

Professional Certificate in Sustainable Investment

Program Content

- Introduction to Sustainable Investment & ESG Foundations.
- Financial Analysis of Sustainable Companies
- Sustainable Investment Strategies & Risk-Return
- Quantitative Analysis & Modelling
- Review, Strategy & Practical Application

Program Objectives

- Understand the principles and frameworks of sustainable and responsible investment (SRI)
- Integrate environmental, social, and governance (ESG) factors into investment decision-making
- Analyze the impact of sustainability risks and opportunities on portfolio performance
- Apply ESG data, ratings, and reporting frameworks to investment analysis
- Develop strategies for long-term value creation aligned with sustainable finance goals
- Understand regulatory and policy requirements for sustainable investments globally

Share Your Perspective

- . What is one small change you've made in your personal life for sustainability?“

Intro to ESG, SRI, and Impact Investing

ESG, SRI, Impact Investing: What's the Difference?

- **ESG** (Environmental, Social, Governance): A framework for risk management and identifying opportunities. **Focus: Financial Materiality**
- **SRI** (Socially Responsible Investing): An values-based approach that uses negative/exclusionary screening. **Focus: Ethics.**
- **Impact Investing**: Investments made with the intention to generate positive, measurable social and environmental impact alongside a financial return. **Focus: Intentionality & Measurement.**

Why Does ESG Matter?

- License to Operate: Intense public, investor, and regulatory obligation.
- Risk Mitigation: ESG factors directly correlate with operational, reputational, and financial risk (e.g., spills, protests, fines).
- Access to Capital: Banks and investors increasingly mandate robust ESG disclosures.
- Long-Term Viability: Transitioning business models for a lower-carbon future.

Key Global Standards & Initiatives

UN SDGs: The World's To-Do List

- . What they are: 17 interlinked global goals to achieve a better future by 2030.

UN SDGs



The EU's Rulebook: Taxonomy & SFDR

- EU Taxonomy: A classification system defining what is "environmentally sustainable." To be "green,"



1

Climate change
mitigation



2

Climate change
adaptation



3

Sustainable use and
protection of water and
marine resources



4

Transition to a
circular economy



5

Pollution prevention
and control



6

Protection and restoration
of biodiversity and
ecosystems

The EU's Rulebook: Taxonomy & SFDR

- . An activity must:

Do no significant harm (DNSH)

Meet minimum safeguards (e.g., UN Guiding Principles on Human Rights).

Does the electric cars consider the DNSH ? WHY ?

- . SFDR (Sustainable Finance Disclosure Regulation): Requires financial market participants to disclose how they integrate sustainability risks, including the adverse impacts of their investments.

Sector-Specific Disclosure Frameworks

- . TCFD (Task Force on Climate-related Financial Disclosures):

Focus: How climate risk affects a company's finances. Framework built on 4 pillars: Governance, Strategy, Risk Management, Metrics & Targets. And it become mandatory in many jurisdictions (UK, NZ, etc.).

TCFD Framework

TCFD



GOVERNANCE



STRATEGY



**RISK
MANAGEMENT**



**METRICS
AND TARGETS**

TCFD Framework

- . Governance:
 - . Disclose the organization's governance around climate-related risks and opportunities.
 - . Example Disclosure: "The Board's Sustainability Committee oversees climate-related risks and reviews our transition plan quarterly."
- . Strategy:
 - . Disclose the actual and potential impacts of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning.

TCFD Framework

- . Risk Management: Disclose how the organization identifies, assesses, and manages climate-related risks.
- . Example Disclosure: "We have integrated climate risk into our enterprise risk management framework, with specific metrics for drought and flooding at our key sites."
- . Identify some climate risks with potential mitigation plan

TCFD Framework

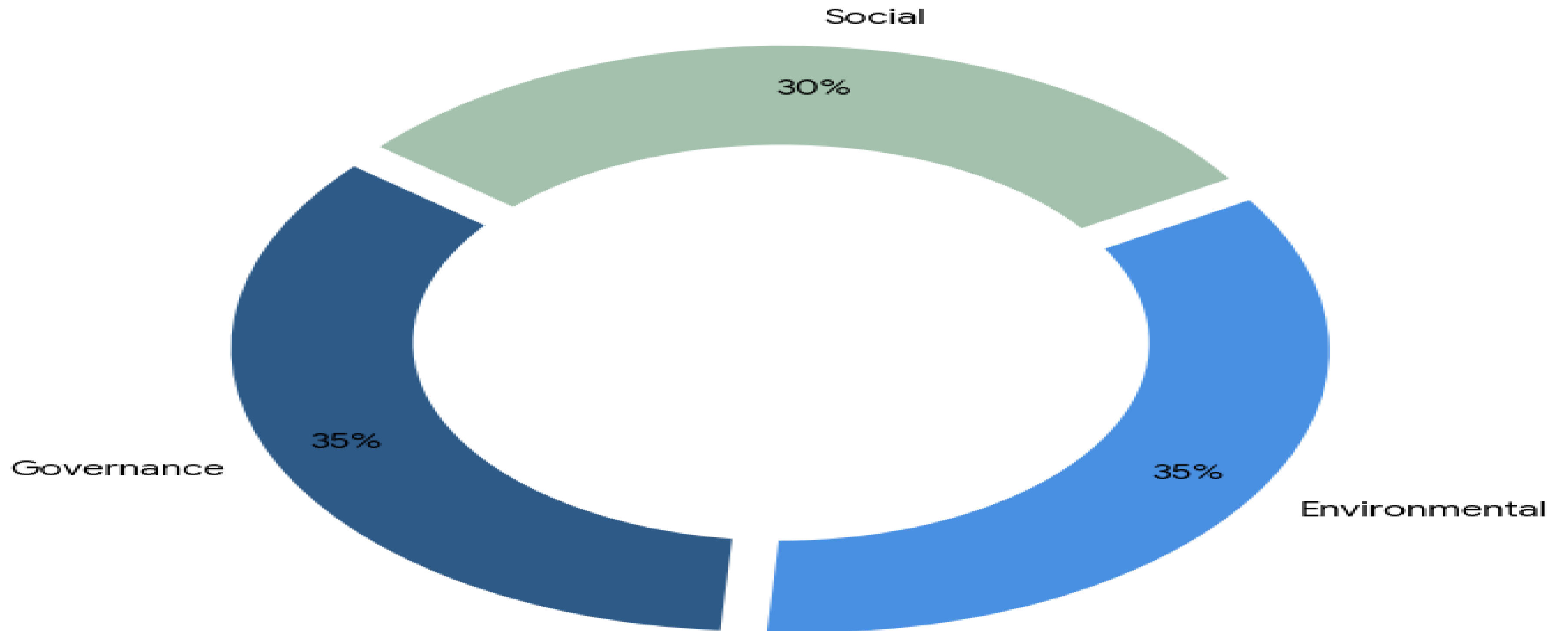
- . Metrics and Targets: Disclose the metrics and targets used to assess and manage relevant climate-related risks and opportunities.
- . Example Disclosure: "Target: Reduce Scope 1 & 2 emissions by 40% by 2030 from a 2015 baseline."

Scope 1, 2, and 3 Emissions

- **Scope 1:** Direct emissions from owned sources (company vehicles, factories)
- **Scope 2:** Indirect from purchased energy (electricity, steam)
- **Scope 3:** All other indirect value chain emissions (suppliers, customers, investments)
- **Key Insight:** For most companies, Scope 3 is 80%+ of total footprint

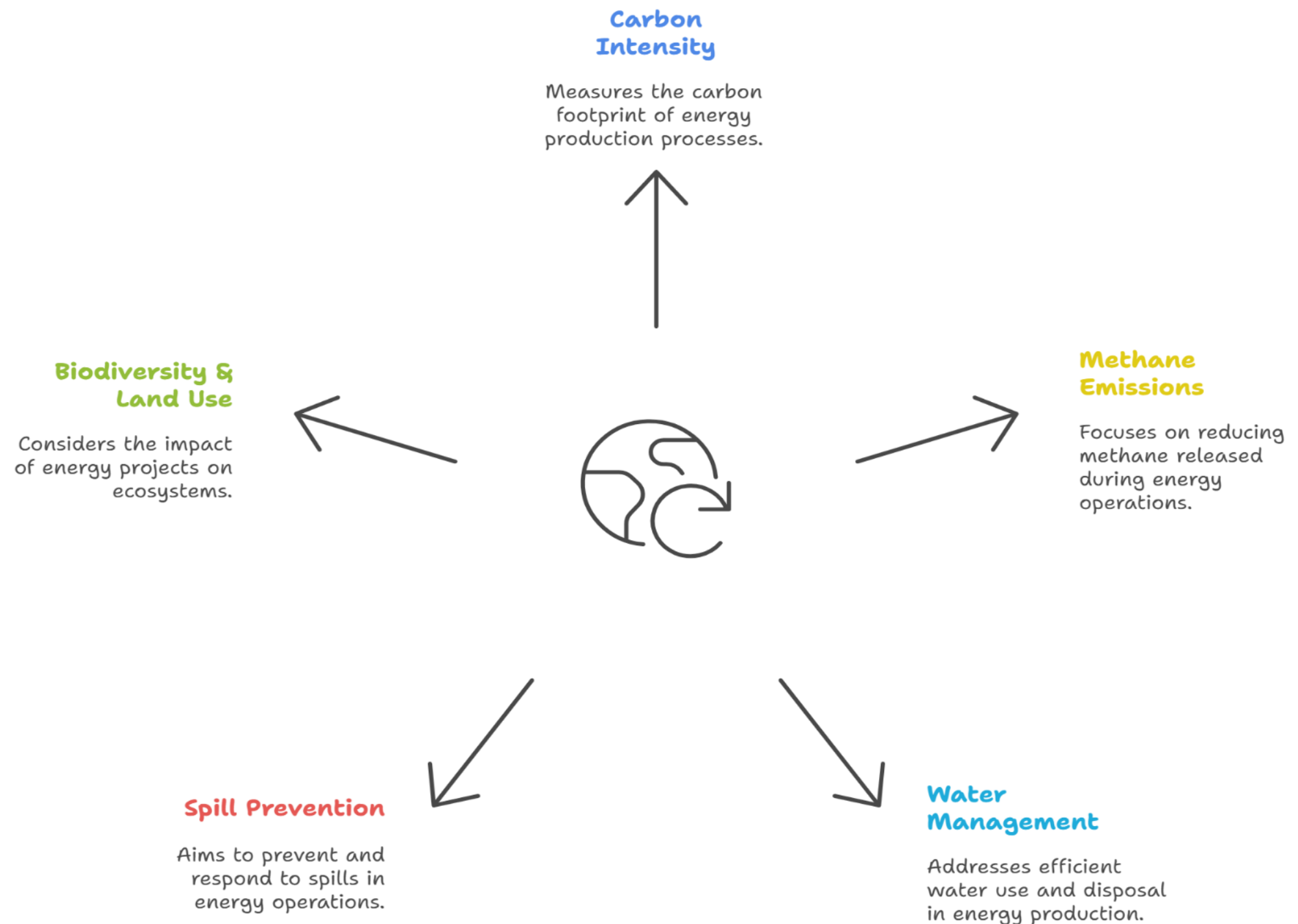
Deep Dive into ESG Factors

ESG Drivers of Corporate Value



The "E" in ESG: Environmental Factors

- Carbon Intensity (CO2/boe)
- Methane Emissions & Flaring
- Water Management (Usage, Sourcing, Produced Water)
- Spill Prevention & Response
- Biodiversity & Land Use



Defining and Measuring Carbon Intensity

- . Definition: The amount of (CO₂) emitted per barrel of oil equivalent (boe) produced.
- . Metric: kg CO₂e / boe.
- . Why it matters: Allows for comparison between companies and assets. A lower-intensity barrel is less exposed to carbon pricing and transition risk.

Managing Methane and Flaring

- . Methane: Primary component of natural gas.
- . Flaring: Burning of waste gas. Sometimes necessary for safety, but routine flaring is wasteful and polluting.
- . World Bank Initiative: Aiming for Zero Routine Flaring by 2030.

