Project Final Deliverable

Project Name: Corporate ESG Research
Company: Breckinridge Capital Advisors
Focus Area: Sustainable investing
Class: Strategies for Sustainable Business
Term: Spring 2018

Description: This Project Final Deliverable outlines the scope and purpose of this project, the methods of data collection, key learnings, and final reports prepared for Breckinridge Capital Advisors.

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1. Executive Summary

Breckinridge Capital Advisors ("BCA") is a Boston-based registered investment advisor currently managing $36 billion in investment-grade fixed income portfolios. BCA's investment choices fully integrate Environmental, Social, and Governance (ESG) factors into the research process. BCA seeks to increase the number of potential investment opportunities through analysis of corporate ESG initiatives across a range of companies.

This project sought to help BCA expand the number of ESG-mindful companies under coverage to accommodate client investment needs and interests. To do this, our team performed ESG analysis on 12 public companies and prepared ESG 'stories' on each, which contain recommendations based on our ESG research. The company stories are included at the end of this report. Our hope is that BCA's analysts will consider this ESG research with their own fundamental credit and ESG analysis.

2. Problem Statement & Purpose

The objective of this project was to further expand the research coverage of investment grade companies with outstanding debt. This is where our team stepped in and performed the in-depth analysis of 12 companies and their respective ESG initiatives. This ESG research on potential investment opportunities would help BCA accommodate a variety of clients and preferences.

Methodologies for evaluating firms and the impact and relevance of their ESG strategies vary considerably from one assessor to the next. Bloomberg, Thomson-Reuters and other ratings agencies each apply distinct approaches to their ESG analysis. BCA has its own proprietary framework used to research bond issuers as well. By engaging with MIT Sloan, BCA hoped to gain perspective from S-Lab students to further refine its analytical approach and further BCA's capabilities in ESG integrated research.

Why this is important: ESG considerations have become increasingly important in how investors allocate their resources. This results in a stronger incentive for companies to conduct business in a more sustainable manner to attract ESG-mindful investment. By scrutinizing publicly disclosed ESG data we can help concerned investors make smarter investment decisions while encouraging companies to faithfully incorporate sustainable strategies into their business models.

3. Project Approach

Research Process

Our team conducted our research in five stages. First, we met with our BCA project contacts to understand how analysts typically conduct ESG research and developed a list of potential resources we could reference for our research, including ESG rating agencies and available

MIT resources. Second, we met frequently with our Project Mentor to gain insights into corporate ESG research and the limitations of ESG rating agencies. Third, we selected the 12 companies we wanted to analyze from the list of 30 companies BCA provided to us. We then began the research and story building phases of the project. Finally, we built this final deliverable report and presented our key recommendations and learnings to BCA.

Data Sources

In our analysis of each target company we referenced a large number of data sources, including: SEC 10-K and 10-Q filings, annual investor reports and proxy statements, Corporate Social Responsibility (CSR) reports, company Corporate Governance Guidelines, equity analyst research reports, and any germane media coverage.

We also utilized ESG ratings from five popular data vendors and rating agents, including: Bloomberg, Thomson Reuters ASSET4, RebecoSam, Vigeo, and Sustainalytics. For each target company (as well as peer competitors for benchmarking), we tabulated environmental, social, governance, and aggregate ESG ratings from all available ratings organizations. Through MIT student resources, we had full access to Bloomberg and Thomson Reuters ASSET4, and were able to pull more extensive reports including underlying data.

Analytical Framework

We evaluated each company based on material issues identified by the Sustainability Accounting Standards Board's (SASB) Materiality Map. We identified the material sustainable issues each company faces within the materiality map and compared these issues to the company's existing ESG initiatives to 1) determine if there was alignment between the initiatives and the material issues, and 2) understand how transparent the company is at reporting, tracking and disclosing the impact of these ESG initiatives. As SASB's Materiality Map classifies companies according to somewhat general categories, we also incorporated additional issues if we, or the firm itself, identified them to be of material importance. We then compared ESG ratings of each company across rating agencies and across comparable companies to gauge how the company is performing relative to its industry peers.

We also compared company data with indicators from SASB's detailed disclosure standards. This helped determine the level of rigor each company applied in its disclosure practices and served as a proxy measure for how seriously sustainability issues mattered to each company.

