

Environmental Sustainability Ratings

Prepared by Sustainable Holdings and Esty Environmental Partners

Introduction to the Environmental Sustainability Ratings

Sustainability has emerged as a critical public policy goal—and an important element of corporate strategy. While the contours of the concept are much debated, the United Nations World Commission on Environment and Development (WCED)¹ developed the most enduring definition of the term: “meeting the needs of the present without compromising the ability of future generations to meet their own needs.”²

Two strands of sustainability are often separated out—focusing on social concerns and environmental issues. Social sustainability involves a complex and contested agenda covering issues with no clear standards such as human rights, gender equality, and fair labor practices. In contrast, the elements of environmental sustainability have come into much clearer focus in recent years. Scientific consensus is driving attention to topics such as climate change, water availability, pollution threats, and other natural resource management questions. The Sustainable Holdings screen systematically evaluates corporate performance on a defined set of environmental sustainability issues. The scores that result offer insight as to which companies among a broad array of US and international publicly traded corporations are handling the environmental sustainability challenge well—and which are not. The rankings cover a wide range of business practices including:

- **Reducing resource consumption:** Sustainable companies are efficient in their use of natural resources—particularly non-renewable resources and energy that contribute to global climate change.³
- **Reducing emissions of toxics and pollutants:** Companies that emit harmful chemicals, break environmental laws, or show wanton disregard for local environments are not performing sustainably.
- **Implementing proactive environmental management systems and initiatives:** Embedding environmental thinking into the business structure maximizes sustainability thinking at every point, rather than only after the fact.
- **Helping customers achieve sustainability:** Thinking beyond the walls of the company to design products that reduce the environmental impacts during product use is a key aspect of sustainability.

Environmental sustainability represents a significant area of differentiation in the marketplace as companies face growing pressure to incorporate environmental factors. Skyrocketing commodity and energy prices, tightening environmental standards, and a high level of community and shareholder scrutiny have made environmental management part of the core criteria of corporate excellence. Those seeking to evaluate a company’s environmental sustainability need refined tools to quantify both the risks and the opportunities presented by sustainability at the corporate scale. To meet that need, Professor Daniel C. Esty of Yale University and an international team of experts, along with Sustainable Holdings and Esty Environmental Partners, a leading corporate environmental strategy consulting firm, have developed an original rating system based on proprietary data and cutting-edge methodology. This ratings system is unique for its combination of a broad universe of rated companies, an undivided focus on environment, an objective and numerical scoring system, and a sophisticated ratings framework incorporating a wide range of aspects relating to both environmental performance and management programs. Together, these aspects form a market-leading tool for evaluating corporate sustainability.

¹ This commission is more commonly known as the Brundtland Commission. This name is derived from that of the chairman, former Norwegian Prime Minister Gro Harlem Brundtland.

² United Nations. 1987. Report of the World Commission on Environment and Development. General Assembly Resolution 42/187.

³ Intergovernmental Panel on Climate Change. 2007. *Climate change 2007: Synthesis report of the IPCC fourth assessment report*: 36. [DTP: Please format as footnote (see “3” symbol at beginning; doesn’t look right)]

Sustainable Holdings Founders and Advisory Board

Development of the rating system builds on input and oversight from an advisory board of thought leaders.