Water Usage and Management

- . Water Intensity: Volume of freshwater used per unit of production.
Key in water-stressed regions.
- . Produced Water: Water extracted from the reservoir along with oil and gas. Must be treated and disposed of responsibly (often via reinjection).
- . Risk: Contamination of groundwater sources.
- . Potential challenges and mitigation (Textile industry)

What is Spill Prevention and Response

- . Prevention: Blowout preventers (BOPs), pipeline monitoring, double-hulled tankers.
- . Response: Oil spill response plans, containment booms, skimmers.
- . High-Profile Case: Deepwater Horizon (2010) cost BP over \$65 billion and remains a stark reminder of the catastrophic financial and reputational risk

Case Study: The Ultimate Cost of Environmental Failure

- . Incident Date: April 20, 2010
- . Initial Cause: Blowout preventer (BOP) failure on the Macondo well.
- . Financial Impact on BP:
 - . Total Pre-Tax Charge: \$65.1 Billion (as of 2016)
 - . Cleanup Costs: \$14+ billion
 - . Fines & Penalties: Over \$20 billion (including \$5.5bn Clean Water Act penalty)
 - . Settlements & Compensation: \$20+ billion to affected individuals and businesses
- . Non-Financial Impact:
 - . Forced asset sales to raise cash.
 - . Temporary suspension from new US federal contracts.
 - . Immeasurable and lasting reputational damage.

Biodiversity and Land Use

- . Impact Assessments: Conducting studies before operations begin in sensitive ecosystems (e.g., rainforests).
- . Land Restoration: Returning land to its natural state after operations cease.
- . IPIECA Guidelines: The industry association provides best practice guidance on biodiversity conservation.

Key Environmental Takeaways

- . Focus on metrics like Carbon and Methane Intensity.
- . Flaring and water management are key operational challenges.
- . Spills and biodiversity loss represent catastrophic risks.

The "S" in ESG: The Social License to Operate



**WORKFORCE
SAFETY**
(TRIR, LTIR)



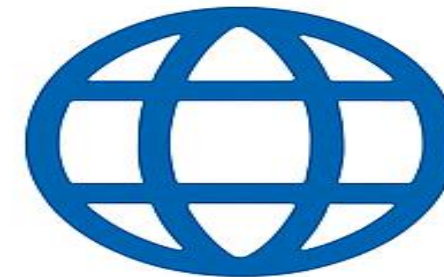
**COMMUNITY
ENGAGEMENT &
& INVESTMENT**



**INDIGENOUS RIGHTS
& FREE, PRIOR
INFORMED
CONSENT (FPIC)**



**SUPPLY CHAIN
ETHICS**
(MODERN SLAVERY ACT)



**HUMAN RIGHTS
DUE DILIGENCE**

The "S" in ESG: The Social License to Operate

- . Workforce Safety (TRIR, LTIR)
- . Community Engagement & Investment
- . Indigenous Rights & Free, Prior, and Informed Consent (FPIC)
- . Supply Chain Ethics (Modern Slavery Act)
- . Human Rights Due Diligence

Workforce Safety: TRIR and LTIR

- . TRIR (Total Recordable Incident Rate): Number of recordable incidents per 200,000 hours worked.
- . LTIR (Lost Time Incident Rate): Number of incidents resulting in lost work days per 200,000 hours worked.
- . Importance: A leading indicator of overall operational discipline and corporate culture.

Community Engagement & Investment

- . Local Content: Hiring locally and using local suppliers. Often mandated by governments.
- . Social Investment: Funding local projects (schools, hospitals, infrastructure).
- . Grievance Mechanisms: Having clear channels for communities to raise concerns.

Indigenous Rights & FPIC

- . FPIC (Free, Prior, and Informed Consent): A principle that indigenous communities must be adequately informed about projects, consulted in good faith, and can give or withhold their consent.
- . Not just a checkbox: Meaningful engagement is required.

Supply Chain Ethics and Human Rights

- . Modern Slavery Act (UK)/ similar laws: Require companies to disclose efforts to eradicate slavery, Child labour and human trafficking from their supply chains.
- . Due Diligence: Auditing suppliers, especially in high-risk regions or for high-risk activities (e.g., manufacturing, shipping).

Real-World Social Challenge

Case: TotalEnergies' Tilenga project in Uganda.

- . Issue: Project affects protected ecosystems and displaces local communities.
- . Action: NGOs and investors raised concerns about human rights and environmental impacts, leading to significant reputational risk and project delays.

Quantifying the "S"

- **Key Metrics to Track:**

- Voluntary turnover rate (cost of replacement: 150-200% of salary)
- Lost time injury frequency (safety culture)
- Gender pay gap (equity)
- Training hours per employee (investment in human capital)
- CEO-to-median-worker pay ratio (inequality)

Case Study: Linking Pay to ESG

BP's Energy Transition Strategy.

- . Action: BP links the pay of 36,000 employees to emission reduction targets.
- . Impact: Creates a direct financial incentive for the entire workforce to contribute to the company's transition goals.

Key Social Takeaways

- . Safety performance is a window into corporate culture.
- . Community support is a "license to operate."
- . Human rights due diligence is a non-negotiable global expectation.

The "G" in ESG: Governance Factors



**BOARD OVERSIGHT
& EXPERTISE ON
CLIMATE STRATEGY**



**EXECUTIVE
INCENTIVES
TIED TO
ESG METRICS**



**ANTI-CORRUPTION
& TRANSPARENCY**



**POLITICAL LOBBYING
& ALIGNMENT WITH
PARIS GOALS**



**WHISTLEBLOWER
PROTECTIONS**

The "G" in ESG: Governance Factors

- . Board Oversight & Expertise on Climate Strategy
- . Executive Incentives Tied to ESG Metrics
- . Anti-Corruption & Transparency
- . Political Lobbying & Alignment with Paris Goals
- . Whistleblower Protections

Climate Governance: Board and Executive Pay

- . Board Expertise: Does the board have members with climate/ESG expertise to challenge management?
- . Executive Incentives: Is a significant portion of executive pay tied to achieving ESG targets (e.g., emission reductions, safety performance)?

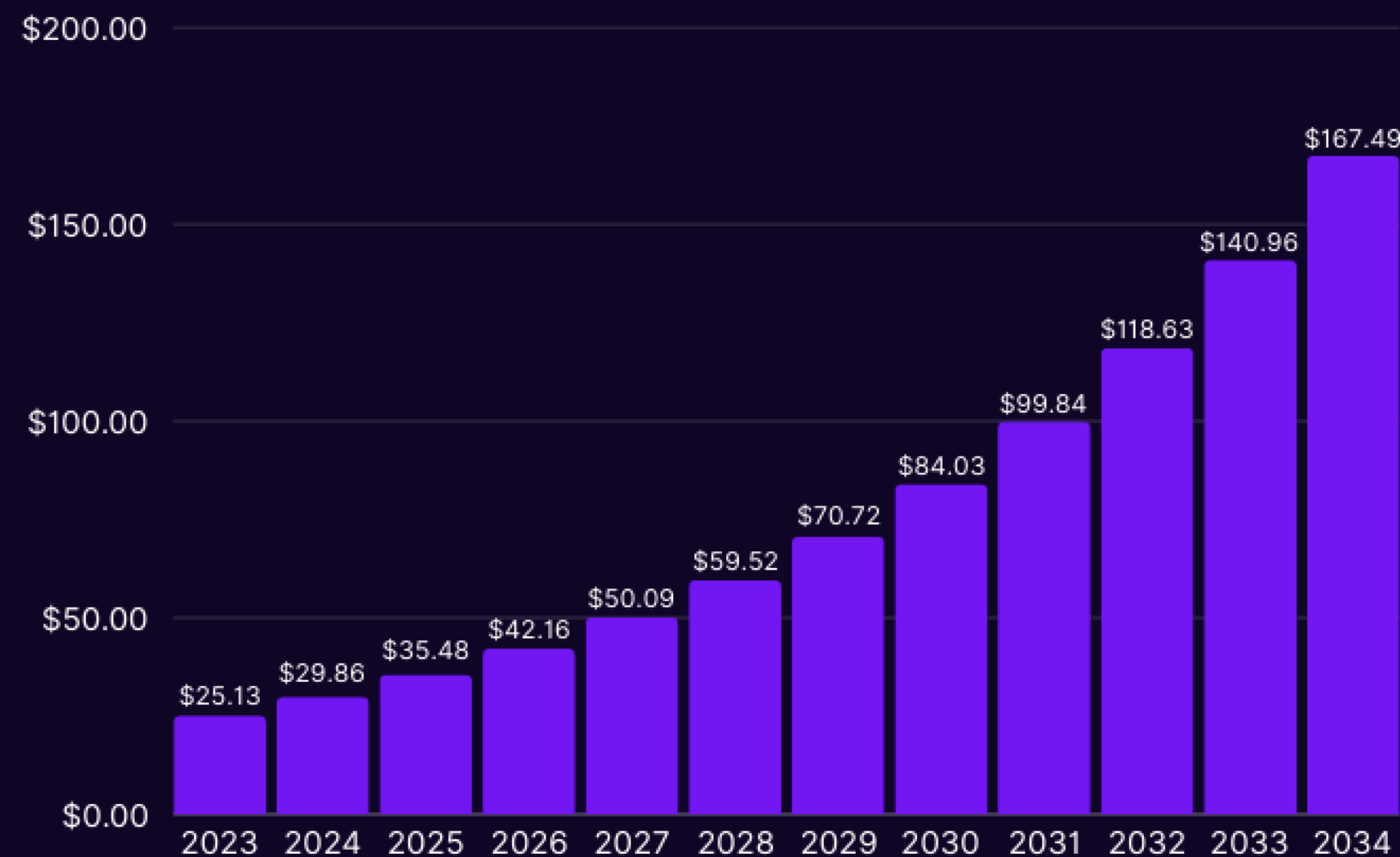
Anti-Corruption, Transparency, and Lobbying

- . FCPA/UK Bribery Act: Strong anti-corruption laws with extraterritorial reach.
- . Political Lobbying: Are company lobbying activities (directly or through associations) aligned with their public climate goals? (e.g., lobbying against methane regulations while publicly supporting them).



ESG Integration Strategies for Portfolios

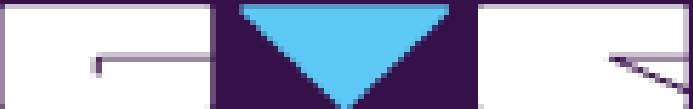
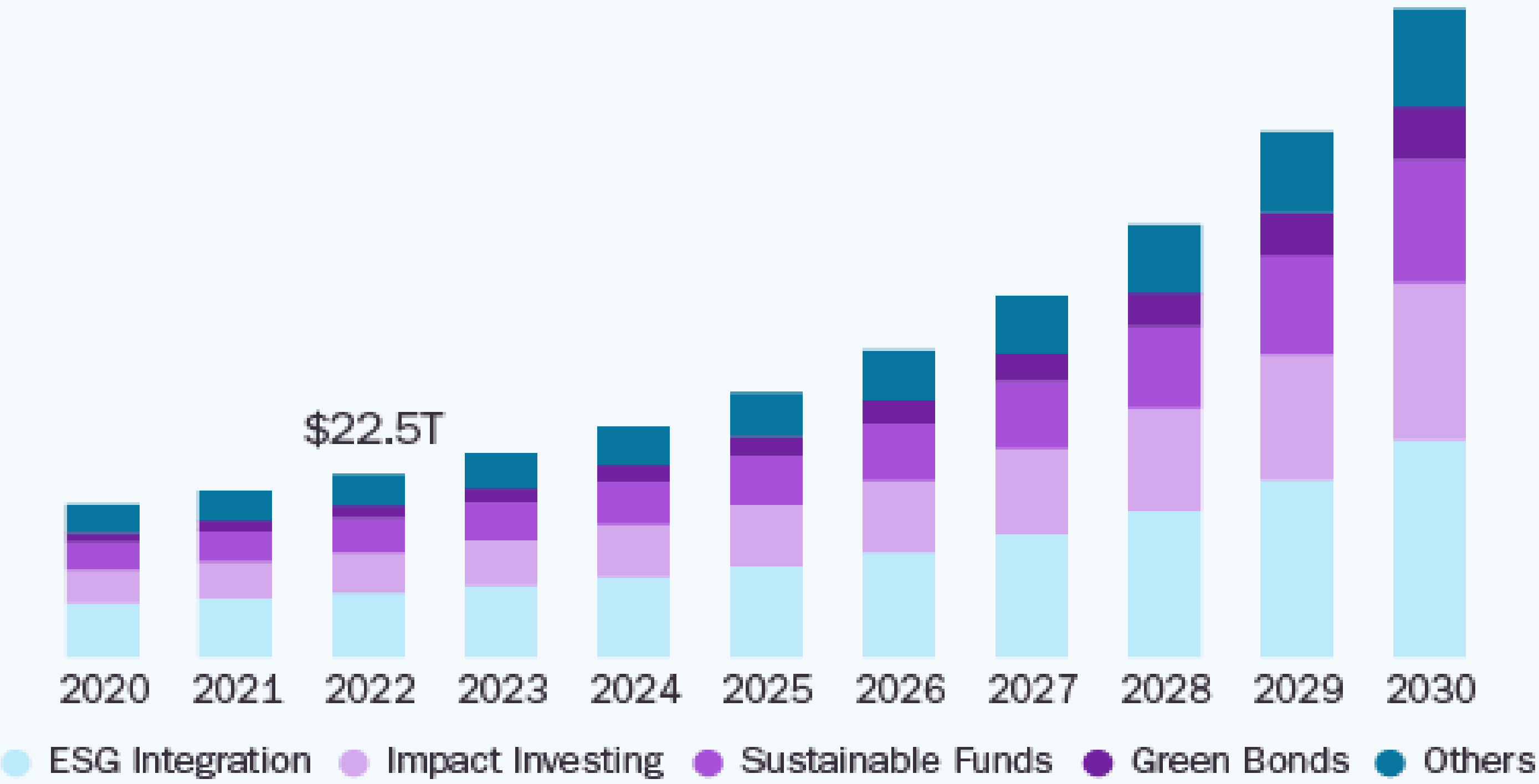
ESG investing market size 2023 to 2034 (USD Trillion)