We chose this analytical approach for our project primarily to remain consistent with how BCA analysts conduct their company research, but to also analyze each company from multiple perspectives. By using the company-generated reports we were able to identify the ESG initiatives that are most important to the company and understand the internal motivations behind implementing these initiatives. We then analyzed the company against the material issues the company should be considering from the viewpoint of SASB and the various ESG ratings agencies, which gave us a framework to assess whether or not their ESG initiatives are appropriate for companies in their respective industries and against their peers.

The limitations to this analytical approach are vast and discussed in greater detail in section 4.

Team Member Approaches

The following table shows how the team approached their individual company ESG research.

Team Member	**Companies**	**Reasons for choosing**
Matt Berchtold	Ingersoll-Rand	I interacted with IR industrial equipment & maintenance technicians in my previous career, so I was interest to gain a broader perspective of the organization.
	Stanley Black & Decker	I am a consumer of several the company's product lines, so I was curious learn more about their organizational values.
	Visa	Visa offered an opportunity to broaden my perspective to explore an industry with which I have no familiarity or experience.
Analytical approach:	Every sustainability report I've reviewed for this project or within this course is completely different—materiality, disclosure quality, targets (absolute or intensity), definition of operational boundaries, etc. My main objective was to assess report and company integrity. If integrity can be verified, it is easier to accept reported metrics at face value. To accomplish this, I reviewed a considerable array of documentation (Time series of CSR's, 10-K's, Annual Share Holder Report, Corporate Governance Guidelines, Codes of Ethics, public media, etc.) attempting to assess 1.) internal consistency in reporting, and 2.) the extent to which sustainability is fully woven into culture.	

Team Member	**Companies**	**Reasons for choosing**
Courtney Crowell	Costco	To learn how a large grocer/wholesaler manages its environmental impact when it comes to sourcing, transporting and storing food.
	Marriott	To learn how a large hospitality group with a significant real estate portfolio manages its environmental impact and maintains its properties.
	Sysco	To understand how, if at all, a large food distributor is thinking about sustainability in its supply chain.
Analytical approach:	Analyzed company 10-ks, sustainability reports and other publicly available records to measure how well each firm accounted for sustainability issues according to SASB standards.	

Team Member	**Companies**	**Reasons for choosing**
Karl Erdmann	Clorox	To learn how a major consumer goods company with well-known brands approaches sustainability.
	eBay	To learn how an e-commerce company incorporates parcel delivery into its environmental footprint.
	Philip Morris	To be convinced of PMI's corporate responsibility.
Analytical approach:	Analyzed company 10-ks, sustainability reports and other publicly available records to measure how well each firm accounted for sustainability issues according to SASB standards. Also assessed sustainability issues beyond what SASB deemed material, if applicable.	

Team Member	Companies	Reasons for choosing
Ana Galli	General Motors	To learn how a key sector like transportation is facing and innovating to tackle climate change and other ESG issues.
	Oxy	To understand better how a sensitive industry sector like non-renewable companies – from a sustainability perspective – handles with ESG challenges.
	Spectra	To understand better how a sensitive industry sector like non-renewable companies – from a sustainability perspective – handles with ESG challenges.
Analytical approach:	Analyzed annual reports, 10-K forms, Carbon Disclosure Project data disclosures – when available - and other information provided on company's website to sense how targeted companies accounted for ESG issues using SASB recommended metrics as reference. Public data available in media, third sector platforms and governmental/regulatory agencies were also used as source of information.	

4. Project Learnings

The key learnings that our team obtained from this project were uncovered as we conducted the ESG analysis phase of the project. We entered the project expecting to learn an established, formalized, rigorous methodology for assessing a company's ESG performance. By the end, we did each learn how to conduct ESG analysis on a public company and gained insight into how each target company mitigates its exposure to material sustainability issues.

The process proved to be much different than imagined, however. We grew to realize that the world of ESG research has grown complex and confusing to navigate or draw informed conclusions. We learned that there is no consistent, compulsory definition for ESG reporting metrics. SASB's provisional standards do recommend specific activity metrics for each material topic—for instance, for a material issue of "Energy Management," SASB recommends reported metrics should include "Total energy consumed (Gigajoules, GJ)." However, 1.) SASB standards currently serve as guidelines, rather than minimum acceptable practices, and 2.) even when companies chose voluntary disclosure, disclosed data is often presented in biased ways. For instance, many companies claim massive emissions improvements, until a closer look reveals that creative scaling of the y-axis exaggerates a marginal decline. Or perhaps only emissions *"intensity"* (per $ of revenue) improved, while absolute emissions climbed steadily higher. To cloud matters even further, we learned that even if a company disclosed a perfect set of ESG metrics, there is no standard approach to derive a performance ranking from them.

