
<tr>
<td>● Setting decarbonizing goals&lt;sup&gt;1&lt;/sup&gt;</td>
<td>● When starting small, create a revolving fund from savings from practices with short payback periods</td>
<td>● Develop in-house education programs for hospital executives and staff to raise awareness</td>
</tr>
</tbody>
</table>
| ● Creating a decarbonization team focused on delivery of goals            | ● Green carbon fund / gain sharing                                                            | ● Support ongoing clinical staff education on lower carbon practices |}
| ● Completing an emissions inventory and defining a baseline year<sup>2</sup>| ● Inflation Reduction Act - apply soon to secure maximum funding<sup>3,4</sup>               | ● Reinforce behavior changes through training                                                 |}

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<sup>1</sup> NAM’s Key Actions on Decarbonization (NAM, 2023)

<sup>2</sup> Carbon Accounting (NAM, 2023)

<sup>3</sup> Summary of Inflation Reduction Act provisions related to renewable energy (EPA, 2023)

<sup>4</sup> FACT SHEET: Four Ways the Inflation Reduction Act’s Tax Incentives Will Support Building an Equitable Clean Energy Economy (US Department of Treasury, 2022)
Summary of Findings: ROSI™ Deep Dive Projects

CSB found emission reduction, operational efficiency and risk management benefits

Decarbonization Strategies: Energy Management and Building Design & Maintenance

Energy retrofits could yield $35k or $1 per sq.ft in annual benefits

Designing buildings to be net zero could yield $66k or $2 per sq.ft in annual benefits. Potential to reduce emissions by 72% compared to a standard efficiency building*

*Standard efficiency building that meets ASHRAE code compliance

Decarbonization Strategy: Sustainable Sourcing (Reprocessing)

Switching single use devices with reprocessed devices could yield $3.5M in annual benefits with an average annual cost of $87K to run the program

Sustainability programs were found to positively influence employee engagement

Decarbonization Strategy: Transportation

Reducing the number of last mile pharmaceutical deliveries can yield $254k in average annual savings for a supply chain partner
Energy Decarbonization
Initial Project Scoping with PwC Partnership

Electrical Energy Value Chain

Fuel Sourcing
- Fossil Fuels
  - Petroleum
  - Natural Gas
  - Coal
- Renewables
  - Wind
  - Solar
  - Hydrogen
  - Hydro
  - Biomass
  - Geothermal
- Nuclear

Electricity Generation
- Feasibility Study & Design
- Construction & Installation
- Operations
- Maintenance
- Energy Storage

Transmission
- Asset Planning
- Engineering, Design & Construction
- Operations
- Maintenance

Distribution
- Metering
- Maintenance

Consumers
- Industrial
- Commercial
- Residential

Battery Storage

Carbon Capture Utilization & Storage

Adapted from (Bamber, Guinn, & Gereffi, 2014)
## Preliminary Decarbonization Practices in Wind & Solar

<table>
<thead>
<tr>
<th>Fuel Type</th>
<th>Approach</th>
<th>Value Chain</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wind &amp; Solar</td>
<td>Reduce</td>
<td><strong>Value Chain</strong></td>
</tr>
<tr>
<td><strong>Fuel Type</strong></td>
<td><strong>Approach</strong></td>
<td><strong>Fuel Sourcing/Extraction</strong></td>
</tr>
<tr>
<td>Wind &amp; Solar</td>
<td>Reduce</td>
<td>Address issues on intermittency and reliability of wind and solar generation through planning and investment</td>
</tr>
</tbody>
</table>
Initial Project Scoping

Oil & Gas Value Chain

Fuel Sourcing/Extraction
- Identify
- Explore
- Design & Construct
- Produce

Transportation
- Trucking
- Pipelines
- Cargo Ships

Short Term Storage

Refining & Blending

Terminal

Point of Sale
- E.g. Gas Stations

Consumers

Essential Manufacturing Feedstock
(byproducts of fossil fuel production, e.g. plastics manufacturing)

Power Plants

Carbon Capture Utilization & Storage

Adapted from American Petroleum Institute

NYU Stern Center for Sustainable Business
## Preliminary Decarbonization Practices in Oil & Gas