* Source: Precedence Research - ESG Investing Market Size, Share and Trends 2024 to 2034

ESG Investing Market Size

by Type, 2020 - 2030 (USD Trillion)



GRAND VIEW RESEARCH

18.8%

Global Market CAGR,
2024 - 2030

Source:
www.grandviewresearch.com

Strategies for Investing in the Energy Transition

- Exclusionary Screening: Removing sectors or companies based on specific activities
- ESG Integration: Systematic inclusion of ESG factors into financial analysis to manage risk and enhance returns.

Strategies for Investing in the Energy Transition

- Best-in-Class: Selecting the leading companies within a sector based on ESG performance.
- Thematic Investing: Targeting specific sustainability themes (e.g., clean energy, efficiency).
- Impact Investing: Targeting measurable, positive impact.

Exclusionary Screening

- . Definition: The practice of excluding companies, sectors, or countries from a fund or investment portfolio based on ethical or sustainability criteria.
- . Example: A major university endowment sells its shares in all fossil fuel companies.

Exclusionary Screening: Pros and Cons

The Divestment Approach

- Pros:

- . Aligns with ethical values.
- . Simplifies portfolio and avoids headline risk.
- . Sends a strong market signal.

- Cons:

- . Reduces diversification.
- . Forfeits potential returns from the sector.
- . Biggest Critique: You can't change a company from the outside if you don't own it.

ESG Integration

Using your power as a shareholder to influence corporate behavior.

- Methods:
 - . Dialogue with senior management & board members.
 - . Filing shareholder forms.
 - . Voting on ESG issues.
- Goal: To improve ESG practices, reduce risk, and protect long-term value.

ESG Integration

- . Example: An asset manager writes letters to the board of an O&G company, urging them to set and publicly report on a methane reduction target.
- . Pros: Can drive real change from within; a more collaborative approach.
- . Cons: Can be slow and resource-intensive; success is not guaranteed.

Exclusion vs. Engagement

- . Question: "Which approach is more effective for driving real change ?"
- . Discussion Points: Which method better handles the complexity of the transition.

Exclusion vs. Engagement

- I would recommend ESG Integration + targeted exclusions. The logic:
- Use exclusions for clear no-go areas (e.g. companies with no transition plan, extremely high carbon intensity, or involved in practices that are universally condemned).
 - Beyond that, apply ESG integration to evaluate which companies are transitioning well, which have robust governance, which are exposed to climate risk, etc.
 - Weight portfolios in favor of companies showing credible transition pathways, but don't cut out all energy companies — many of them must play a role in the transition.

Best-in-Class Selection in O&G

Picking the Leaders

- How it works: Rather than excluding the entire sector, investors select the companies with the strongest ESG credentials relative to peers.
- Key Metrics:
 - . Lowest methane and carbon intensity.
 - . Strongest safety records (TRIR).
 - . Most robust transition strategies (CAPEX allocated to low-carbon).
 - . Best governance structures.

Best-in-Class Example

Why an Investor Might Choose Equinor

- Ambitious Targets: Aiming for net-zero by 2050, including Scope 3 emissions.
- CAPEX Allocation: Investing heavily in offshore wind (e.g., Dogger Bank in UK) and hydrogen.
- Carbon Intensity: Historically lower than many peers due to a large gas portfolio.
- Governance: Strong board oversight of climate strategy.

Transition Finance: The Bridge to a Lower-Carbon Future

- Financing that supports companies or projects with a credible plan to align with climate goals, particularly in high-emitting sectors like O&G.
- Oil & gas, steel, cement, aviation, shipping, chemicals, power generation
- Not about: Funding "business as usual."
- Is about: Funding measurable, verifiable shifts—e.g., reducing methane leaks, investing in CCUS, developing renewables/hydrogen portfolios.

Case Study: Transition Finance in Action

- . Carbon Capture and Storage (CCS)
 - Company: Fictional "Apex Energy," a major O&G producer.
 - The Problem: Apex needs to reduce its carbon footprint to satisfy investors and meet regulatory goals.
 - The Solution: Apex issues a Green Bond to finance a large-scale CCS project at one of its gas processing plants. The project captures 90% of the CO₂ emissions from the plant.
 - The Outcome: The bond attracts capital from a new class of ESG investors, and the project allows Apex to continue operating while demonstrating a commitment to climate action.

Difference between Green Finance and Transition finance ?

- Green finance → for already green projects (solar, wind, EVs, etc.).
- Transition finance → for hard-to-abate sectors that cannot become green overnight).

**GREEN
FINANCE**



**ENVIRONMENTALLY
FRIENDLY**

**TRANSITION
FINANCE**



**SHIFTING TO
LOW-CARBON**

What are The project types for Transition finance ?

- Energy Efficiency & Emissions Reduction Projects
- Fuel Switching & Cleaner Energy Use
- Green & Low-Carbon Technology Pilots
- Supply Chain & Value Chain Decarbonization
- Transition Enabling Infrastructure
- Carbon Market & Offsetting Mechanisms (with integrity)

Thematic & Transition Investing in Energy

Thematic Investing

- Thematic Investing: Betting on the Solutions



CCUS



HYDROGEN



**RENEWABLE
DIVERSIFICATION**



LNG

Carbon Capture, Utilization, and Storage (CCUS)

CCUS: A Critical Abatement Technology

- What it is: Capturing CO₂ from industrial sources, transporting it, and storing it deep underground or using it in products.
- Why it's vital : Allows for continued use of hydrocarbons in a decarbonizing world. Essential for "blue" hydrogen.
- Challenges: High cost, need for supportive policy and carbon pricing.

Renewable Energy Diversification

Strategy: Using cash flows to fund growth in renewables, primarily offshore wind and solar.

Rationale: Leveraging existing capabilities in large-scale project management, energy trading, and government relations.

Renewable Diversification Examples

BP: Target of 50GW renewable capacity by 2030. Major investments in US offshore wind.

- TotalEnergies: Target of 100GW renewable capacity by 2030.

Large solar and wind portfolio.

- Shell: Major player in offshore wind in the US and Europe.

The Hydrogen Economy

- Grey Hydrogen: Made from natural gas, CO₂ is released into the atmosphere.
- Blue Hydrogen: Grey hydrogen + CCUS. Considered a transition fuel.
- Green Hydrogen: Made via electrolysis of water using renewable electricity. Zero carbon.
- O&G Role: Companies are leveraging their natural gas assets, CCUS expertise, and trading desks to become leaders in blue and eventually green hydrogen.

Hydrogen Case Study: Shell Holland Hydrogen

- What: 200MW electrolyzer to produce green hydrogen.
- Power Source: Powered by an offshore wind farm.
- Use: Will fuel industry and heavy transport.

LNG as a Transition Fuel

The Role of Liquefied Natural Gas

- Transition Argument: Natural gas emits ~50% less CO₂ than coal when burned for power. Can help countries like China and India transition away from coal, reducing emissions rapidly.
- Investment Boom: Massive projects underway in Qatar and the US to expand LNG capacity.
- The Risk: Methane leaks across the value chain (production, liquefaction, shipping) can negate the climate advantage over coal. Methane intensity is the key metric.

Building an ESG Integration Process

01

Establish the boundaries and focus areas before analysis begins.

01

Define eligible assets & scope

02

Identify relevant ESG factors

02

Gather and evaluate all relevant ESG data from multiple sources.

01

ESG scores, disclosures, metrics

02

Assess third-party ESG ratings

03

Flag controversies & red flags

03

Translate data into forward-looking signals and relative positioning.

01

Trend projections & risk horizon

02

Benchmark against sector peers

04

Reflect ESG conviction in asset pricing and portfolio weights.

01

Incorporate ESG into pricing

02

Allocate positions & weights

Maintain accountability through ongoing oversight and transparent reporting.

01

Track holdings & stewardship

02

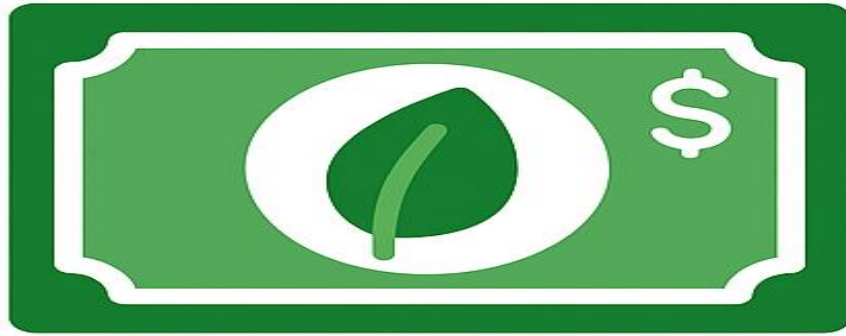
Disclose ESG outcomes & impact

From Data to Decision

- Step 1: Collect raw data (Sustainability report, CDP, news)
- Step 2: Review rating agency outputs (as triage)
- Step 3: Identify material issues for the sector
- Step 4: Analyze company performance on material issues
- Step 5: Compare to peers
- Step 6: Form forward-looking view (trend, momentum)
- Step 7: Adjust valuation model (cost of capital, cash flows)
- Step 8: Investment decision

◦ Sustainable Financing Instruments

Sustainable Financing Instruments



**Green
Bonds**



**Sustainability-
Linked Bonds**



Loans

Green Bonds: Funding Environmental Projects

- Definition: A bond where the proceeds are exclusively applied to finance or re-finance new or existing eligible green projects.
- Use of Proceeds: Typically methane reduction, energy efficiency, CCUS, and renewable energy projects.
- Framework Required: Companies must have a Green Bond Framework, often verified by a second-party opinion (SPO), to ensure credibility.

The Green Bond Market

- The Rise of Green Fixed Income showing growth of green bond issuance
 - 2015: \$50B
 - 2018: \$200B
 - 2021: \$600B
 - 2024: \$1T+
- **Types:**
 - Green Bonds (use of proceeds)
 - Social Bonds
 - Sustainability Bonds
 - Sustainability-Linked Bonds (SLBs)

Green Bond Example: Repsol

- . Example: Repsol's EU Taxonomy-Aligned Bond
- . Issuance: €500 million green bond (2021).
- . Significance: First in the sector to be explicitly aligned with the EU Taxonomy.
- . Use of Proceeds: Energy efficiency upgrades at their refining and chemical complexes.

Sustainability-Linked Bonds & Loans (SLBs/SLLs)

Key Difference: Proceeds are for general corporate purposes (not a specific project). The financial characteristics of the bond/loan (e.g., interest rate) vary based on the company's achievement of ambitious, predetermined Sustainability Performance Targets (SPTs).

- . SPT Examples: Reducing carbon intensity, increasing renewable capacity, lowering methane emissions.
- . Advantage: Directly incentivizes improved corporate-wide performance.

Case Study: Eni's SDG-Linked Bond

- . The Bond: €1 billion bond.
- . Tied To: 1) Renewable installed capacity, 2) Emission reduction in upstream, 3) Reduction in water reinjected.
- . Penalty: If targets are missed, the coupon increases, paying a penalty to investors.