What all this showed us was that ESG investing cannot be faithfully performed through an automated process using stock screens and filters.

ESG Ratings

One challenge encountered during the project was interpreting varied ESG scores provided by different rating agencies. A few examples of this variation is provided below.

Company/ Rater	Sustanalytics (of 100)	Vigeo (of 100)	Bloomberg (of 100)
Clorox	75	38	50
eBay	63	33	36
Philip Morris Int.	63	36	50

Because we lacked a complete understanding of the methodology and criteria behind each ranking, it was difficult to intuit which ranking provided the most accurate assessment.

We also found examples of rankings, which strongly contradicted our expectations and intuition. Below is a comparison of Costco and Philip Morris across Social scores. One would expect that Costco, famous for higher wages and better benefits, would score much higher than a company whose primary product is linked to severe health complications and premature death.

Company/ Rater	Sustanalytics (of 100)	Vigeo (of 100)	Bloomberg (of 100)
Costco	48	21	25
Philip Morris	57	31	44
PMI over Costco	19% higher	48%	76% higher

Reporting Standards

Unlike financial reporting by public companies, ESG reporting is not required to be audited by external parties and standardized methods for validating a company's claims do not exist. Our team struggled to find additional information on a company's ESG programs outside of the company's own CSR reports. We had to rely on the few news articles we could find, if any, to determine if the initiatives mentioned in the CSR reports were actually impactful programs that successfully address material sustainable issues.

Many of the firms researched produced dedicated sustainability reports in addition to relevant information disclosed in their annual 10-K filings. These reports were helpful to determine issues of focus for the firm and their relevance to SASB standards. However, it is very difficult to substantiate the claims in these reports and measure their true impact. Here are a few examples:

> *eBay 2017 Impact Report: We've disbursed $397,000 in loans and supported over 17,000 borrowers on Kiva—14,000 of which are female entrepreneurs. In total, these efforts have impacted the lives of about 85,000 people globally. We are on track to meet our targets for lending and entrepreneurs impacted.*
>
> *Clorox 2017 Integrated Report: The Burt's Bees [Clorox subsidiary] Bring Back the Bees campaign returned in 2017 to double its impact and plant 2 billion wildflowers.*

There are no readily available independent reports to verify eBay's reach of 17,000 borrowers, nor a description of the measurable impact these loans, valued at $23 per borrower, had on the 85,000 total lives ($4.67 per life impacted). In the case of Burt's Bees, planting 2 billion wildflowers would correctly be termed an output; the impact is the change resulting from these wildflowers, which is not measured or mentioned. We are left to assume these well-intentioned efforts made a positive difference, but a definitive conclusion would require more evidence.

Philip Morris seeks to deliver impact by getting smokers to switch to their smoke-free products:

> *Smoking cigarettes causes serious disease. By replacing cigarettes with less harmful alternatives we can significantly reduce the negative impact of our products on society.*

It may not come as a surprise, given the tobacco industry's historical relationship with science, that Philip Morris' smoke-free alternatives have proven to be less harmful using Philip Morris - paid researchers in Philips Morris owned labs using animal models and "smoke from a reference cigarette designed for research." How these products stand up to independent testing is yet to be seen.

Philip Morris aside, there is (likely) no harm in planting wildflowers or providing micro-loans through Kiva. These are noble causes and the people behind them at Clorox, eBay and many other companies are surely good people who want to make a positive difference. But these activities do little more than scratch the surface on what are otherwise pressing sustainability challenges. Whether their actual impact is anything more than clever marketing or a checkmark for an ESG score is hard to tell.

5. Implications for Investors

The implications of this finding are significant for investors who rely on ESG rankings to inform their investment decisions. Because there is little if any correlation across the rating agencies, the relevance of their scores is diminished as is the incentive for companies to adopt sustainable practices if ESG rankings are perceived as arbitrary. For example, if a company is able to score well on one ranking system while scoring poorly on another, it may be less inclined to adopt sustainable practices by claiming the high score as the true score. For investors, if they cannot find meaningful patterns in ESG rankings then they may lose confidence in their relevance.