- **Daniel Esty (chair).** Hillhouse Professor of Environmental Law and Policy at Yale University, Director of both the Center for Business and the Environment at Yale (www.yale.edu/CBEY) and the Yale Center for Environmental Law and Policy (www.yale.edu/envirocenter). A former top official with the US Environmental Protection Agency, Professor Esty is author of the award-winning book *Green to Gold: How Smart Companies Use Environmental Strategy to Innovate, Create Value, and Build Competitive Advantage*. He has a long record of path-breaking work in data-driven environmental analysis and has been honored for his work in developing the Environmental Performance Index (<http://epi.yale.edu>), which ranks countries on the basis of twenty-five separate indicators of pollution control and natural resource management.
- **Kevin Wall.** In 2005 Wall founded Control Room to create live entertainment accessible to anyone, anywhere, anytime. Its most potent realization came on 07/07/07 with “Live Earth,” the 24-hour, seven-continent concert series he co-founded with Al Gore, which reached an estimated global audience of two billion. Inspired by the documentary *An Inconvenient Truth*, Wall conceived a groundbreaking event that sought to deliver an urgent yet hopeful call to action on global warming. He designed the multimedia architecture, enlisted over 150 headlining artists, and forged a matrix of strategic partnerships, including one with former vice president and Nobel Peace Prize winner Al Gore and his organization, the Alliance for Climate Protection. Recipient of such honors as the MIDEM Green Award, Billboard Touring Conference Humanitarian Award, and EMA Outstanding Achievement Award, Kevin Wall is a board member of Al Gore’s Alliance for Climate Protection and founder of the Digital Coast Roundtable.
- **Billy Gerber.** Gerber began his producing career with projects at Warner Brothers and Paramount and in 1985 formed Gerber/Rodkin, a management production company that represented Judd Nelson, Robert Downey Jr., Billy Zane, Sarah Jessica Parker, and Dan Hartman. In 1986, Gerber left his firm to join Warner Bros. as vice president of theatrical production. He remained there for twelve years and was successively promoted to president of worldwide theatrical production in 1996. While at Warner Bros., Gerber supervised the films *L.A. Confidential*, *Unforgiven*, *Twister*, *Selena*, *Reversal of Fortune*, *A Little Princess*, *Goodfellas*, *Heat*, *JFK*, *Disclosure*, *Grumpy Old Men*, *Passenger 57*, *Executive Decision*, *You’ve Got Mail*, and *Analyze This*, and acquired *Perfect Storm* and *Space Cowboys* as well as *Harry Potter*. In May of 1998, Gerber ventured out to form his own production company, Gerber Pictures, which is tied to a first look deal at Warner Bros. Bill resides in Los Angeles with his wife and three daughters. He serves on the Board of Trustees at the Center for Early Education and is a Board Chair of the Environmental Media Association. He was among the original committee members of TreePeople. Bill is also an Ironman competition finisher.
- **Andrew King.** Professor of strategy at the Amos Tuck School of Business Administration at Dartmouth College, Professor King has written widely on corporate environmental management. He is currently a visiting professor at the Harvard Business School.
- **Ian Goldin.** Director of Oxford University’s James Martin 21st Century School and former vice president of the World Bank, Goldin has a worldwide reputation for his work on sustainability and development. He writes broadly on these topics and has been a frequent commentator at the World Economic Forum in Davos.
- **Steve Ramsey.** Former vice president of corporate environmental programs for GE and a leading contributor to GE’s “Ecomagination” initiative, Ramsey has two decades of on-the-ground experience with corporate environmental strategy and its implementation. He designed GE’s widely heralded “digital cockpit”—a comprehensive set of environmental metrics scalable from company-wide to individual production lines. He also served in the US Justice Department’s Land and Natural Resources Division and has extensive knowledge of environmental law and regulations, as well as risk and liability management.
- **Jeremy Smith.** Director of Carbon Capital Markets in London, Smith is helping to build the market for carbon offsets. As a co-founder of the Carbon Disclosure Project, he is seen as a global thought leader on the business response to climate change.

Variable Selection

Sustainable Holdings ratings are based on thirteen key aspects of the environmental sustainability of a company, which are organized into three broad categories: (1) vulnerabilities, (2) strengths, and (3) climate change. These variables emerged from an in-depth analysis of the business-environment interface, data availability, and a model of the drivers of superior environmental performance. The model builds on the extensive sustainability experience of the Sustainable Holdings team, research by Esty Environmental Partners, and the Advisory Board's wide-ranging knowledge of the academic research in the corporate sustainability field.