Discussion:

"What are the Meaning , differences , Pros and Cons for the Green bonds against Sustainability-Linked Bonds

Instrument	Meaning	Key Differences	Pros	Cons
Green Bonds	Fixed-income instruments where proceeds are exclusively used to finance or refinance environmentally friendly projects	Proceeds must be allocated to specific green projects.	- Attracts ESG-focused investors. - Enhances issuer's sustainability profile.	- Use-of-proceeds restrictions limit flexibility. - Requires strict reporting & verification.
Sustainability-Linked Bonds (SLBs)	Bonds where financial terms (e.g., coupon rate) are linked to issuer's achievement of sustainability performance targets (SPTs),.	Performance-based: Issuer commits to meet KPIs Proceeds can be used for general purposes.	- Flexible use of proceeds. - Strong incentive for issuer to meet sustainability targets.	- Risk of "greenwashing" if targets are weak. - Complex KPI verification.

Measuring Impact & Performance KPIs

Introduction to Impact Measurement

- . What to Measure: Sector-Specific KPIs
- . Environmental:
 - . Methane Intensity (kg/boe)
 - . Flaring Volume (mcf/day)
 - . CO2 Intensity (kg CO2/boe)
 - . Freshwater Withdrawal Intensity

What to Measure: Sector-Specific KPIs

- . Social:
- . Total Recordable Incident Rate (TRIR)
- . Facilities and provided services
- . Community Investment (\$)
- . Local Hiring %

What to Measure: Sector-Specific KPIs

- . Governance:
- . % of Board with ESG Expertise
- . % of Executive Pay Linked to ESG Metrics
- . Abbreviation: KPI = Key Performance Indicator.

Identifying and Avoiding Greenwashing

Greenwashing or Legitimate Claim?

- . (A) An oil company ad: "We're investing in a future of clean energy."
- . (B) An oil company report: "We reduced methane intensity by 50% in 2023 against a 2015 baseline, verified by third-party audit."
- . Vote on which is likely greenwashing? Why ?.

Greenwashing or Legitimate Claim?

- . (A) An oil company ad: "We're investing in a future of clean energy." (Vague, no metrics)
- . (B) An oil company report: "We reduced methane intensity by 50% in 2023 against a 2015 baseline, verified by third-party audit." (Specific, measurable, verifiable)

What is Greenwashing?

- . Definition: The process of conveying a false impression or providing misleading information about how a company's products or operations are more environmentally sound.
- . It's about: Misleading consumers or investors through spin, vagueness, hidden trade-offs, or a lack of proof.

The Greenwashing Playbook

- How Companies Mislead
 - **Vague Language:** "We're green" without specifics
 - **Cherry-Picking:** Highlight one metric, hide others
 - **Baseline Manipulation:** Changing baseline years to improve progress
 - **Scope Obfuscation:** Reporting only Scope 1, hiding Scope 3
 - **Offsets Over Reliance:** Buying offsets instead of reducing
- **Mismatch:** Marketing vs. CapEx allocation

Technique 1: Vague Language

Spotting the Weasel Words

- **Red Flag Phrases:**

- "We aim to..." (no commitment)
- "Working toward..." (no timeline)
- "Committed to sustainability..." (everyone says this)
- "We care about..." (feelings, not facts)

- **What to Look For:**

- Specific targets (50% reduction by 2030 vs. 2019 baseline)
- SBTi validation
- Annual progress reporting

Technique 2: Cherry-Picking

The Selection Bias Problem

- **Example:** A company reports:
 - "Reduced emissions by 20%" (but only Scope 1)
 - "Improved water efficiency" (but total water use increased due to growth)
 - "Increased renewable energy" (from 2% to 3% - still negligible)
- **Analyst Action:** Look at absolute metrics, not just percentages; look at all scopes; look at intensity vs. absolute

Technique 3: Baseline Manipulation

- Moving the Goalposts
- **Example:**
 - 2015: Company sets target to reduce emissions 20% by 2025 (baseline 2010)
 - 2020: Company resets baseline to 2015, making progress look better
 - 2023: Company reports "50% progress toward goal" (but original goal remains unmet)
- **Analyst Action:** Track original baselines and restatements; question changes

Technique 4: Scope Obfuscation

- Hiding the Full Picture
 - **Above Water (Visible):** Scope 1 (direct emissions) - Reported
 - **Below Water (Hidden):** Scope 2 (energy) - Sometimes reported
 - **Deep Below (Very Hidden):** Scope 3 (supply chain, customers) - Rarely reported
- **Fact:** For most companies, Scope 3 is 80%+ of total
- **Red Flag:** Company reports only Scope 1 and calls it "carbon footprint"

Scope Analysis

- Calculate the Real Footprint
- **Data Provided:** An apparel company reports:
 - Scope 1 (facilities, vehicles): 50,000 tCO₂e
 - Scope 2 (purchased electricity): 30,000 tCO₂e
 - Scope 3 (supply chain, product use, disposal): Not reported
- **Industry Benchmark:** For apparel, Scope 3 is typically 90-95% of total
- **Task:** Estimate the company's true carbon footprint

- **Calculation:**

- If Scope 1+2 = 80,000 tCO₂e

- And this represents 5-10% of total (since Scope 3 is 90-95%)

- Then total footprint = $80,000 / 0.10 = 800,000$ tCO₂e (if 10%)

- Or $80,000 / 0.05 = 1,600,000$ tCO₂e (if 5%)

- **Estimated total:** 800,000 to 1.6M tCO₂e

- **Key Finding:** The company is reporting only 5-10% of its actual impact

Technique 5: Offsets Over Reliance

- The Offset Problem
- **How Offsets Work:** Pay someone else to reduce emissions, count it as your own reduction
- **Controversies:**
 - Additionally (would the reduction have happened anyway?)
 - Permanence (forests can burn)
 - Double counting (multiple entities claim same offset)
- **Red Flag:** Net-zero target with heavy reliance on offsets vs. actual reduction

Technique 6: The Marketing/CapEx Mismatch

- Words vs. Wallet
- **Example:**
 - **Marketing:** "Leading the energy transition"
 - **CapEx:** 90% to fossil fuels, 10% to renewables
- **Analyst Action:** Compare sustainability rhetoric to capital allocation
- **Data Source:** CapEx disclosure, segment reporting

Comprehensive Greenwashing Detection

- Put It All Together
- **Case:** "Green Energy Corp" - a utility company
- **Materials Provided:**
 - CEO letter (1 page)
 - Sustainability report highlights (2 pages)
 - Financial statements excerpt (CapEx table)
 - ESG rating summary (two agencies)
- **Task:** Identify at least 3 greenwashing techniques being used

- **Findings:**

- CEO letter uses vague language ("committed to green future") without targets
- Sustainability report cherry-picks (highlights renewable investments, ignores gas)
- CapEx shows 80% to gas, 20% to renewables (mismatch)
- Scope 3 not reported (omission)
- One rating agency gives high score (methodology issue)
- Company uses offsets for 50% of claimed reduction

- **Conclusion:** Significant greenwashing; investment thesis requires caution

The Evolving Regulatory Landscape

Key Regulations Affecting



Compliance is becoming mandatory and complex, especially for companies operating globally. Ignorance is not a defense.

EU SFDR & CSRD Deep Dive

- SFDR (Sustainable Finance Disclosure Regulation): Requires financial actors (asset managers, insurers) to classify funds and disclose sustainability risks. This puts O&G holdings under intense scrutiny and could limit investor appetite.

EU SFDR & CSRD Deep Dive

. CSRD (Corporate Sustainability Reporting Directive): Requires all large companies operating in the EU to report on their sustainability performance using mandatory European Sustainability Reporting Standards (ESRS). This is a game-changer for disclosure breadth and depth.

IFRS Sustainability Disclosure Standards

A Global Baseline: The ISSB Standards

- . ISSB: The International Sustainability Standards Board (under the IFRS Foundation).
- . While the EU's CSRD is very broad, the ISSB is focused on financial materiality—what matters to investors. Many countries are now adopting ISSB standards.

IFRS Sustainability Disclosure Standards

- . IFRS S1: General Requirements for Disclosure of Sustainability-related Financial Information.
- . IFRS S2: Climate-related Disclosures (heavily based on TCFD).
- . Goal: To create a global baseline of sustainability disclosures to reduce complexity and improve comparability for investors.

	ISSB	EU CSRD	US SEC Proposed Rules
Focus	Single, global baseline. Financial materiality.	Comprehensive sustainability. Double materiality.	Financial materiality. Climate risk as a financial risk.
Scope	Value chain (Scope 3) emissions if material.	Entire value chain.	Scope 1 & 2; Scope 3 if material or included in guidance.
Assurance	Not initially required, but expected to evolve.	Required (limited then reasonable assurance).	Required for large accelerated filers (Scope 1 & 2).

The Stranded Asset Risk

- . Definition: The risk that fossil fuel assets (reserves, pipelines, refineries) lose their economic value before the end of their useful life due to climate policy, market shifts (cheaper renewables), or new technology.
- . Implication: Companies could be left with worthless assets on their books, leading to massive write-downs
- . This is the fundamental long-term risk for the sector. It questions the very value of the core inventory of an oil company—its oil and gas reserves.

Stranded Asset Case Study: BP Write-Down

- . The Action: BP wrote down \$17.5 billion of assets.
- . The Reason: Cited a weaker long-term outlook for oil and gas prices due to the energy transition and the pandemic.
- . The Significance: A major acknowledgment by a oil giant that a significant portion of its portfolio may not be economically viable in a decarbonizing world.
- . This was a watershed moment. It showed that strident is not a future theoretical risk but a present-day accounting reality.

Other Key Investment Risks

A Risky Landscape: Beyond Stranded Assets

- . Political & Regulatory Risk: Changing governments can alter climate policies (e.g., subsidies, taxes, drilling permits) overnight, creating uncertainty.
- . Market Volatility: Oil prices are inherently volatile. ESG pressures add another layer of uncertainty and can lead to sudden sell-offs.

Other Key Investment Risks

A Risky Landscape: Beyond Stranded Assets

- . Data Inconsistencies: Lack of standardized, audited ESG data makes comparing companies difficult and increases due diligence costs and the risk of error.
- . Reputational Risk: Association with environmental disasters or social conflicts can scare off investors, customers, and talent, even if the company is not directly at fault.

Five Forces Reshaping Capital Markets

- **Regulatory:** EU Action Plan, disclosure mandates, taxonomies
- **Investor Demand:** \$35 trillion in assets signatory to PRI
- **Beneficiary Pressure:** Millennials/Gen Z inheriting \$30 trillion
- **Financial Materiality:** Evidence of ESG impact on performance
- **Societal Shifts:** Climate activism, social justice movements

Rank the Priorities

- **Task:** For each industry below, rank the top 3 most material ESG factors
 - **Industry A:** Mining Company (operates in developing countries)
 - **Industry B:** Retail Bank (consumer-facing, regulated)
 - **Industry C:** SaaS Company (cloud-based, global workforce)
- **Deliverable:** Be prepared to defend your rankings

Top 3 Material Factors for Mining:

- **Governance:** License to operate, corruption risk, joint venture oversight
- **Environmental:** Tailings dam safety, water usage, emissions
- **Social:** Community relations, indigenous rights, worker safety
- **Why:** Mining is capital-intensive, long-cycle, and physically disruptive. Social license is essential.

Top 3 Material Factors for Retail Bank:

- **Governance:** Risk culture, compliance, whistleblower programs
- **Social:** Data privacy, cybersecurity, financial inclusion
- **Environmental:** Financed emissions (indirect impact via lending portfolio)
- **Why:** Banks are regulated entities whose primary asset is trust. Risk management is paramount.