On CSR reporting, now that so many companies are adopting sustainability postures - publishing reports, putting sustainability links at the top of their websites, and engaging in more CSR activities - the practice may becoming so diluted that it is being outsourced to professional consultants. A web search for "sustainability report consultants" yields an entire industry formed to perform this very function. How are investors to discern between the authentic from the fake?

In conducting our own ESG analysis, we spent hours combing through CSR reports, 10-K filings and other company documentation to inform our opinions. In very few cases did we come to a definitive and confident conclusion about a company's ESG authenticity and motive. Every company describes itself in the mostly favorable and congratulatory terms, with progress on track, goals accomplished and expectations exceeded. That environmental and social problems persist and worsen despite this reported progress suggests that these efforts, while significant, are not enough - not even close. There is opportunity for the investor community to seek more impactful returns on their investments.

6. Investment Recommendations

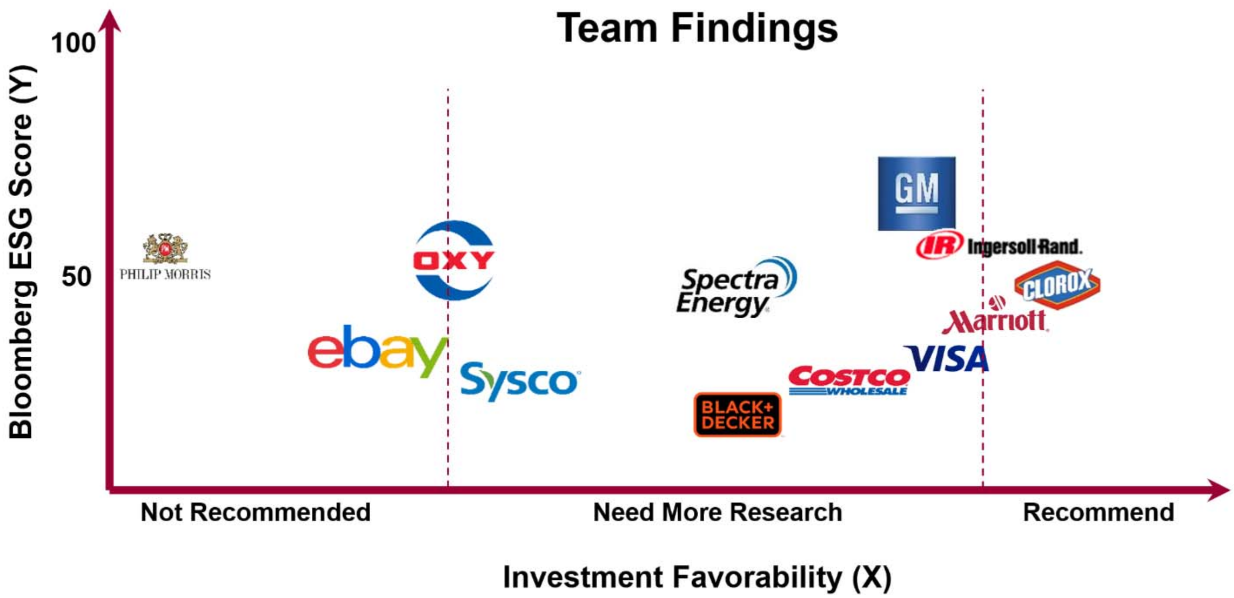
Based on our analysis, we propose the following recommendations:

Company	Bloomberg ESG Score	Project Recommendation
Clorox	45.59	Appears to take sustainability seriously. Engage Clorox investor relations to gauge the ubiquity of the company's sustainability initiatives
Costco	27.8	Costco makes mention of the company's ESG-focused initiatives online, but investor relations team claims they are not essential for business operations and are not a key focus for the company at this time.
eBay	36.36	eBay does not adequately report material issues according to SASB standards. eBay should set targets across each disclosure area and ensure these take into account the full scope of its business model.
General Motors	59.50	GM has a good ESG performance in comparison with competitors (Ford 50.4, Tesla 15.3 and Fiat 62.4) and a clear commitment on its Corporate Responsibility Report, with consistent data disclosure. The downside is the emissions scandal led by VW that also involved GM last year. On that matter, investors should advocate for a strong investment on R&D and innovation on gas emissions reduction to diminish the reputational damage.
Ingersoll-Rand	46.28	There are several strong positives signals surrounding Ingersoll Rand's sustainability performance. IR earned high ESG ratings from multiple sources and has established aggressive science-based targets for absolute reduction of key emissions. However, management needs to explain the inconsistent reporting of GHG emissions for 2013 (the base year for reduction targets) identified across 2013-2016 CSRs.
Marriott	44.63	Engage Marriott investor relations to gauge the company's focus and commitment to its sustainability initiatives
Oxy	47.30	Engage Occidental investors relations to advocate in favor of more transparency on data related to ESG topics. The company must expand its ESG approach, especially in sensitive areas such as GHG, human rights and safety.
Philip Morris	50	PMI does not belong in an ESG-mindful portfolio.
Spectra Energy	43	Considering the ESG score, Spectra largely outperforms its competitors. Still, there is room for improvement. Investors could claim a better approach in terms of results – a guide for action–with inputs, activities, outputs, and impacts.
Stanley Black & Decker	25.21	Stanley Black & Decker does a good job addressing environmental issues, driving for carbon neutrality by 2030. The company seems compassionate and committed to enhancing both local communities and underserved people around the world. However, outside of emissions, little measurable data are disclosed. Overall ESG performance would be improved greatly by extending the same commitment and transparent reporting to areas.
Sysco	33.47	Sysco has a higher ESG score than its peers, but specific targets and metrics are lacking from the company's CSR reports (peer companies largely do not disclose any ESG information). Engage Sysco investor relations to assess the company focus and commitment to sustainability initiatives
Visa	34.30	Visa trails industry leader American Express on ESG performance but outperforms Mastercard and Discover. Visa produces a consolidated Corporate Responsibility Report, but disclosure quality is only fair, and the company has not adopted long-term targets for continued improvement. Overall, I would not anticipate that Visa's current ESG stance would

	introduce substantial downside risk, but I also would not consider Visa's ESG performance best-in-class.

Figure 1 below shows where our recommendations line up against Bloomberg ESG scores.

Figure 1: Team Recommendations vs. Bloomberg ESG Scores



7. **Next Steps and Recommendations**

Despite the growing interest and volume of work around socially responsible investing, our research opened our eyes to the substantial challenges in finding good ESG data upon which to draw informed conclusions. As described above, there is little agreement across the multitude of rating agents and data vendors publishing ESG ratings. Ratings are not only inconsistent in nominal terms, but even relative performance of peer competitors can fluctuate. Undisclosed, 'proprietary' calculation methodologies used by the rating agents further obscures how to interpret the broadly dispersed ratings they publish.

Beyond the specific company recommendations discussed previously, at a system-level, our core conclusions and recommendations are as follows:

- Users of ESG data should exercise extreme caution and synthesize their own conclusions after evaluating all available resources.
- ESG investing cannot be faithfully performed through an automated process using stock screens and filters.
- A growing body of work by Professor Roberto Rigobon, and many other researchers, are attempting to shed light on *how* and *why* these inconsistencies arise.
- Even if this research successfully illuminates the obscurity, it will still be critical to consider the client's specific risk profile and investment horizon, and the return characteristics of the security, before concluding which rating is "most accurate."
- New approaches are emerging, which may be worth exploring. For example, TruValue Labs recently launched an "alternative data service" which uses machine learning and

text analytics based on SASB materiality frameworks to estimate a company's ESG momentum from public sources of data.

Perhaps in the future a standardized set of compulsory metrics and methods will emerge. In the meantime, it seems in general that the most reliable method to assess ESG performance may simply be the "old fashioned" way of closely scrutinizing a time-series of company publications looking for red flags and internal inconsistencies.