Environmental Vulnerability

This category gauges a company's measurable emissions and pollution harm, regulatory compliance, and overall record in terms of fulfilling mandated environmental responsibilities. Individual company performance on each of these elements is compiled based on a comprehensive scan of media reports and company regulatory and financial filings.⁴ The specific variables that are tracked in this category include:

- **Hazardous Waste.** Company emissions of highly corrosive, flammable, reactive, or toxic by-products to air water, land, and underground wells. Such wastes are closely regulated by governments and carry increasing regulatory and financial burdens. Companies that minimize these outputs are lightening the burden on the environment for future generations.
- **Substantial Toxic Chemical Emissions.** Company emissions of substantial amounts of any of the more than 600 chemicals that are on the Environmental Protection Agency's list of harmful substances that can be fatal to humans and animals if ingested. Even legally emitting these chemicals causes problems for humans, the environment, and the corporation.⁵
- **Environmental Regulatory Problems.** Instances of failing to comply with environmental laws. Clear violation of environmental regulations shows disregard for sustainability structures put in place to protect the environment for future generations.
- **Environmental Controversy.** Instances of negative attention from environmental crises. Environmental controversies are frequently manifestations of corporate inattention to local environmental concerns.
- **Environmental Negative Economic Impact.** Instances of harm to communities from environmental impacts. Companies committing such acts will find their growth constrained in the future by difficulty placing facilities into new communities.

Environmental Strength

This category tracks a company's record in establishing internal environmental management standards, creating products or services that protect the environment, and reaching out into the community to measurably improve environmental conditions. Individual company performance on each of these variables is compiled based on company documents detailing financial and sustainability performance and media reporting. The variables covered include:

- **Environmental Management System.** Evidence of company-wide internal programs (often complying with global standards such as ISO 14001) that track all aspects of resource use and waste production. Academic research proves that a strong EMS is a good proxy for overall environmental performance.⁶
- **Pollution Prevention.** Companies that show a proactive approach to minimizing their waste output. Companies that take such an approach reap strategic benefits and protect the environment for future generations.
- **Recycling.** Extent of company waste recycling programs and use of recycled content as a production input. Recycling is an essential strategy on both the company and global level for reducing overall use of resources.

⁴ For more detail on the data gathering methodology, please see "calculating the company scores" below.

⁵ Konar, S., and M.A. Cohen. 2001. Does the market value environmental performance? *Review of Economics and Statistics* 83, no. 2: 281-89.

⁶ Maier, S., and K. Vanstone. 2005. Do good environmental management systems lead to good environmental performance? EIRIS Research Briefing. Available at www.eiris.org/files/research%20publications/emsperformanceoct05.pdf.

- **Environmental Initiatives.** Proactive engagement on environmental issues through community outreach and partnerships with environmentally focused organizations or institutions. Partnerships help a company move beyond organizational orthodoxies and business as usual, aiding with environmental issue-spotting, avoidance of future problems, and building new businesses.⁷
- **Beneficial Products and Services.** Bringing to market products with environmental features and services that help customers achieve higher levels of sustainability. Companies that sell or use these products are directly contributing to innovations that will be critical to improving long-run sustainability.

Climate Change

This category seeks to evaluate a company's response to the most sweeping and strategically significant environmental issue: the threat of climate change caused by a build-up of greenhouse gases in the atmosphere. As the world gears up to combat climate change, a company's "carbon exposure" has become a significant issue—both as a matter of ongoing market success and corporate social responsibility. The underlying information for this set of variables is compiled from Carbon Disclosure Project data and individual assessments of the company's use of renewable energy and other low-carbon technologies. The variables tracked are:

- **Carbon Intensity.** Company emissions of greenhouse gases per dollar of revenue. Sophisticated analytical attention is being paid to abatement methods and the impact of climate change and carbon regulation on businesses.^{8,9} Forward-thinking firms that are embracing reductions are both acting sustainably and providing leadership to industries and the business world as a whole.
- **Climate Change Solutions.** Use or production of greenhouse gas abatement methodologies as demonstrated by the use of clean/alternative/renewable energy. Companies that are sophisticated at reducing their own carbon footprint or that of their clients are performing sustainable roles and stand to gain strategic advantage.¹⁰
- **Climate Change Reporting.** Tracking and self-reporting of the company's carbon footprint. This is a proxy indicator of advanced recognition of the importance of climate change.

This nuanced model systematically analyzes environmental sustainability in a number of areas including transparency, stakeholder engagement, and positioning for competitive advantage through proactive environmental strategy. The Sustainable Holdings rating system creates a comprehensive, integrated system for ranking companies in all major sectors of the economy. The rating system selects for sustainability leaders within industries, as well as selecting for companies that are positioned to succeed in a resource-constrained future.