<table>
<thead>
<tr>
<th>Fuel Type</th>
<th>Approach</th>
<th>Oil &amp; Gas Value Chain</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td><strong>Fuel Extraction</strong></td>
</tr>
<tr>
<td>Oil &amp; Gas</td>
<td>Reduce</td>
<td>Reduce emissions from flaring/venting/blowdowns by upgrading key equipment, improving maintenance, and recapturing fugitive methane</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Reduce leaking by upgrading key equipment/replacing leaky equipment (incl. pipelines), improving maintenance, installing digitized monitoring systems, and etc.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Expand the use of low-emission fuel sources (e.g. hydrogen) in refineries</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Invest in energy efficient equipment to increase operational efficiency and reduce amount of energy consumed across each segment of the value chain</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Invest in training/retraining of workers in other low or no emission technologies such as geothermal</td>
</tr>
<tr>
<td></td>
<td>Reuse</td>
<td>Retrofit decommissioned refinery assets to be able to produce different, lower carbon forms of energy and fuel (e.g. renewable diesel, sustainable aviation fuel - SAF)</td>
</tr>
<tr>
<td></td>
<td>Remove</td>
<td>Utilize CCUS technology (e.g. reinjection, carbon scrubbers, direct air capture) to remove excess carbon emissions</td>
</tr>
</tbody>
</table>
Emissions are a quantifiable financial problem. Not just a planetary one.

**Investors Are Punishing Polluters**

A study of 16,000 equities over 4 years found that higher GHG emissions mean a lower P/E ratio — from a 3% - 8% penalty.

Bloomberg, 2021

**NYU** and **Valutus** are working on a tool to quantify the cost of inaction – and the value of leadership.
Responsible Investing with Private Equity

Tensie Whelan
Julien Marchese
Jessica Weiss
Support from Arthur D Little, ClimateWorks Foundation, BSR, Fulcrum Consulting
Sustainability Drives Value Creation – If Done Right

Conventional approach to ESG:
- DD – Look for red flags
- Holding period – Identify material ESG issues; determine ESG reporting metrics

Embedded sustainability approach:
- Understand the material issues, strategies, practices and value drivers for the specific material issue
- Prioritize based on upsides/downsides and level of effort/investment required
- Track sustainability and ROSI KPIs
In the first stage of the tool, users input the sector of the target portfolio company and rate it across key criteria:

1. **Identify Target & Sector**
   - Identify sector of target company

2. **Auto-Populated Buckets**
   - After selection of sector, the tool identifies the most relevant material issues for the sector, then indicates mitigating or value-adding strategies, and underlying practices and value drivers.

<table>
<thead>
<tr>
<th>Material Issues (Defined by SASB)</th>
<th>Strategies</th>
<th>Practices</th>
<th>Value Drivers</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Energy Management</td>
<td>• Improving Energy Efficiency &amp; Use of Renewables</td>
<td>• Adopt products, services, and processes that use less energy</td>
<td>• Lower energy costs</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Convert energy purchase (or generation) to renewables where possible</td>
<td>• Reduced exposure to energy cost volatility or grid break-downs</td>
</tr>
<tr>
<td></td>
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<td>• Reduced regulatory fines and risks.</td>
</tr>
</tbody>
</table>

3. **Assessment of Target Company**
   - Next, identify how the target company is responding to the material issues and related strategies, stated commitments, and progress towards commitments.

4. **Rating**
   - Finally, add scores of 1-5 across five criteria:
     - Current Progress
     - Clear Targets
     - Innovation & Growth
     - Risk Mitigation
     - Credible Reporting Standards
The second stage prioritizes the most important material issues & strategies and provides guidance on KPI development

### Issue Prioritization

Once the GP owns the target, they need to prioritize the top 3-5 most important material issues with the greatest financial upside; they also need a better sense of the impact of each material issue in the context to the broader market.

### KPI Development

After prioritizing the top 3-5 issues/strategies, user develops related ESG and ROSI KPIs for each strategy; CSB provides guidance and examples.

### Strategy Development

CSB provides comprehensive output sheet, user develops deeper strategies for the top 3-5 most important material issues for the portfolio company.

Over time, the GP tracks KPI improvement, thus creating a track record of sustainable improvement and a growth story to be shared at exit.

Note: The second stage of the value framework tool is intended to be used once the portfolio company has been acquired, in the first 100 days of the holding period, in order to improve value.
NYU Stern CSB GP Value Driver Tool

Case Study:
Commercial Building Products Manufacturer

March 2024
Fulcrum developed a case study using commercial due diligence data for a manufacturer of commercial building products

Fulcrum leveraged redacted company data from its prior study to evaluate NYU stern CSB’s two-part tool.