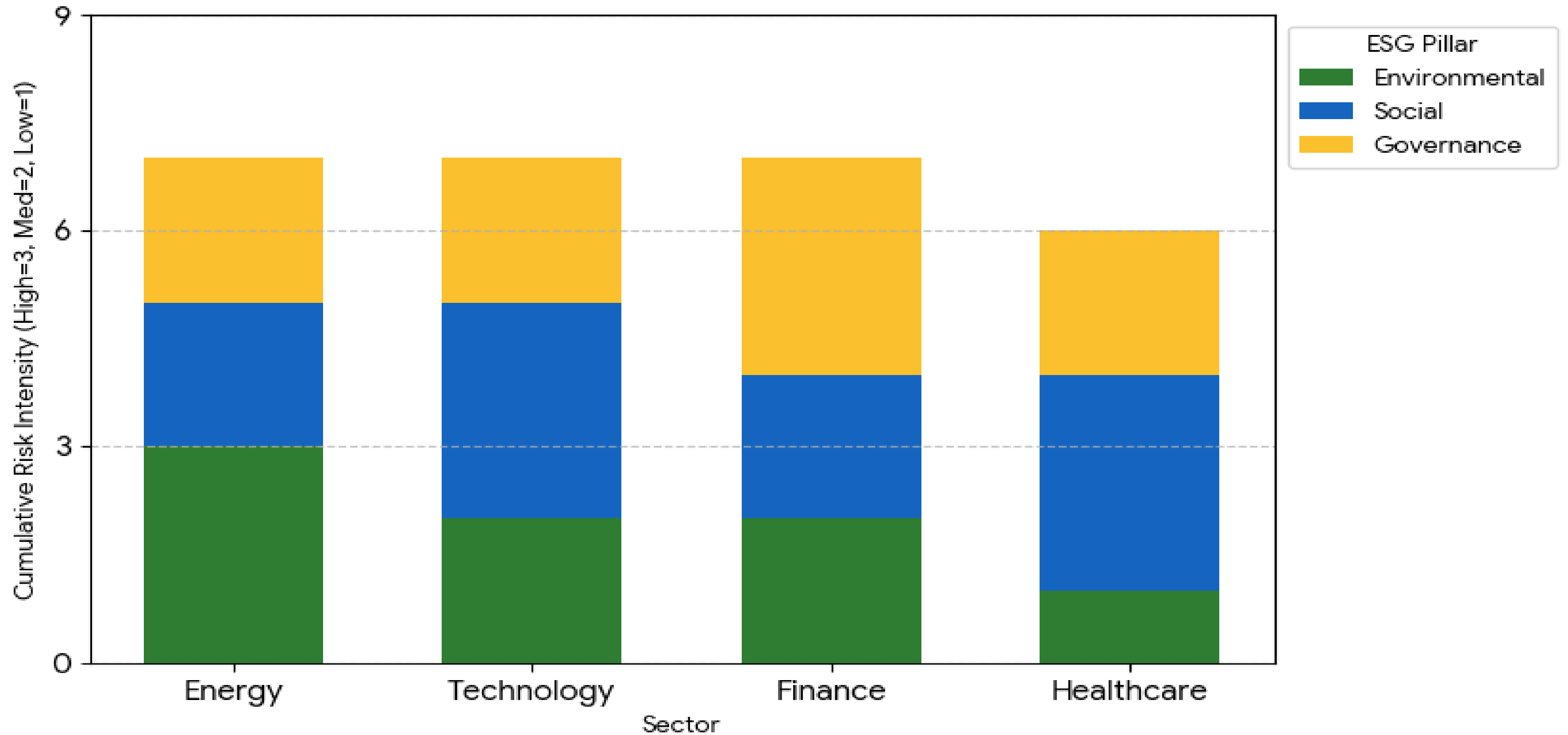
Top 3 Material Factors for SaaS Company:

- **Social:** Data privacy, AI ethics, talent management
- **Governance:** Board oversight of technology risk, IP protection
- **Environmental:** Energy consumption of data centers (Scope 2 emissions)
- **Why:** SaaS companies are people and IP businesses. Human capital and data are critical.

Not All Factors Are Created Equal

- **Oil & Gas:** Emissions, Water, Safety, Community Relations
- **Banks:** Data Security, Inclusion, Risk Management
- **Healthcare:** Access, Pricing, Ethics
- **Technology:** Privacy, Supply Chain, E-waste
- **Real Estate:** Energy, Water, Resilience

ESG Risk Exposure by Industry



Data Challenges and Verification

Inconsistency: Companies report different metrics in different ways.

- . Estimation vs. Measurement: Much ESG data, especially methane, has been based on engineering estimates. The shift to satellite and sensor measurement is a game-changer.
- . Third-Party Assurance: Having auditors like KPMG or Deloitte verify ESG data, just as they do financial data.

. **AI and ESG**

- . How AI can analyze vast amounts of data (news, reports, social media, satellite imagery) to create real-time ESG scores.
- . Automating ESG performance scoring for energy companies, providing a more objective view.

Benefits of AI in ESG Scoring

- . Enhanced Accuracy and Speed: AI automates data collection and analysis, reducing human errors and accelerating reporting processes.
- . Regulatory Compliance: Ensures adherence to frameworks like CSRD, IFRS S1/S2, and TCFD by automating compliance checks.
- . Real-Time Insights: Provides dynamic dashboards and scenario modeling for proactive decision-making.

Benefits of AI in ESG Scoring

- . Scalability: AI tools can handle large volumes of data, making them suitable for organizations of all sizes.
- . Transparency and Auditability: Links KPIs to their sources, enhancing trust and verifiability in ESG reports.

Some AI tools use for ESG scoring

Analytika , GreenFi , Sopact and many other programs

Considerations

Data Quality: The effectiveness of AI tools depends on the quality of input data. Inaccurate or incomplete data can lead to misleading insights.

Regulatory Alignment: Organizations must ensure that AI tools are updated to comply with the latest regulations and standards.

Integration: Seamless integration with existing systems is crucial for maximizing the benefits of AI-driven ESG scoring tools

The Data Ecosystem

- Ecosystem map showing:
 - **Data Providers:** Bloomberg, Refinitiv, FactSet
 - **Rating Agencies:** MSCI, Sustainalytics, ISS, S&P
 - **Raw Data Sources:** Company disclosures, government databases, NGOs, media
 - **End Users:** Asset managers, asset owners, banks, consultants

How Well Do Ratings Agree?

Scatter plot matrix showing correlations of 0.3-0.5 between major agencies

- **Data Source:** Christensen, Serafeim, Sikochi (2022) - "Why is there a divergence in ESG ratings?"
- **Key Finding:** Correlation between MSCI and Sustainalytics is ~0.4 - meaning they disagree more than they agree
- **Implication:** Rating is a function of methodology, not just company quality

Three Sources of Disagreement

– **Scope:** What is measured?

- Agency A includes Scope 3 emissions, Agency B doesn't
- Agency A includes supply chain labor, Agency B doesn't

– **Measurement:** How is it measured?

- Binary yes/no vs. continuous scale
- Policy existence vs. policy implementation
- Self-reported vs. verified data

– **Weighting:** How important is it?

- Agency A weights Governance at 33%, Agency B at 20%
- Materiality frameworks differ

Case Study in Rating Disagreement

- **Header: Visual:** Two ratings side-by-side
- **MSCI ESG (2023): AAA (Leader)**
 - Rationale: Product innovation, mission critical for transition
 - Focus: Positive environmental impact through products
- **Sustainalytics (2023): Severe Risk (Bottom Decile)**
 - Rationale: Labor relations, board structure, controversial sourcing
 - Focus: Operational risks and governance
- **Discussion:** Both are "right" within their methodology. Which matters more for investment?

Compare Two Ratings for One Company

- **Task:** We'll look at a real company (e.g., Nestlé, Shell, Amazon) and its ratings from two different agencies
- **Materials Provided:**
 - MSCI rating report excerpt
 - Sustainalytics rating report excerpt
- **Questions:**
 - What factors drove the MSCI score?
 - What factors drove the Sustainalytics score?
 - Which factors are most material for this industry?
 - If you were the analyst, which rating would you rely on more?

The Integrated Financial Statement Framework

Seeing the Full Picture

- **Visual:** Three interlocking circles (IS, BS, CF) with ESG factors embedded in each
- **Core Principle:** Sustainability factors are not separate - they are embedded in financial performance
- **Analyst Mindset:** Every line item has a sustainability angle

Income Statement

- Sales/ Revenues
- COGS “Cost of Goods Sold”
- S,G & A Expenses “Sales, General & Admin”
- Depreciation
- Provisions
- Interest income/ expense
- Other income/ expense
- Taxes
- Sale of plant
- Other unusual item

- Net Income

Balance Sheet

تعالوا دي " assets = liabilities + owner's equity " بس



Assets

- Cash & cash equivalent
- Accounts Receivables
- Inventory (RM, WIP, FG & GIT)
- Advanced payments (to suppliers)
- Other current assets

- Fixed assets

- Investments
- Due from sister companies
- Deferred tax assets
- Prepaid expenses
- Intangible assets (Goodwill)

Liabilities

- Short term debt
 - Current portion of long term debt
 - Accounts payable
 - Accrued expenses
 - Down payments (from customers)
 - Taxes payable
 - Interest payable
 - Dividends payable
 - Due to sister companies
 - Other current liabilities
-
- Long term debt

Equity

- Common Stock
- Additional paid in capital
- Retained earnings
 - +/- Profit/Loss of the year
 - - Dividends
- Ongoing Owner's account
- Equity Reserves

Financial Ratios

Sales & Profitability Ratios

- Sales Growth rate (%)  The higher the better

Year 1	Year 2	Year 3
10%	15%	20%
5%	0%	-4%

- Cost of Goods Sold (COGS)/Sales (%)  The lower the better

Year 1	Year 2	Year 3
70%	71%	73%
70%	70.5%	69%
85%	90%	92%

Financial Ratios

- S,G & A expenses/Sales (%)



Year 1	Year 2	Year 3
3%	3.5%	4.2%
4%	3.8%	3.5%
7%	8%	12%

- Return on Sales (%)



Year 1	Year 2	Year 3
5%	7%	8%
2%	2%	3%

Financial Ratios

- Return on Assets (%) 

Year 1	Year 2	Year 3
30%	32%	35%
10%	15%	17%

- Return on Equity (%) 
“compared to the prevailing interest in the market”

Year 1	Year 2	Year 3
15%	18%	20%
5%	7%	8%

Financial Ratios

Working Investment Needs

= Trading assets – Spontaneous finance

(Inventory+	(Payables+
Receivables+	Accrued Expenses+
Advanced Payments)	Down Payments)

- WIN = Inventory – Payables
= 50 – 50 = 0
- WIN = Inventory – Payables
= 100 – 50 = 50 (Financial Gap needed, to finance the required Trading Assets)

Financial Ratios

Working Investment Needs

- ✓ Represents the amount of **funds required** to be financed by external sources - rather than spontaneous finance – namely banks or equity.
- **WIN** = Inventory – (Payables + Down payments)
= 50 – (50+10) = 50 – 60 = **-10**

Financial Ratios

Working Investment Needs

- The spontaneous finance is **sufficient** to finance all the trading assets. In this case, it will be hard to justify granting short term credit facilities unless:
 - ✓ The company is planning to increase its sales (i.e. there will be a projected working investment need).
 - ✓ The company will extend the credit tenor of its clients (AR will increase).
 - ✓ The company will change its inventory policy (Inventory will increase).

Financial Ratios

- Assets' Efficiency:
- **AR DOH**
 - Matching Co. Sales Policy
 - In Trend with historical years
 - Industry Norm

Year 1	Year 2	Year 3
60	70	65
60	80	125

- Noting that the co. sales policy is on credit terms up to 90 days. (Average collection period)

Financial Ratios

- **AP DOH** — Matching Co. Purchase Policy
— In Trend with historical years
— Industry Norm

Year 1	Year 2	Year 3
40	50	45
60	80	100

- Noting that the co. Purchase policy is on credit terms up to 60 days. (Average Payment period)

Financial Ratios

- **Inv. DOH** — Matching Co. Storage Policy
— In Trend with historical years
— Industry Norm

Year 1	Year 2	Year 3
50	60	70
110	120	130

- Noting that the co. Storage policy is up to 90 days.
(Average storage period)

Financial Ratios

Capital Structure

- Current Ratio = Current Assets/ Current liabilities
 - Favorable more than 1
- = $50/50 = 1$
- = $100/50 = 2$, this means that CA can cover CL 2 times.
- = $50/100 = 0.5$, this means that CA can cover only half of CL.

Financial Ratios

- Net working capital
= Current assets – Current liabilities
 - = $100 - 70 = 30$
 - The difference represent a buffer.
- = $50 - 70 = -20$
- **Negative** working capital means that a company's current assets are not sufficient to meet its short-term liabilities.