Weightings

Creating a numerical picture of sustainability requires appropriate weightings to produce accurate results. The weightings of individual variables and categories were carefully considered. The decision-making process balanced the weighting of the categories and individual variables according to relative importance and quality of the underlying data available.

Vulnerabilities and Strengths are assessed equal and relatively more weight (35%) than Climate Change (30%). Both the Vulnerabilities and Strengths categories provide good visibility into multiple issues, impacts, and aspects of a company's environmental sustainability. The Vulnerabilities category is focused on environmental performance—the actual impacts the company has on the environment. The Strengths category allows insight into the processes and systems in place to manage, minimize, and track those impacts. The category also captures the extent of the company's environmental product or service offerings. Climate Change is an indispensable aspect of corporate environmental strategy, and it has been given more weight than any other single issue. Together these categories form the core of a complete picture of sustainability.

⁷ Hartman, C.L. 1997. Green alliances: Building new business with environmental groups. *Long Range Planning* 30, no. 2: 184-96.

⁸ Lewellyn, J., and C. Chaix. 2007. The business of climate change II. Lehman Brothers. Available from <http://www.lehman.com/who/intcapital>. [NOTE: Correct link, but I received error opening PDF.]

⁹ Mogren, A. 2007. Summary: Vattenfall's global climate impact abatement map. Available at: <http://www.igbp.kva.se/documents/Mogren-Abstract.pdf>.

¹⁰ Mogren, A. 2007.

1. **Vulnerability Variables.** Hazardous Waste and Regulatory Problems are the most heavily weighted variables (10%), because they represent incontrovertible problems on basic environmental issues. Toxic chemicals also represent a significant risk exposure for companies, but that variable is given less weight (5%), because toxic waste is a subclass of hazardous waste and heavily weighting both would unbalance the rating system. The other variables, Environmental Controversy and Environmental Negative Economic Impact, are also given weights of 5%. These variables that quantify the perception of harm are key to creating a complete picture, because such controversies are often the manifestation of widespread small-scale harms.
2. **Strength Variables.** The opportunities to respond positively to environmental challenges and the specifics of the optimal response depend on a company's industry, business model, and individual strategy. For example, the Environmental Management Systems (EMS) variable is an opportunity for most manufacturers, such as Xerox and Ford, to demonstrate their sustainability commitment, because EMS programs drive environmental metrics and bolster basic standards across a dispersed set of production operations. The Beneficial Products and Services variable is a big opportunity for companies like Green Mountain Coffee that focus on sustainable foods. Therefore, all the strength variables are weighted equally (7%) to create a picture that avoids bias toward certain industries, business models, or strategies.
3. **Climate Change Variables.** Carbon Intensity has been given the lion's share of the weight (20%), because it directly assesses a company's greenhouse gas emissions. Climate Change Solutions and Carbon Reporting both provide important additional insight into the comprehensiveness of a company's climate change strategy. However, current abatement actions (which in most cases have relatively limited effect) and transparency in carbon reporting do little to reduce fundamental carbon risk from high greenhouse gas emissions and so are weighted at 5% each.

How Company Scores Are Calculated

The overall sustainability score is the summation of rigorous, systematic research and evaluation of the entire range of environmental sustainability. A comprehensive explanation of the process of rating companies is shown below.¹¹

1. **Research/Data Gathering.** The analytical team subjects all members of the universe of rated companies to an identical research methodology to standardize the process of scoring. This research builds on publicly available documents and interactions with each company. The materials scrutinized include:
 - **Government documents.** Some examples include the US EPA's Toxics Release Inventory (TRI), and public inventories of regulatory actions such as fines and notices of violation (NOVs).
 - **Company documents.** Both financial documents and published sustainability materials are analyzed to determine the amount of hazardous waste accruals the company is liable for, as well as the extent of its proactive environmental programs, products, and partnerships.
 - **Media scan.** A comprehensive analysis of media coverage using databases such as LexisNexis ensures that issues such as environmental controversy and local negative impact are recorded.
 - **Carbon Disclosure Project.** Companies' reports to this public database are analyzed to determine carbon intensity and the thoroughness and transparency of reporting.
 - **Company engagement.** Each company is given an identical opportunity to amend, augment, and correct its profile to minimize any skew that might result from differences in the rigor of overall reporting.