The tool is intended to be used first during the due diligence phase to gain a high-level assessment of ESG-related risks and opportunities that can drive improved financial performance, then in the early holding period for material issue prioritization and strategy and KPI development, culminating in strategic inputs and ESG and ROSI (aligned financial metrics) KPIs that can be used to monitor and improve performance during the life of the investment.

Source: Stern CSB Value Framework, FCG Research
Given finite resources, CSB’s tool aids consideration of upside potential, downside potential, and level of investment required.

### Issue Prioritization – Manufacturer of Commercial Building Products

<table>
<thead>
<tr>
<th>Material Issues</th>
<th>Score</th>
<th>Investment / Effort</th>
<th>Downside</th>
<th>Upside</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Market Risk</td>
<td>Regulatory Risk</td>
</tr>
<tr>
<td>Product Design &amp; Lifecycle Management</td>
<td>23</td>
<td>5</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>(10 Downside 13 Upside)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employee Health &amp; Safety</td>
<td>22</td>
<td>5</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>(11 Downside 11 Upside)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Data Security</td>
<td>20</td>
<td>3</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>(13 Downside 7 Upside)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Energy Management</td>
<td>19</td>
<td>2</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>(10 Downside 9 Upside)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Supply Chain Management</td>
<td>19</td>
<td>1</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>(11 Downside 8 Upside)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employee Engagement, Diversity, &amp; Inclusion</td>
<td>17</td>
<td>3</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>(5 Downside 12 Upside)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Water &amp; Wastewater Management</td>
<td>12</td>
<td>4</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>(7 Downside 5 Upside)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Product Quality &amp; Safety</td>
<td>10</td>
<td>2</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>(6 Downside 4 Upside)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: Downside: 1 = most attractive (minimal risk) and 5 = least attractive (significant risk). Upside: 1 = least attractive (minimal opportunity), 5 = most attractive (significant opportunity). Investment / effort required for successful execution: 1 = least attractive (significant effort), 5 = most attractive (minimal effort).

Source: Stern CSB Value Framework, FCG Analysis
CSB’s tool accurately identifies quick wins when provided high-quality data and interpreted within the commercial context of the business.

Note: Downside: 1 = most attractive (minimal risk) and 5 = least attractive (significant risk). Upside: 1 = least attractive (minimal opportunity), 5 = most attractive (significant opportunity). Investment / effort required for successful execution: 1 = least attractive (significant effort), 5 = most attractive (minimal effort).

Source: Stern CSB Value Framework, FCG Analysis
Fulcrum Consulting Group Example

CSB’s tool accurately identifies quick wins when provided high-quality data and interpreted within the commercial context of the business

Product Design & Lifecycle Management

- Significant Upside Opportunity + Minimal Investment = High Priority Quick Win
  - Target company offered a product with superior energy efficiency performance vs. competitors
  - Despite outperformance, customer awareness captured during commercial due diligence (CDD) interviews was mixed
  - Embedding ESG analysis within CDD context revealed performance-perception mismatch
  - Material market share gains achievable by addressing communications gap (low effort / investment)

Employee Health & Safety

- Significant Risk Mitigation Potential + Minimal Investment = High Priority Quick Win
  - Developed custom benchmarks to analyze target company’s historical workplace injury rates
  - Although the target company outperformed on some metrics (e.g., TRIR), severity of injuries had increased since 2019
  - Regularly scheduled plant safety trainings, previously hosted by a staffing partner, ceased in 2020 due to COVID-19
  - Improved proactive safety measures, including resumption of briefings, were recommended (low effort / investment)

Source: FCG Research & Analysis
## Next Steps

<table>
<thead>
<tr>
<th>BSR Pro Bono Engagement</th>
<th>ADL and Fulcrum Pro Bono</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Five PE firms engaged with BSR to test the tool</td>
<td>• ADL ready to take on 3-5 pro bono clients in 2024</td>
</tr>
<tr>
<td>• Learnings will be documented for improvements</td>
<td>• Fulcrum ready to take on 2-3 pro bono clients in 2024</td>
</tr>
<tr>
<td>• Cases will be developed for other PE firms</td>
<td>• Same conditions as with BSR</td>
</tr>
</tbody>
</table>
Invest NYC SDG: Private/Public Partnerships for a Sustainable, Equitable NYC