Financial Ratios

- Leverage = Total Liabilities/ Total Equity
- A measure of how much a company is relying on **creditors** compared to **equity** to fund its assets.
- $50/100 = 0.5$
- $150/100 = 1.5$
- Favorable less than 1

Financial Ratios

Cash Flow

- Provides cash based information, not accrual based info. like the income statement.
- The income statement reflects revenues when earned rather than when cash is collected.
- If the cash flowing **into** a business does not meet the cash flowing **out**, then the company will be unable to meet its debt obligations and could be forced out of business.

Financial Ratios

Cash Flow

➤ Cash from:

- operating activities
- Investing activities
- Financing activities

- If cash from operating activities is negative, it means the co. increased its CA (use of cash).

➤ Net Cash Flow

- Favorable +ve value

Financial Ratios

Debt Service Ratio

➤ DSR

- Favorable larger than 1
- shows that the company has sufficient cash to cover its financial payments (loans) and equity obligations (Dividends).

The Income Statement: ESG Entry Points

- Where ESG Hits the P&L
- **Visual:** Sample income statement with ESG annotations
 - **Revenue:** Green product share, revenue at risk from regulation
 - **COGS:** Raw material costs (water, energy), supply chain labor
 - **SG&A:** Employee turnover costs, compliance costs
 - **R&D:** Investment in sustainable innovation
 - **Tax:** Carbon taxes, tax strategy (G factor)
 - **One-time items:** Fines, settlements, impairment

Revenue at Risk Analysis

Quantifying Exposure

- **Formula:** Revenue at Risk = Revenue from exposed products × Probability of regulatory change
- **Example:** Auto manufacturer with 40% revenue from internal combustion vehicles
 - Scenario: 2030 ICE ban in Europe (30% of sales)
 - Revenue at Risk = 40% × 30% = 12% of total revenue
- **Analyst Action:** Adjust growth forecasts downward for exposed segments

Green Revenue Classification

What Counts as "Green"?

- **EU Taxonomy Approach:** Activity must:
 - Substantially contribute to environmental objective
 - Do no significant harm to other objectives
 - Meet minimum social safeguards
- **Challenge:** Companies define "green" loosely - analyst must verify
- **Example:** A utility calling natural gas "transition" vs. EU Taxonomy excluding gas (with phase-outs)

Green Revenue Growth

- Green Revenue Outperforming
- **Visual:** Line chart comparing growth rates
 - Green revenue (renewables, efficiency, circular): +15% CAGR
 - Brown revenue (fossil fuels, traditional): +3% CAGR
- **Implication:** Companies with higher green revenue share have better growth prospects

Operating Expenses: The Efficiency Opportunity

- Cost Savings Through Sustainability
- **Examples:**
 - **Energy efficiency:** LED lighting, HVAC upgrades → Lower utility expense
 - **Water efficiency:** Recycling, low-flow → Lower water expense
 - **Waste reduction:** Circular processes → Lower disposal expense
 - **Employee retention:** Lower turnover → Lower recruiting/training expense
- **Analyst Action:** Model margin expansion from sustainability initiatives

Income Statement Impact Assessment

- **Scenario:** A manufacturing company implements a comprehensive sustainability program
- **Data Provided:**
 - Energy cost: \$10M/year, expected savings: 15%
 - Water cost: \$2M/year, expected savings: 20%
 - Waste disposal: \$1M/year, expected savings: 30%
 - Employee turnover: 20% (cost per turnover: \$50,000, 1,000 employees)
 - New green product line: Expected revenue \$20M in Year 1, growing to \$100M by Year 5
- **Task:** Calculate Year 1 impact on operating income

Income Statement Impact Assessment

- **Calculations:**

- Energy savings: $\$10\text{M} \times 15\% = \1.5M

- Water savings: $\$2\text{M} \times 20\% = \0.4M

- Waste savings: $\$1\text{M} \times 30\% = \0.3M

- Turnover reduction: Assume turnover drops to 15% (5% improvement)

- Old cost: $200 \text{ employees} \times \$50,000 = \$10\text{M}$

- New cost: $150 \text{ employees} \times \$50,000 = \$7.5\text{M}$

- Savings: $\$2.5\text{M}$

- Green revenue: $\$20\text{M}$ (assume 10% margin = $\$2\text{M}$ operating income)

- **Total Income Impact:** $\$1.5 + 0.4 + 0.3 + 2.5 + 2.0 = \6.7M (vs. baseline)

The Balance Sheet: ESG Entry Points

- Where ESG Hits the B/S
- **Visual:** Sample balance sheet with ESG annotations
 - **Assets:**
 - PP&E: Stranded asset risk
 - Goodwill: Impairment risk from transition
 - Intangibles: Brand value (reputational risk)
 - **Liabilities:**
 - Provisions: Decommissioning, remediation
 - Contingent liabilities: Lawsuits, regulatory actions
 - **Equity:**
 - Reserves for sustainability initiatives
 - Green equity story (valuation premium)

Stranded Assets: The Next Wave

- **Definition:** Assets that suffer unanticipated write-downs due to transition
- **High-Risk Sectors:**
 - Fossil fuel reserves (oil, gas, coal)
 - High-emission power generation (coal plants)
 - Internal combustion engine capacity
 - Real estate in flood zones
- **Analyst Action:** Stress-test asset values under different climate scenarios

Provisions: The Hidden Liability

- Are Reserves Adequate?
- **Types of Provisions:**
 - Asset retirement obligations (oil rigs, mines, nuclear plants)
 - Environmental remediation (polluted sites)
 - Product warranties (green products may have different risk profiles)
- **Red Flag:** Provisions are understated due to optimistic assumptions
- **Example:** Deepwater Horizon - BP's initial provision was \$20B, final cost >\$60B

Is This Provision Sufficient?

- **Case:** A mining company has a \$500M provision for tailings dam closure
- **Facts:**
 - 5 tailings dams, average age 40 years
 - Industry average closure cost per dam: \$150-300M
 - New regulations after Brumadinho disaster require higher standards
 - Company discount rate used: 8% (vs. risk-free rate of 3%)
- **Task:** Assess whether the provision is adequate

Is This Provision Sufficient?

Analysis:

- Potential cost: 5 dams × \$200M (midpoint) = \$1B
- Provision: \$500M (50% of potential)
- Discount rate: 8% is high (undervalues liability)
- New regulations likely increase costs
- **Conclusion:** Provision likely inadequate by \$300-500M
- **Analyst Action:** Add back to debt in leverage calculations

The Cash Flow Statement: ESG Entry Points

– Operating Cash Flow:

- Carbon credit purchases/sales
- Fines/penalties paid

– Investing Cash Flow:

- Green CapEx vs. Brown CapEx
- Acquisitions of sustainable businesses

– Financing Cash Flow:

- Green bond proceeds
- Sustainability-linked loan proceeds

Green CapEx vs. Brown CapEx

- The Most Important Metric You're Not Tracking
- **Definition:**
 - **Green CapEx:** Investment in low-carbon, circular, sustainable activities
 - **Brown CapEx:** Investment in high-carbon, extractive, traditional activities
- **Why It Matters:** CapEx reveals true strategy (beyond marketing)
- **EU Taxonomy:** Requires disclosure of "Taxonomy-aligned" CapEx

CapEx Allocation by Sector

Where Are Companies Investing?

- **Visual:** Stacked bar chart for major oil companies
 - Shell: Green CapEx 15%, Brown CapEx 85%
 - BP: Green CapEx 12%, Brown CapEx 88%
 - TotalEnergies: Green CapEx 18%, Brown CapEx 82%
 - Orsted: Green CapEx 95%, Brown CapEx 5%
- **Implication:** Orsted is a transition story; majors are still predominantly brown

Cash Flow Analysis

- Analyze This Cash Flow Statement
- **Data Provided:** Excerpt from a utility's cash flow statement
 - Operating Cash Flow: \$2.5B
 - CapEx - Renewables: \$300M
 - CapEx - Gas Plants: \$700M
 - CapEx - Grid Maintenance: \$200M
 - Acquisitions: \$400M (gas distribution company)
 - Green Bond Issued: \$500M
- **Task:**
 - Calculate Green CapEx % of total CapEx
 - Identify any disconnect between financing and investing
 - Assess whether the company is transitioning or staying

- **Analysis:**

- Total CapEx: \$300M + \$700M + \$200M = \$1.2B
- Green CapEx: \$300M (renewables) = 25%
- Brown CapEx: \$700M (gas) = 58%
- Acquisitions: \$400M (gas) - brown expansion
- Green Bond: \$500M - but only \$300M to renewables

- **Conclusion:** Company raised green funds but continued investing heavily in gas. CapEx mix suggests slow transition. Marketing likely ahead of reality.

ESG-Adjusted Ratio Analysis

- **Three Key Ratios to Adjust:**
 - Profitability (ROE, ROA, ROIC)
 - Efficiency (Asset Turnover)
 - Leverage (Debt/EBITDA, D/E)
- **Adjusting Profitability Ratios**
- **Traditional ROIC:** $\text{NOPAT} / \text{Invested Capital}$
- **ESG-Adjusted ROIC:**
 - **Numerator:** $\text{NOPAT} - \text{Estimated carbon cost} - \text{Litigation provisions} - \text{Fines}$
 - **Denominator:** $\text{Invested Capital} + \text{Contingent liabilities} + \text{Understated provisions}$
- **Result:** More conservative view of true economic return

Calculate ESG-Adjusted ROIC

- Applying the Adjustment
- **Data Provided:**
 - NOPAT: \$500M
 - Invested Capital: \$4,000M
 - Estimated carbon tax exposure: \$20M/year
 - Pending lawsuit provision (not booked): \$50M
 - Underfunded decommissioning: \$100M
- **Task:**
 - Calculate traditional ROIC
 - Calculate ESG-adjusted ROIC
 - Compare and interpret

- **Calculations:**

- Traditional ROIC: $\$500\text{M} / \$4,000\text{M} = 12.5\%$

- Adjusted NOPAT: $\$500\text{M} - \$20\text{M} = \$480\text{M}$

- Adjusted Capital: $\$4,000\text{M} + \$50\text{M} + \$100\text{M} = \$4,150\text{M}$

- Adjusted ROIC: $\$480\text{M} / \$4,150\text{M} = 11.6\%$

- **Interpretation:** ESG risks reduce ROIC by ~0.9 percentage points. The company is less profitable than traditional metrics suggest

Adjusting Efficiency Ratios

Carbon Efficiency

- **New Metric:** Revenue / Tons CO₂e
- **Use Case:** Compare two utilities
 - Utility A: \$1,000 revenue / ton CO₂e
 - Utility B: \$500 revenue / ton CO₂e
- **Implication:** Utility A is more carbon-efficient and less exposed to carbon tax

Adjusting Leverage Ratios

Debt with Climate Risk

- **Traditional Debt/EBITDA:** Total Debt / EBITDA
- **Adjusted Debt/EBITDA:**
 - **Numerator:** Total Debt + Off-balance sheet liabilities (decommissioning) + Contingent liabilities
 - **Denominator:** EBITDA - Estimated carbon cost
- **Result:** Higher, more realistic leverage ratio

Comprehensive Ratio Analysis

- Case:** Compare two companies
- Data Provided (summary table):**
- Task:** Calculate and compare:
 - Traditional Debt/EBITDA
 - ESG-Adjusted Debt/EBITDA
 - Carbon Efficiency
 - Which company is riskier?