¹¹ For more information on calculation methodologies, sourcing, and data completeness of individual variables, please see the Appendix.

2. **Variable Scoring/Normalization.** Every company receives a score between 0 and 3 on each of the thirteen variables. The scores are based on the company's individual performance on that variable.

- **Example:** In the specialty retail sector, Home Depot has a good environmental management system, but not one of the world's best. Lowe's has no environmental management system at all. On the Environmental Management Systems variable, Home Depot receives a 2 while Lowe's receives a 0.

For some variables, the company size is a significant factor when scoring in absolute terms. For instance, a very large corporation, even if it is maximally efficient, will emit more total by-products than a very small, inefficient peer company. To maintain focus on identifying those companies that demonstrate leading commitment to environmental sustainability, the advisory board carefully selected variables that would be normalized to reveal the true leaders in sustainability. Two pools of variables receive normalization:

- **Variables normalized by revenue:** Carbon Intensity, Substantial Toxic Chemical Emissions, Environmental Regulatory Problems, and Hazardous Waste are all normalized by revenue. In all of these cases, the best metric for judging the environmental quality of a firm is its efficiency with regard to generating these negative externalities.
- **Variables normalized relative to size-class peers:** Environmental Management Systems, Pollution Prevention, and Environmental Initiatives are variables related to internal programs and process-based infrastructure. Larger corporations have been the focus of stakeholder scrutiny for more time and have the additional corporate resources to create and maintain the bureaucracy for these programs. Performance on these variables is rated in comparison to similar-sized firms.

Normalized variables are also scored between 0 and 3 to maintain alignment.

3. **Calculating the Score.** The overall sustainability score is the weighted average of the subscores of each of the three broad categories of variables. Overall scores are calculated according to the model:

$$O = 0.35S_v + 0.35S_s + 0.3S_c$$

The category sub-scores are the weighted average of the variables within that subscore normalized to a 0-3 scoring structure. In the event that there is no data for a given variable, the weight of the unknown variable is dispersed to the other variables in the category in proportion to the relative weights.

Sub-scores are calculated using the model:

$$S_i = \frac{[\alpha_1 V_1 + \alpha_2 V_2 + \dots + \alpha_n V_n]}{\sum_{i=1}^n \alpha_i \text{ for every } i \text{ when } V_i = R}$$

For companies that are rated on all variables, the overall score is simply the weighted average of the thirteen variable scores and the relative weights of those variables.¹²

¹² This is equivalent to the weighted average of the subscores.

Sample Scoring of Two Companies: Nike and Timberland

Name	Climate Change—30%			Vulnerability—35%					Strength—35%					Sub-scores			Overall Score (0-3)
	20%	5%	5%	10%	10%	5%	5%	5%	7%	7%	7%	7%	7%	30%	35%	35%	
	Carbon Intensity	Climate Change Solutions	Carbon Reporting	Hazardous Waste	Regulatory Problems	Substantial Toxic Emissions	Environmental Negative Economic Impact	Environmental Controversy	Environmental Management	Pollution Prevention	Recycling	Environmental Initiatives	Beneficial Products and Services	Climate Change Subscore	Environmental Vulnerability Subscore	Environmental Strength Subscore	
NKE	3	2	3	3	3	3	3	3	1	3	1	1	2	2.83	3	1.60	2.460
TBL	1.6	3	NA	3	3	3	3	3	3	3	0.3	3	1	1.88	3	2.05	2.332

Sample calculation of Nike and Timberland's Climate Change Sub-scores:

- Nike: $\frac{[0.2*3]+[0.05*2]+[0.05*3]}{[0.2+0.05+0.05]} = 2.83$
- Timberland: $\frac{[0.2*1.6]+[0.05*3]}{[0.2+0.05]} = 1.88$

The sub-scores for Nike and Timberland are the weighted average of all variables for which there is reliable data.