Annex 1 – Matt Berchtold Company Analyses

I. Ingersoll-Rand

II. Stanley Black+Decker

III. Visa

ESG Ratings:

	RobecoSam*	Sustainalytics	Vigeo	Asset4	Bloomberg
ESG	79	69.64	41	95.56	46.28
Environmental	85	75.04	38	94.88	41.09
Social	72	66.04	34	93.77	38.60
Governance		66.05	52	91.10	66.07
Economic	80			96.36	

Bloomberg Peer Comparison:

	Ingersoll-Rand	Lennox	AAON	AO Smith	Johnson Controls	SPX	AMETEK	Honeywell	OSI Systems
Bloomberg ESG Score	46.3	22.3	11.2	14	55.8	19.4	18.2	37.2	16.5

Company Overview[1]:

Ingersoll-Rand (IR) is a global products and services company employing 46,000 people world-wide. While the current legal entity was incorporated in Ireland in 2009, the 147 year old company's headquarters are in Davidson, North Carolina. IR's core business is comprised of Climate and Industrial segments. The Climate segment manufactures heating, ventilation and air-conditioning (HVAC) products for interior climate control, principally under the Trane, Thermo King, Nexia, and Building Advantage brands. The Industrial segment manufactures fluid handling equipment (pumps and compressors), power tools, and golf carts under the Ingersoll-Rand, ARO and Club Car brands. Each segment also provides installation, repair, and rental services to its respective industry. In 2017, Climate segment revenues were \$11.2B (79% of total revenues), and Industrial segment revenues were \$3.0B (21% of total revenues). Revenues in the U.S. amounted to \$9.2B (65% of revenues), while the remaining \$5.0B (35% of revenues) were earned across 100 countries outside the US. No single customer accounts for >10% of revenue.

SASB Material Issues:

SICS classifies Ingersoll-Rand's primary industry as a Resource Transformation – Electrical & Electronic Equipment (RT0202)[2]. Material issues in this sector based on the SASB Materiality Map include:

- Environment – Energy Management
- Environment – Waste & Hazardous Material Management
- Business Model & Innovation – Product Quality & Safety
- Business Model & Innovation – Life-cycle Impact of Products & Services
- Leadership & Governance – Business Ethics & Transparency of Payments
- Leadership & Governance – Competitive Behavior
- Leadership & Governance – Materials Sourcing

[1] Ingersoll Rand. (2018). 2017 SEC 10-K. Retrieved: https://www.sec.gov/Archives/edgar/data/1466258/000146625818000063/ir-10kx12312017.htm

[2] Sustainability Accounting Standards Board. (2015). "Electrical & Electronics Equipment Sustainability Accounting Standard."

At least a portion of Ingersoll-Rand's Industrial segment may fall under the classification Industrial Machinery & Goods (RT0203)[3] industry classification. Therefore, the following additional issues may also be material:

- Human Capital – Employee Health and Safety
- Business Model & Innovation – Fuel Economy and Emissions in Use-phase
- Business Model & Innovation – Remanufacturing Design & Services

Forward Business Strategy:

Ingersoll-Rand states their current business strategy is focused on growth through increasing recurring revenue from parts, service, controls, used equipment and rentals. They also aim to improve the efficiencies and capabilities of product lines through internal development, as well as strategic acquisition and divestiture of complimentary companies, product lines, plants and assets. On January 17, 2018, IR entered into an equal-ownership joint-venture agreement (pending close) with Mitsubishi Electric Corporation to market, sell and support new energy efficient variable refrigerant flow (VRF) and ductless heating and air conditioning systems.

Sustainability Strategy:

Observing changes in consumer preferences, IR views their commitment to sustainability as a primary vehicle for growth, with increased market share available to firms marketing differentiated energy-efficient HVAC products for commercial, residential and industrial installations. The company states, "Our commitment to sustainability starts with ensuring the viability of our business over the long term. This means achieving consistent top-quartile performance on financial measures…. The core of our growth strategy is to invest in opportunities related to energy efficiency and environmental sustainability in buildings, industrial processes and transportation."[4]

In 2014, IR laid out 'science-based' sustainability targets due by 2020 (discussed below). Quantitative targets are established relative to 2013 baseline. To drive and monitor progress, the company established an Internal Sustainability Strategy Council (group of senior executives), created the Ingersoll Rand Center for Energy Efficiency & Sustainability (central team of experts), and leverages an External Sustainability Advisory council of experts.