Metric	Company X	Company Y
Revenue	\$100B	\$100B
EBITDA	\$30B	\$25B
Total Debt	\$40B	\$30B
Decommissioning Liability	\$10B	\$30B
Emissions (MtCO2e)	50	30
Green CapEx %	5%	20%

- **Calculations:**

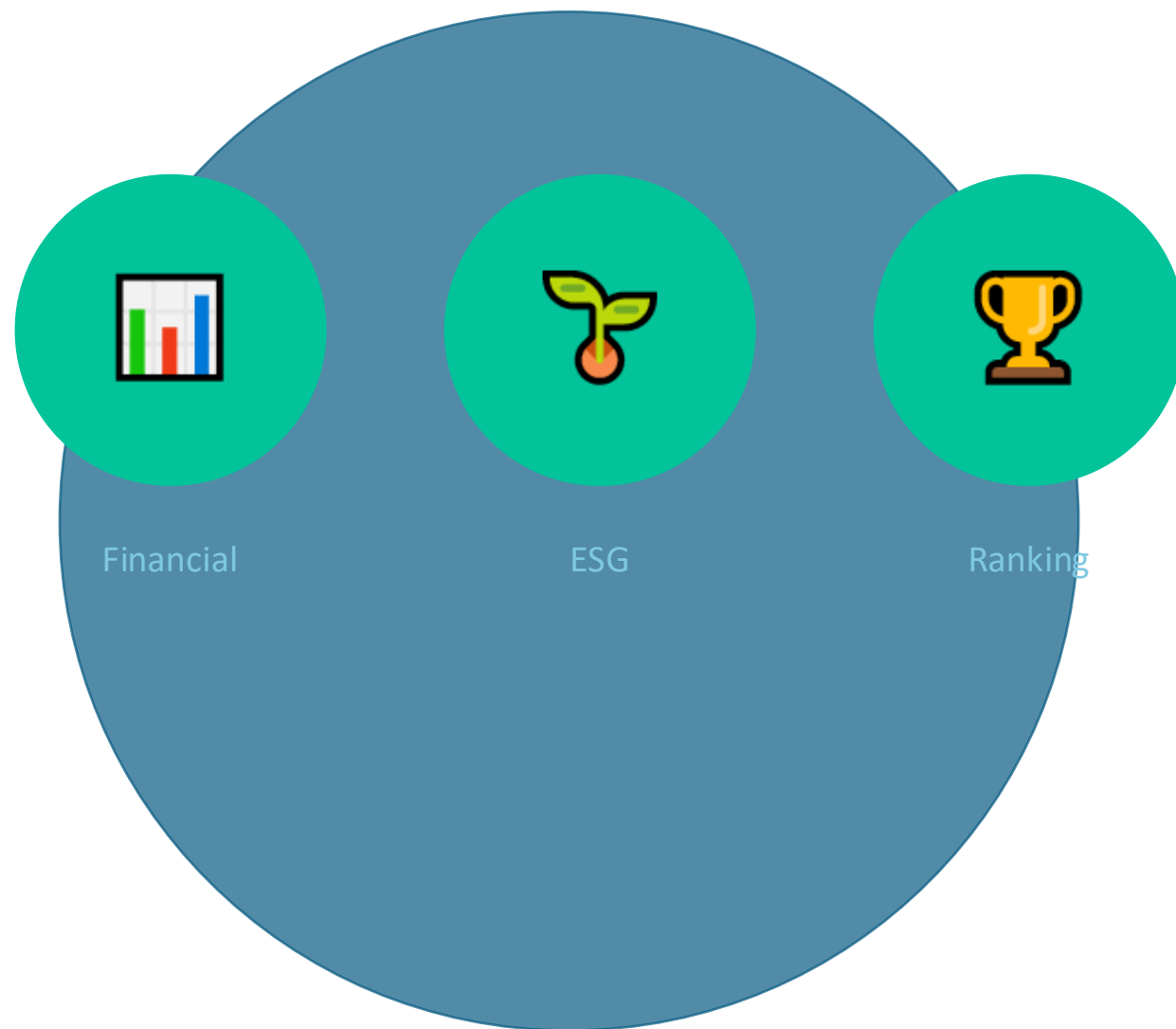
- **Company X:**

- Traditional D/EBITDA: $40/30 = 1.33x$
 - Adjusted D/EBITDA: $(40+10)/30 = 1.67x$
 - Carbon Efficiency: $100/50 = \$2B \text{ revenue/Mt}$

- **Company Y:**

- Traditional D/EBITDA: $30/25 = 1.20x$
 - Adjusted D/EBITDA: $(30+30)/25 = 2.40x$
 - Carbon Efficiency: $100/30 = \$3.33B \text{ revenue/Mt}$

- **Conclusion:** Company Y looks safer traditionally ($1.20x$ vs $1.33x$) but is much riskier after ESG adjustment ($2.40x$ vs $1.67x$). Carbon efficiency favors Y.
- **Final:** Company X has lower hidden leverage; Company Y has lower emissions. Risk assessment depends on which factor matters more.



Financial & ESG Analysis

ROA · ROE · Profit Margin · ESG Ranking · Investment Decision

Task 1: Calculate Ratios

Task 2: Rank Companies

Task 3: Best Investment



Dataset Overview

Raw inputs used for all calculations in this exercise

Company	Revenue	Net Income	ESG Score	Carbon Intensity	Total Assets	Total Equity
Company A	10,000	1,500	85	0.35	10,000	5,000
Company B	9,000	1,200	70	0.65	15,000	7,500
Company C	12,000	1,800	90	0.30	12,000	6,000

Formulas Used:

ROA = Net Income ÷ Total Assets | ROE = Net Income ÷ Total Equity | Profit Margin = Net Income ÷ Revenue

01

Step 1 — Calculations: Company A

Applying the three financial ratio formulas to Company A's data

Profit Margin

Net Income ÷ Revenue

1,500

÷

10,000

=

15%

Return on Assets (ROA)

Net Income ÷ Total Assets

1,500

÷

10,000

=

15%

Return on Equity (ROE)

Net Income ÷ Total Equity

1,500

÷

5,000

=

30%

01

Step 1 — Calculations: Company B

Applying the three financial ratio formulas to Company B's data

Profit Margin

Net Income ÷ Revenue

1,200

÷

9,000

=

13.33%

Return on Assets (ROA)

Net Income ÷ Total Assets

1,200

÷

15,000

=

8%

Return on Equity (ROE)

Net Income ÷ Total Equity

1,200

÷

7,500

=

16%

⚠ Company B's ROA of 8% and ROE of 16% are significantly below A and C — driven by lower margins and a larger asset base.

01

Step 1 — Calculations: Company C

Applying the three financial ratio formulas to Company C's data

Profit Margin

Net Income ÷ Revenue

1,800

÷

12,000

=

15%

Return on Assets (ROA)

Net Income ÷ Total Assets

1,800

÷

12,000

=

15%

Return on Equity (ROE)

Net Income ÷ Total Equity

1,800

÷

6,000

=

30%

✓ Company C matches Company A on all ratios — but with higher absolute net income (1,800 vs 1,500), making it the stronger financial performer.

Step 1 — Summary of All Calculations

All three companies compared side-by-side across every financial ratio

Company	Profit Margin	ROA	ROE	Net Income
Company A	15%	15%	30%	1,500
Company B	13.33%	8%	16%	1,200
Company C	15%	15%	30%	1,800

 A & C share identical ratios (PM 15%, ROA 15%, ROE 30%), but Company C earns higher absolute income (1,800 vs 1,500). Company B lags on all three metrics — weakest across the board.

Step 2 — Financial Performance Ranking

Ranking companies by profitability and asset/equity efficiency



Company C

Highest absolute net income (1,800) + strong ROA (15%) & ROE (30%)

PM

15%

ROA

15%

ROE

30%



Company A

Same ratios as C but lower net income (1,500) — equally efficient, smaller scale

PM

15%

ROA

15%

ROE

30%



Company B

Weakest across all metrics — lowest margin (13.33%), ROA (8%), ROE (16%)

PM

13.33%

ROA

8%

ROE

16%

Step 2 — ESG Performance Ranking

Ranking companies by ESG score and carbon intensity (lower = greener)



Company C

Highest ESG score + lowest carbon intensity

ESG Score

90

Carbon Intensity

0.30



Company A

Strong ESG profile, slightly higher carbon than C

ESG Score

85

Carbon Intensity

0.35



Company B

Lowest ESG score + highest carbon intensity

ESG Score

70

Carbon Intensity

0.65

Step 3 — Best Sustainable Investment Candidate

Combining financial strength + ESG leadership to identify the optimal choice



COMPANY C — Best Overall Sustainable Investment

Financial Strengths

- ✓ Highest Net Income: 1,800
- ✓ Profit Margin: 15%
- ✓ ROA: 15% — Efficient asset use
- ✓ ROE: 30% — Strong equity returns
- ✓ Outperforms B on every metric

ESG Strengths

- ✓ Highest ESG Score: 90 / 100
- ✓ Lowest Carbon Intensity: 0.30
- ✓ Best environmental stewardship
- ✓ Strong governance profile
- ✓ #1 in both ESG dimensions

 **Key Insight:** A strong ESG investment must deliver high returns (ROE), efficient asset use (ROA), and low environmental risk — Company C leads on all fronts.

Final Answer — Exam Style Summary



Best Financial Performer

Company C

Highest income · Strong ROA & ROE



Best ESG Performer

Company C

ESG 90 · Carbon 0.30



Best Sustainable Investment

Company C

Dominates both dimensions

Key Insight

A strong ESG investment is not just 'green'. It must also deliver:

- **High returns:** ROE — rewarding equity holders
- **Efficient operations:** ROA — productive use of assets
- **Low environmental risk:** Carbon intensity — planet-aligned

Risk & Return: The ESG Impact

How ESG Changes the Equation

- **Visual:** Risk-return scatter plot
 - **High ESG:** Potentially lower risk, similar return
 - **Low ESG:** Potentially higher risk, similar or higher return (brownium)
- **Key Debate:** Does ESG alpha exist, or is it just risk mitigation?

The Concept of "Brownium"

A Premium for Pollution?

- **Theory:** As capital flees "brown" sectors, their cost of capital rises, and stock prices fall to levels that offer higher expected returns
- **Evidence:** Some studies show "brown" stocks outperforming during certain periods
- **Implication:** A portfolio that excludes brown may sacrifice short-term returns for long-term resilience
- **Analyst Question:** Is brownium a risk premium or a mispricing?

Risk Premium Debate

- Debate: Is Brownium Real?
- **Two Positions:**
 - **Position A:** Brownium exists. Investors should hold brown stocks for higher returns, hedging the risk.
 - **Position B:** Brownium is compensation for risk that will materialize. Avoid brown stocks.
- **Task:** Prepare arguments for both sides.

- **Arguments for Brownium:**

- Capital exodus creates pricing opportunity
- Transition will take decades; companies can adapt
- Valuation discounts already price in risk

- **Arguments Against:**

- Risks are systemic and unpredictable
- Stranded assets will destroy value
- Regulatory trajectory is clear and accelerating
- Engagement can drive transition

- **Conclusion:** Depends on time horizon, risk tolerance, and engagement capability

The "Greenium" Explained

Do Green Bonds Price Differently?

- **Definition:** Greenium = Yield advantage of green bonds over conventional
- **Evidence:** Typically 2-8 basis points tighter
- **Drivers:**
 - Excess demand from ESG-focused investors
 - Limited supply
 - Perception of lower risk
- **Implication:** Issuers benefit; buyers accept slightly lower yields for impact

Green Bond Analysis

- Compare Two Bonds
- **Data Provided:**
 - **Bond A (Green):** 10-year, 3.5% coupon, issued by utility for renewable projects
 - **Bond B (Conventional):** 10-year, 3.6% coupon, same issuer, general purposes
- **Task:**
 - Calculate the greenium
 - Assess whether the greenium is worth accepting
 - Consider impact reporting and verification

- **Analysis:**

- Greenium = $3.6\% - 3.5\% = 10$ basis points
- On a \$1,000 bond, that's ~\$10/year in forgone interest
- Impact: \$500M proceeds to renewables (~200 MW capacity)
- Reporting: Second-party opinion, annual impact report

- **Decision:** Depends on investor's impact objectives and yield requirements

- **Key Question:** Is the impact worth 10bps?

Modern Portfolio Theory Review

- **Key Concepts:** (High risk , High return) is it true ?
 - Diversification reduces risk
 - Optimal portfolio lies on efficient frontier
 - Investor chooses based on risk tolerance
- **Question:** Does adding ESG constraints move the frontier?

The Sustainable Efficient Frontier

Two efficient frontiers as follow

- **Traditional:** Higher returns at every risk level (unconstrained)
- **Sustainable:** Slightly lower returns at same risk level (constrained)
- **Or:** Sustainable: Same returns, lower risk (if ESG reduces risk)
- **Empirical Answer:** Depends on time period, methodology, and how "sustainable" is defined

Diversification with Green Assets

Do Green Assets Diversify?