Marianna Koval
Kendra Gibbs
Sophie Rifkin
Anne-Laure White
## Developing Concrete Projects Across Six Ecosystems

<table>
<thead>
<tr>
<th>Ecosystem</th>
<th>Projects</th>
<th>SDGs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food &amp; Health</td>
<td>M.A.P. NYC&lt;br&gt;Healthy Corner Stores&lt;br&gt;Rikers Island Indoor Commercial Farm&lt;br&gt;FoodMap NY</td>
<td>5, 11, 12, 13, 16, 17</td>
</tr>
<tr>
<td>Sustainable Mobility</td>
<td>The Equitable Commute Project&lt;br&gt;electric vehicles/barges and EV infrastructure&lt;br&gt;last-mile delivery</td>
<td>1, 3, 8, 9, 10, 11, 18</td>
</tr>
<tr>
<td>Built Environment</td>
<td>The Decarbonization Compass: LL97 Data Tool&lt;br&gt;green workforce development and placement</td>
<td>3, 4, 6, 10, 11, 14, 15</td>
</tr>
<tr>
<td>Waste</td>
<td>organic waste collection and processing&lt;br&gt;anaerobic digesters&lt;br&gt;glass waste to low carbon concrete with Pozzotive</td>
<td>4, 6, 7, 9, 10, 11, 14, 18</td>
</tr>
<tr>
<td>Renewable Energy</td>
<td>community solar on city-owned property&lt;br&gt;geothermal&lt;br&gt;offshore wind</td>
<td>11, 12, 13, 15, 16, 17</td>
</tr>
<tr>
<td>Climate Resilience</td>
<td>early warning and predictive AI systems</td>
<td>1, 5, 6, 7, 8, 9, 10</td>
</tr>
</tbody>
</table>
Decarbonization Compass: Unlocking and Helping Prioritize Financing for NYC Building Retrofits

A New and Improved Tool

For Banks & Mortgage Lenders
Search by mortgage holder to view aggregated and individual emissions data for properties in your portfolio and gain insights for where to prioritize decarbonization.

For Policymakers & Retrofit Advocates
Search by compliance pathway or energy grade to get a comprehensive view of the carbon footprint of building categories over time and regulatory change.

For Building Professionals
Search by neighborhood, address, or building use to see emissions and financing details for buildings subject to LL97 and discover potential retrofit opportunities.
Example Search: Major National Bank with Significant LL97 NYC Portfolio

1,209 properties subject to LL97; contributing 470,048 MTCO2 per year

Aggregate portfolio fines per year = $10.8M beginning in 2030 and increasing

76% of the carbon emissions come from multifamily properties
Green Finance Innovation: How Mortgage Lenders Can Drive NYC Building Decarbonization

Coming soon...

- **Buildings are the largest source of carbon emissions in NYC – nearly 70%**. To achieve the City’s net-zero carbon goal by 2050, it’s essential to shrink the carbon footprint of the city’s one million buildings.

- NYC’s largest banks and mortgage lenders can play a pivotal role, providing green financing to their borrowers for decarbonization, while enhancing their own portfolios and reducing their own Scope 3 carbon emissions.

- Growing evidence shows that **green buildings are lower-risk investments**, commanding higher valuations, costing less to run and reducing defaults, and providing greater resiliency to the depreciation rate of energy inefficient buildings.

- The banking industry in the European Union and the UK provide green financing models for the US. Lenders can collaborate with building owners to provide strategic financing for energy-efficient retrofits and clean energy projects, making buildings in NYC greener and more profitable.
NYU Stern-NYCEDC Task Force Launched To Mobilize Building Decarbonization Financing

The City of New York estimates that roughly 15,000 buildings will need a $12-15 billion investment to comply with 2030 LL97 emissions limits, at current costs and with current technology.

CSB, along with the NYU Stern Chen Institute for Global Real Estate Finance and the NYC Economic Development Corporation (NYCEDC), launched a six month task force in January 2024 with representatives from more than a twenty institutional lenders, property owners, government agencies, and industry associations.