Sample calculation of Nike and Timberland's Overall Scores:

- Nike: $[0.35*3]+[0.35*1.6]+[0.3*2.83] = 2.46$
- Timberland: $[0.35*3]+[0.35*2.05]+[0.3*1.88*0.3] = 2.332$

Whether or not there are gaps in the data, a company must have three valid subscores to receive an overall score.

Data Sources

To assure the rating system was based on the best available data, we analyzed a broad set of proprietary and public environmental data sources and developed a hybrid of data streams that creates a cutting-edge, regularly updated picture of corporate environmental performance. We chose data from KLD Research and Analytics Inc. for the preponderance of our US company data and corporate data from Sustainable Investment Research International (SiRi) to track international companies.

While KLD's data was the strongest available, we collaborated with them to customize 40% of the KLD-derived variables, customized another 30% of KLD-derived variables in-house, and developed a pair of new variables from non-KLD data sources.

Our two non-KLD variables are carbon-focused and use data from the Carbon Disclosure Project (CDP), a worldwide initiative backed by \$45 trillion in institutional investment to encourage global corporations to report their greenhouse gas emissions.

We performed similar customizations and augmentations to the SiRi data in order to rate the international companies.

Commitment to Improvement

The analysis of environmental performance is a continuously evolving process. Although the current rating system is a thoughtful, comprehensive analytical product, Sustainable Holdings is committed to continuous improvement of the screening methodology and data. Our commitment to improvement includes:

- Developing cutting-edge carbon metrics for non-reporting companies, including the ability to differentiate carbon emissions among industry peers. These imputations will provide a gauge of carbon footprints for a broader set of companies in each industry.
- Increasing the sophistication of our ability to differentiate between the absence of data and data that indicate sub-par performance. This includes discerning when there truly is no program as opposed to an absence of communication with the data gatherer.

For the international data, minimizing gaps in the data and aligning the rating system more closely with the US methodology.

- Scanning for new sources of data that will capture additional key aspects of environmental strategy.
- Ongoing collaboration with data providers to create a more refined, precise data set.
- Research and statistical analysis to create new variables that will provide additional important information about a company's environmental performance.

Appendix: Detailed Rating System Structure

Environmental Vulnerability - 35%		
Variable	Weight	Data Description
Hazardous Waste	10%	Accrued environmental remediation liabilities normalized by revenue
Environmental Regulatory Problems	10%	Substantial fines, civil penalties, settlements, and controversies involving air, water, and other environmental regulations
Substantial Toxic Chemical Emissions	5%	Toxics Release Inventory (TRI) data for air, water, ground, and injection wells, normalized by revenue
Environmental Controversy	5%	Damage to natural resources that may not be regulated, such as the gasoline additive methyl tert-butyl ether (MTBE), cutting old-growth forests, mountaintop mining, asbestos contamination
Environmental Negative Economic Impact	5%	Involvement in environmental controversies that have negatively affected communities

Environmental Strength - 35%		
Variable	Weight	Data Description
Environmental Management Systems	7%	Commitment to environmental management systems such as ISO 14001 and other programs such as the Environmental Protection Agency's Performance Track and Responsible Care programs
Pollution Prevention	7%	Clearly defined goals in the reduction of the use and production of hazardous or toxic materials accompanied by systematic reports on progress toward those goals
Recycling	7%	Substantial users of recycled material or firms in the recycling industry
Environmental Initiatives	7%	Noteworthy acts of environmental protection, partnerships with non-profit, organizations or noteworthy operational practices to minimize resource use
Beneficial Products and Services	7%	Revenue derived from innovative products with environmental benefits such as remediation and environmental services

Climate Change - 30%		
Variable	Weight	Data Description
Carbon Intensity (CO₂ emissions/revenue dollars)	20%	Own emissions and emissions from purchased energy normalized by revenue. Sector average given to non-Carbon Disclosure Project (CDP) companies
Climate Change Solution Users	5%	Use or production of clean energy, alternative fuels, energy-efficient programs, sale of goods promoting energy efficiency
Climate Change Reporting	5%	Thoroughness and transparency of carbon reporting (CDP invitees only)