- **Correlation Analysis:**
 - Renewables vs. Fossil Fuels: Low or negative correlation
 - Green Tech vs. Traditional Tech: Moderate correlation
 - Impact Private Equity vs. Public Markets: Low correlation
- **Implication:** Adding green assets can improve portfolio diversification

Green vs. Brown Correlations

Heat map of correlations

- S&P 500 vs. Fossil Fuels: 0.85
 - S&P 500 vs. Renewables: 0.60
 - Fossil Fuels vs. Renewables: 0.20
 - Green Bonds vs. Treasuries: 0.70
 - Green Bonds vs. High Yield: 0.40
- **Source:** Illustrative data based on historical correlations

Strategic Asset Allocation with ESG

- Building the Framework
- **Steps:**
 - Define sustainability objectives (risk reduction, impact, alignment)
 - Set constraints (exclusions, minimum ESG scores)
 - Run optimization with ESG as objective or constraint
 - Stress-test under climate scenarios
 - Implement across asset classes

Asset Class Considerations

Asset Class	ESG Integration Approach	Challenges
Public Equity	Most mature; ratings, engagement, the	Data quality, greenwashing
Fixed Income	Green bonds, sustainability-linked, engagement	Limited issuance, greenium
Private Equity	Direct control, impact measurement	Illiquidity, vintage risk
Real Estate	Green buildings, efficiency, resilience	Valuation, data
Infrastructure	Essential services, transition plays	Political risk, regulation
Hedge Funds	Long/short ESG, engagement	Transparency, strategy drift

Value Creation Through Sustainability

- Five Channels of ESG Value
 - Revenue Growth
 - Cost Reduction
 - Productivity Uplift
 - Investment Optimization
 - Lower Cost of Capital

Channel 1: Revenue Growth

- Tapping Green Markets
- **Mechanisms:**
 - New products for sustainability-conscious consumers
 - Premium pricing for sustainable attributes
 - Access to green procurement contracts
 - Market share gains from "brown" competitors
- **Evidence:** Unilever's Sustainable Living Brands grew 69% faster than rest of portfolio

Channel 2: Cost Reduction

- **Header:** Efficiency as Strategy
- **Mechanisms:**
 - Energy efficiency → lower utility costs
 - Water efficiency → lower water costs
 - Waste reduction → lower disposal costs
 - Circular economy → lower raw material costs
- **Evidence:** Walmart's Project Gigaton saved \$1B+ in energy costs

Channel 3: Productivity Uplift

- People Performance
- **Mechanisms:**
 - Better talent attraction (65% of millennials won't work for "brown" company)
 - Lower turnover (reduced recruiting/training costs)
 - Higher engagement (productivity gains)
- **Evidence:** Companies with high employee satisfaction outperform by 2-3% annually (multiple studies)

Channel 4: Investment Optimization

- Avoiding the Stranded Asset Trap
- **Mechanisms:**
 - Avoiding investments in soon-to-be-stranded assets
 - Shifting CapEx to future-proof technologies
 - Selling "brown" assets at peak value
- **Evidence:** Orsted's transformation from oil & gas to offshore wind created 5x shareholder return

Channel 5: Lower Cost of Capital

- The Green Financing Advantage
- **Mechanisms:**
 - Lower cost of debt (green bonds price at premium - "greenium")
 - Lower cost of equity (lower perceived risk)
 - Access to green investor base
- **Evidence:** Study shows green bonds price 5-10bps tighter than conventional bonds

Private Markets: Impact Investing

Direct Control, Direct Impact

- **Characteristics:**

- Direct ownership allows operational control
- Can implement sustainability strategy from day one
- Impact measurement is more feasible
- Illiquidity premium

- **Challenges:**

- Vintage year risk
- J-curve (early negative returns)
- Impact washing risk

Building a Sustainable Portfolio: Framework

- **Step 1:** Define philosophy (integration, thematic, impact)
- **Step 2:** Set constraints (exclusions, minimum scores)
- **Step 3:** Asset allocation (strategic, with ESG lens)
- **Step 4:** Manager/security selection (due diligence)
- **Step 5:** Risk monitoring (climate, controversy)
- **Step 6:** Reporting (returns and impact)

Why Quantitative Analysis?

- From Intuition to Evidence
- **Limitations of Qualitative Analysis:**
 - Confirmation bias
 - Anecdotal evidence
 - Difficulty isolating factors
- **Benefits of Quantitative Analysis:**
 - Tests hypotheses objectively
 - Isolates specific effects
 - Quantifies relationships
 - Enables scenario analysis

Why Quantitative Analysis?

- **Common Issues:**

- Missing data (many companies don't report)
- Survivorship bias (dead companies excluded)
- Look-ahead bias (using data not available at time)
- Outliers (extreme values skew results)

- **Solutions:**

- Imputation (fill missing with mean/median)
- Winsorization (cap extreme values)
- Lag independent variables (use prior period data)

Running the Regression

Software Options

- **Excel:** Data Analysis Toolpak (basic)
- **Python:** Statsmodels, Scikit-learn (advanced)
- **Today:** We'll use the ANOVA

Introduction to ANOVA

- **ANOVA (Analysis of Variance):** Tests whether means of multiple groups are equal
- **Use Case:** Compare returns of ESG Leaders vs. Laggards
- **Null Hypothesis:** $\text{Mean(Leaders)} = \text{Mean(Laggards)}$
- **Alternative:** Means are different

ANOVA Concept

Leaders vs. Laggards

- **Visual:** Box plots side-by-side
 - Leaders: Mean return 1.2%, IQR tight
 - Laggards: Mean return 1.0%, IQR wide
 - Are they different enough to be statistically significant?
- **ANOVA calculates:** Within-group variance vs. Between-group variance

ANOVA Calculation

Manual ANOVA

- **Data Provided:**
 - Leaders returns (%): 1.2, 1.4, 1.1, 1.3, 1.0
 - Laggards returns (%): 0.8, 1.1, 0.9, 1.2, 0.5
- **Task:**
 - Calculate mean of each group
 - Calculate overall mean
 - Calculate between-group and within-group variance
 - Determine if difference is significant (use intuition)

- **Calculations:**

- Leaders mean: $(1.2+1.4+1.1+1.3+1.0)/5 = 1.20$

- Laggards mean: $(0.8+1.1+0.9+1.2+0.5)/5 = 0.90$

- Overall mean: $(1.20+0.90)/2 = 1.05$

- Difference: 0.30 percentage points

- **Conclusion:** Leaders outperformed by 30bps monthly, but sample small; need more data

Predicting ESG Controversies

Early Warning Systems

- **Model Approach:**
 - Dependent variable: Controversy occurs (0/1)
 - Independent variables: ESG scores, financial metrics, governance structure, prior incidents
 - Method: Logistic regression
- **Use Case:** Identify companies at risk before controversy hits

Apply the Model

Which Company Is at Risk?

•**Task:** Using the below table, rank companies by controversy risk

Company	ESG Score	Prior Controversy	Board Independence	Size (log)
A	65	Yes	60%	10.2
B	80	No	80%	9.5
C	45	No	40%	11.0
D	70	Yes	70%	8.8

- **Calculate Risk Score (simplified):**

- Risk $\sim -0.05(\text{ESG}) + 1.20(\text{Prior}) - 0.30(\text{Board})$

- Company A: $-3.25 + 1.20 - 0.18 = -2.23$

- Company B: $-4.00 + 0 - 0.24 = -4.24$

- Company C: $-2.25 + 0 - 0.12 = -2.37$

- Company D: $-3.50 + 1.20 - 0.21 = -2.51$

- **Rank (highest to lowest risk):**

- Company C (-2.37) - low ESG, low board independence

- Company A (-2.23) - prior controversy

- Company D (-2.51) - prior controversy but high ESG

- Company B (-4.24) - lowest risk

- **Interpretation:** Company C highest risk despite no prior controversy

Valuation Frameworks with ESG

- Putting It All Together
- **Three Approaches:**
 - **Discount Rate Adjustment:** Modify WACC for ESG risks/opportunities
 - **Cash Flow Adjustment:** Explicitly model ESG impacts on revenues, costs, CapEx
- **Scenario Analysis:** Value under multiple ESG scenarios

Discount Rate Adjustment Method

- Adjusting WACC
- **$WACC = (E/V \times Re) + (D/V \times Rd \times (1-T))$**
- **ESG Impacts:**
 - **Re (Cost of Equity):** Adjust beta for ESG risks
 - **Rd (Cost of Debt):** Reflect green bond premium or brown risk
 - **Capital Structure:** ESG may affect optimal leverage
- **Example:** Reduce WACC by 50bps for ESG leader, increase by 100bps for laggard

Cash Flow Adjustment Method

Adjustments to Forecasts:

- Revenue growth:** +1% for green products
 - Operating margins:** +50bps from efficiency
 - CapEx:** Higher initial investment, lower maintenance later
 - Terminal value:** Higher growth for sustainable companies
- Example Model:**

Year	Revenue	Margin	FCF
Base	+3%	15%	100
ESG-Adjusted	+4%	16%	112

Scenario Analysis Method

- Valuing Under Uncertainty
- **Three Scenarios:**
 - **Base Case:** Current policies continue
 - **Orderly Transition:** Carbon price \$50/ton by 2030
 - **Disorderly Transition:** Carbon price \$150/ton, physical impacts
- **Approach:** Value company under each scenario, probability-weight
- **Example:**
 - Base: \$100/share
 - Orderly: \$95/share
 - Disorderly: \$70/share
 - Probability: 50%, 30%, 20%
- Expected value: \$91/share

Valuing a Company with ESG

- Apply All Three Methods
- **Company Profile:** Mid-sized European utility
 - Current price: €50/share
 - 40% coal, 30% gas, 20% renewables, 10% other
 - EU carbon price currently €80/ton
 - Plans to increase renewables to 50% by 2030
- **Task:** Value using:
 - Discount rate adjustment
 - Cash flow adjustment
 - Scenario analysis

- **Sample Approach:**

- **Discount Rate:** Increase WACC by 50bps for transition risk → €48/share

- **Cash Flow:** Model higher CapEx for transition, lower fuel costs → €52/share

- **Scenarios:**

- Base: €50

- Orderly: €55 (benefits from carbon price, renewables)

- Disorderly: €35 (stranded coal assets)

- Weighted (50/30/20): €49.50

- **Conclusion:** Current price €50 is fair, but wide range of outcomes suggests risk

Strategy Development

- Build Your Investment Strategy
- **Client Profile:** (Choose one)
 - **Option A:** Pension fund (\$5B), moderate risk, net-zero mandate
 - **Option B:** Family office (\$500M), high risk tolerance, impact focus
 - **Option C:** Insurance company (\$10B), low risk, regulatory focus
- **Task:** Develop a comprehensive strategy including:
 - Investment philosophy
 - Asset allocation
 - Implementation approach
 - Risk management
 - Reporting framework

Strategy Template - Philosophy

- Section 1: Investment Philosophy
- **Questions to Answer:**
 - What is our core belief about sustainable investing?
 - Are we integration, thematic, or impact focused?
 - What is our edge?
 - How do we define success?
- **Example:**
 - "We believe ESG factors are material to long-term returns. We will integrate ESG into all investment decisions, with a thematic overweight to climate solutions. Our edge is quantitative analysis of ESG momentum. Success is risk-adjusted returns aligned with net-zero."

Strategy Template - Asset Allocation

- Section 2: Asset Allocation
- **Consider:**
 - Public equity (domestic, international, EM)
 - Fixed income (government, corporate, green bonds)
 - Private markets (PE, VC, infrastructure, real estate)
 - Alternatives (hedge funds, commodities)
 - Cash
- **ESG Lens:** How does each allocation contribute to sustainability goals?

Strategy Template - Implementation

- Section 3: Implementation
- **Key Decisions:**
 - Active vs. passive
 - Internal vs. external managers
 - Screening criteria (exclusions, minimum scores)
 - Engagement approach
 - Manager selection process
- **Example:**
 - "Core equity will be passive low-carbon index. Thematic allocation will be active managers with climate expertise. We will engage with all holdings on transition plans."

Strategy Template - Risk Management

Section 4: Risk Management

- **ESG-Specific Risks:**

- Climate transition risk
- Physical risk
- Controversy risk
- Regulatory risk
- Reputational risk

- **Monitoring Tools:**

- Carbon footprint tracking
- Controversy screening
- Climate scenario analysis
- Engagement tracking

Strategy Template - Reporting

- Section 5: Reporting
- **Dual Mandate:** Financial + Impact
- **Financial Metrics:**
 - Returns, volatility, Sharpe ratio
 - Relative performance
- **Impact Metrics:**
 - Carbon footprint (absolute, intensity)
 - Green revenue share
 - Engagement milestones
 - SDG alignment
- **Frequency:** Quarterly financial, annual impact



UAE : Abu Dhabi

KSA : Riyadh



info@systemahr.com



UAE:+971 50 240 8873
KSA : +966 59 810 6796



systemahr.com

SystemaHR