The Goal: create a playbook, analyzing existing financing and incentives, identifying the product gaps, and recommending low hanging fruit measures, as well as any silver bullets to spur capital deployment for building decarbonization.
Lack of access to healthy food is the leading cause of poor health in the United States. Examining sectors across the NYS food value chain, research identified six general strategies for private sector engagement and investment that can support greater food security, and seven pilot projects will be announced in June:
Food Finance: Capitalizing Enterprises Focused on Healthy, Affordable, Accessible Food for all New Yorkers

Defining a private sector role: Supporting food security is not exclusively the role of government and philanthropy; the private sector can provide critical capital and create greater access to healthy, affordable food for all New Yorkers, while also supporting economic development with quality employment across the NYS food value chain.

Mobilizing capital: The private sector can help meet the needs of farms and food enterprises committed to creating healthy, affordable food access in NYS, supporting innovative business models, which carve out unique mission-driven positions in the complex U.S. food, food assistance, and healthcare systems.

Building collaboration and educating key stakeholders: NYU Stern CSB will host an April 11, 2024, convening with the Federal Reserve Bank of New York, bringing together a select group of enterprises, foundations, impact investors, and NGO/community organizations already active in this space to discuss strategies to create and capitalize enterprises that increase equitable access to healthy, affordable food.
Other CSB Resources for Practitioners
“Does it pay to be sustainable?” is an enduring, and evolving, question for managers, investors, and researchers.

In 2019-2020 we surveyed 1000+ studies on the ESG-financial performance association.

- Original finding: Strong evidence (stat. sig.) that positive results dominate for corporate/management studies but neutral or mixed for finance papers.
- The topic of climate finance appeared in the top finance journals only in 2020.

Follow-up study after five years is in the planning stage

- Dramatic changes in the regulatory and business landscape re ESG since 2019.
- Did our propositions bear out? Can ML/AI models make sense of the overwhelming number of papers? Are there new findings?
- If you have comments or suggestions, please email: ua6@stern.nyu.edu

Great uptake, e.g. mentioned in McKinsey Quarterly · KPMG · Deloitte · Financial Times · Forbes · Fast Company · Investor Daily · IR Magazine · Responsible Investor

<table>
<thead>
<tr>
<th></th>
<th>Positive</th>
<th>Neutral</th>
<th>Mixed</th>
<th>Negative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corporate</td>
<td>60%</td>
<td>35%</td>
<td>9%</td>
<td>7%</td>
</tr>
<tr>
<td>Investor</td>
<td>24%</td>
<td>26%</td>
<td>25%</td>
<td>14%</td>
</tr>
</tbody>
</table>
The **ROSI™ Employee Wellbeing Monetization Tool** leverages our Return on Sustainability Investment methodology, CSB’s portfolio of client work across various industries, and academic research to monetize companies’ investments in employee well-being strategies.

---

**Investing in Employee Wellbeing ROSI™ Monetization**

- The following form will ask for HR data related to employee headcount, wages, turnover, and costs of well-being initiatives.
- At any time, you can save your progress. This data is stored locally on your computer and will not be shared with CSB or any third-party provider.
- Once you have completed the process, you will be able to print or email your results.

Enter previous year
Enter current year

[Save Draft] [Continue]
Inputs

HR data related to:
- Employee headcount, wages
- Turnover
- Hiring costs
- Productivity
- Cost of well-being initiatives

Monetization Outputs

- Annual salary per employee
- Cost of hiring & turnover
- Productivity
- Cost of direct employee well-being initiatives
- Estimated cost savings per year
The **ROSI™ Research Database** was initially created as part of a research project funded by Rockefeller Capital Management to examine 1000+ academic papers published between 2015-2020 exploring the relationship between sustainability and financial performance.

This updated database now includes **400+ papers or reports** investigating the relationship between sustainability and financial performance!

View [here](#)!
Fill out the interest form for this **new asynchronous course** and you will receive an email notification with access instructions.
Recent Publications

- What We Measure Today Does Not Matter When It Comes to Jobs
- Effective Sustainability Communications: A Best Practice Guide for Brands & Marketers
- Global Change Begins at Home: Advancing the UN Sustainable Development Goals in NYC
- Financing Mechanisms to Support Sustainable Practices
- Gore Mutual Insurance Company: Building Resilience in the Eye of the Storm
- Green Finance Innovation: How Mortgage Lenders Can Drive NYC Building Decarbonization
Get Involved with CSB

Learn more and stay up-to-date about CSB educational programs, ROSI Methodology and other original research, career resources and events. www.stern.nyu.edu/sustainability

Support CSB to ensure the continuation of our education, career development, research and outreach initiatives. CSB is grateful to raise all of our own operating and research funds from alumni and other supporters. https://bit.ly/supportcsb

Reach out to CSB if you are interested in learning more about educational programs, partnership opportunities, working with current students, or just to introduce yourself!

sustainablebusiness@stern.nyu.edu

Follow us, tag us and join the conversation on LinkedIn at NYU Stern Center for Sustainable Business
Questions?
Sustainable Market Share Index™

RANDI KRONTHAL-SACCO
Senior Scholar
NYU Stern CSB
Sustainable Market Share Index™ 2023 Report
Sustainable Market Share Index™: Methodology

• Partnered with Circana (formerly IRI) to access Point of Sale (POS) data
• POS data examined to date:
  – 36 categories; 40% of total U.S. dollars volume, excluding alcohol and tobacco
  – 11 years: January 2013 through December 2023
  – Reviewed over 250,000 products
• Identified all SKUs for each category marketed as sustainable with on-package communication (e.g., third-party certification, USDA Organic, no phosphates, plant-based, no-phthalates, FSC)

All estimates and analysis in this paper based on Circana data are by the authors and not by Circana
Sustainable Market Share Index™: 2023 Market Share

Sustainability-marketed products continues to **grow share**

*36 categories examined
The share of sustainability marketed products excluding private label is 21.2%. +1.5ppts vs YAG.
Sustainable Market Share Index™: Store Brands

Store Brand share of market was 20.8%, up +0.4ppt from 2022 to 2023 suggesting that branded sustainable products are more insulated from inflation-driven moves to store brands and changes by brands to more sustainable options.

* From IRI private label report
**36 categories examined, excluding private label
Sustainable Market Share Index™: Growth Rate

Sustainability-marketed products grew at ~10% 5-YR CAGR

- Sustainability-marketed 5-YR CAGR: 9.9%
- Total Market 5-YR CAGR: 7.0%
- Conventionally-marketed 5-YR CAGR: 6.4%

Note: Based on 36 categories examined; includes private label
Sustainable Market Share Index™: Category performance

- **<5% Share**
  - Carbonated Beverages
  - Food & Trash Bags Pet Food
  - Pet Treats
  - Chocolate Candy
  - Laundry Detergent
  - Laundry Care

- **5% - 20% Share**
  - Toothpaste Diapers
  - Household Cleaner Frozen Dinner Cup and Plates
  - Energy Drinks Salty Snacks Cereal
  - Paper Napkins Crackers Dish Detergent Cookies Vitamins Bottle Juice Fresh Bread Sanitary Napkins Weight Control

- **>20% Share**
  - Paper Towels Soup Natural Cheese Coffee Floor Cleaner Skincare Milk Deodorant Toilet Tissue Facial Tissue Yogurt Soap
In general, the younger the HH, the more likely they are to purchase sustainable products.
**Sustainability Purchase Index: Education**

The **more educated** the consumer, the **more likely** they are to buy sustainable products

<table>
<thead>
<tr>
<th>Post Graduate School</th>
<th>Graduated College</th>
<th>Some College</th>
<th>Graduated High School</th>
<th>Some High School or Less</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="chart.png" alt="Chart" /></td>
<td><img src="chart.png" alt="Chart" /></td>
<td><img src="chart.png" alt="Chart" /></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Total CPG Sustainable Sales Composition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Post Graduate School</td>
</tr>
<tr>
<td>Graduated College</td>
</tr>
<tr>
<td>Some College</td>
</tr>
<tr>
<td>Graduated High School</td>
</tr>
<tr>
<td>Some High School or Less</td>
</tr>
</tbody>
</table>

Chart read as: Female HHs who attended post graduate school purchased a significantly higher percent (>1.2x) of their carbonated beverage purchases on sustainable products, than did Average HHs.
Sustainability Purchase Index: Income Tiers

The **more affluent** the consumer, the **more likely** they are to buy sustainable products

- **Upper** income HHs purchased a significantly higher percent (>1.2x) of their carbonated beverage purchases on sustainable products, than did average HHs.

<table>
<thead>
<tr>
<th>Category</th>
<th>Upper</th>
<th>Middle</th>
<th>Lower</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total CPG</td>
<td>41%</td>
<td>38%</td>
<td>21%</td>
</tr>
<tr>
<td>Sustainable Sales Composition</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Income Classification: Upper (≥$70k 1P + ≥$30k all others), Middle ($30-70k 1P + $5k per add’l person), Lower (<$30k 1P + $5k per add’l person)

Chart read as: Upper income HHs purchased a significantly higher percent (>1.2x) of their carbonated beverage purchases on sustainable products, than did average HHs.
Sustainability Purchase Index: Urbanicity

The **more urban** the consumer, the **more likely** they are to buy sustainable products.

Chart read as: Households in County Size A purchased a significantly higher percent (>1.2x) of their carbonated beverage purchases on sustainable products, than did average HHs.
Sustainable Market Share: Plain Bottled Water

Plastic bottles using recycled materials in the plain bottled water segment has grown to 72% in just 5 years.
Sustainable Market Share: Summary

Sustainable products continue to grow, outperforming the market and conventionally marketed products.
Effective Sustainability Communications

RICHARD EDELMAN
CEO
Edelman

RANDI KRONTHAL-SACCO
Senior Scholar
NYU Stern CSB
The Sustainability Amplifier Effect

- Category Claim × 0 Sustainability: 44%
- Category Claim × 1 Sustainability: 60%
- Category Claim × 2 Sustainability: 74%
**BEST RESONATING Sustainability Claims**

Consumers care **most** about:

- My health
- My wealth
- My personal world: children, animal welfare, local farmers/sustainable sourcing
Consumers care less about:

- Scientific causes behind sustainability (they care about effects)
- Traceability
- Certifications
- Packaging
Scan QR code to access the full report
Time for a coffee break!
The program will resume at 11:25 am
Value Drivers in Sustainable Food and Agriculture
Sustainability Strategies

- Climate Change Mitigation & Adaptation
- Soil Health
- Biodiversity & Ecosystem Conservation
- Chemical Management
- Sustainable Sourcing
- Animal Stewardship
- Food Waste
- Water Stewardship
- Employee & Supplier Wellbeing
- Food Safety & Nutrition
- Sustainable Packaging
- Brand Marketing & Communications
Key Themes Overview

Investing in sustainability strategies has demonstrated a strong, positive business case.

The cost of inaction through lost revenue and/or higher costs comes from delaying or withholding sustainability investment.

Opportunity-related benefits were discovered by many companies who originally focus their sustainability strategies on risk mitigation.

Financial benefits are impacted by where a company sits on the value chain.

Realized financial benefits from sustainability investments don't fully mollify uncertainty about future value of such investments.

Benefits from sustainability investments are often unidentified or undervalued due to difficulties in measuring progress and value.

Collaboration brings even better results within the interconnected food system.
Value Drivers in Sustainable Food and Agriculture
Return on Sustainability Investment in Action: Circular Supply Chains

KATHYA MAHADEVAN
Sr Sustainability Leader, Circular Economy
Owens Corning

TRISTAN STEICHEN
Executive Director
National Lubricant Container Recycling Coalition

CHISARA EHIEMERE
(Moderator)
Senior Research Scholar
NYU Stern CSB
Lunch Break

The program will resume at 2:15 pm
Fireside Chat with Nespresso

Driving Sustainable Quality and Stakeholder Engagement at Nespresso

ALFONSO GONZALEZ LOESCHEN
CEO
Nespresso North America

PHIL WAHBA
Senior Writer
Fortune
Breaking Through Barriers of Sustainability Value Creation for Investors

SANAZ RACZYNSKI
Managing Director of Sustainability
Kohlberg & Company

SERGE YOUNES
Head of Sustainability
Investindustrial

HUGH BROWN (Moderator)
Global Head of Financial Services
BSR
Fireside Chat with Deloitte

Constraints and Opportunities Offered by Sustainability and ESG

SCOTT CORWIN
Chief Strategy and Commercialization Officer
Deloitte Sustainability Practice

DIANE BRADY
(Moderator)
Editorial Director
Fortune CEO Initiative
Feedback Survey

Scan to complete a brief survey and share your feedback from the conference.

See you at happy hour!
Breakout Sessions

Please join us for one of the following sessions

**Sustainable Storytelling Amid ESG Backlash** (UC-25)

**Monetizing ROSI Strategies** (UC-24)

**Scope 3 Reductions in Food and Ag** (UC-21)
Thank you to our sponsors

Deloitte.

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Invest Industrial

Glenmede

Fortune