***Environment*: Potentially quite strong, but management must explain apparent inconsistent reporting**

According to IR's internal GRI materiality assessment, greenhouse gas emissions (GHG) is the most significant sustainability issue facing the company, with very high importance to both stakeholder decisions and business results. To address this exposure, they have adopted the following key targets:

- Reduce GHG from refrigerants by 50% **(Progress: 34% to goal).**
- Reduce total scope 1 (from sources owned/controlled by IR) and scope 2 (from purchased electricity) GHG emissions by 35%. **(Progress: 28.6% decrease in emissions *intensity*).**

According to Science-Based Targets Initiative Criteria, "Intensity targets are only eligible when they lead to absolute emission reduction." IR established absolute targets, but reported progress based in terms of intensity. Based on data reported in the 2016 CSR, absolute emissions (Scope 1 & 2) declined 21.9% from baseline. In the 1Q 2018 earnings call, CEO Michael Lamach declared that IR has achieved the 35% absolute GHG emissions reduction target two years early.[5]

Concerningly, however, inconsistencies were identified in emissions data reports across multiple years. IR advertises using ERM Certification and Verification Services to assure certain reported quantities each

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[3] Sustainability Accounting Standards Board. (2015). "Industrial Machinery & Goods Sustainability Accounting Standard."

[4] Ingersoll Rand. (2018). 2017 Annual report to shareholders. Retrieved from: https://company.ingersollrand.com/content/dam/ir-corp/documents/sustainabilitysupplement/Ingersoll_AR_2017.pdf

[5] Ingersoll Rand. (2018). Q1 Earning Call Transcript. Retrieved from: https://seekingalpha.com/article/4165874-ingersoll-rand-plc-ir-q1-2018-results-earnings-call-transcript

year (GHG emissions, water usage, hazardous and non-hazardous waste, TRIR and LTIR). While current-year emissions data have been independently verified, full sustainability reports are not audited. The table below and subsequent excerpts depict total GHG emissions presented across a series of sequential CSRs from 2013 through 2016.Total GHG emissions reported for the 2013 operating year (base year for reduction targets) have drifted up in every subsequent CSR. In their 2016 CSR, IR claims absolute emissions have declined 21.9% (based on the currently reported value of total emissions from 2013). Using the original value reported for total emissions in 2013, as of 2016 the absolute reduction of GHG emissions would only be 11.8%.

Total Reported GHG Emissions (tonnes CO_2-e):

		Operating Year			
		2016[6]	2015[7]	2014[8]	2013[9]
CSR Year	2013				682,856
	2014			657,643	697,635
	2015		661,356	692,628	736,774
	2016	602,075	692,873	718,903	770,387

Excerpt from Ingersoll Rand 2016 Sustainability Report:

GHG EMISSIONS (metric tons CO_2e)		2016	2015	2014	2013
Direct CO_2e (GHG Scope 1)		385,379	447,163	468,926	510,380
Breakdown of Scope 1 Emissions	Emissions from fuel	122,948	127,229	126,092	124,551
	Emissions from refrigerants	259,385	316,685	339,742	385,829
Indirect CO_2e (GHG Scope 2) (Emissions from electricity)		216,696	245,710	249,977	260,007
Total (Scope 1 and 2 Emissions)		602,075	$\boxed{692,873}$	718,903	$\boxed{770,387}$
Normalized GHG Emissions (metric tons CO_2e/million USD)		44.57	52.09	55.77	62.38

Excerpt from Ingersoll Rand 2013 Sustainability Report:

Total Greenhouse Gas Emissions (Metric Tons CO_2 Equivalent)

	2013	2012	2011
1% ⬇	$\boxed{682,856}$	594,011	689,122

Excerpt from 2015 ERM Certification & Verification Statement for Ingersoll Rand (matches 2015 CSR):

Based on our activities, nothing has come to our attention to indicate that the corporate 2015 absolute data for the selected indicators, as listed above, are not fairly presented, in all material respects, with the reporting criteria.

- Direct energy use: **2,014** billion BTU
- Indirect energy use: **1,443** billion BTU
- Total energy use: **3,457** billion BTU
- Scope 1 GHG emissions: **417,932** metric tons CO2e (from fuel use, refrigerants and VOCs)
- Scope 2 GHG emissions: **243,424** metric tons CO2e
- Total Scope 1 and 2 CO2e: **661,356** metric tons
- Total water use: **1,108.88** million gallons
- Total hazardous waste generated: **1,226** metric tons
- Total non-hazardous waste generated: **31,001** metric tons (of which **6,558** metric tons to landfill)
- Lost Time Incident Rate (LTIR): **0.09**
- Total recordable incident rate (TRIR): **0.77**

[6] Ingersoll Rand. (2016). Sustainability Report. Retrieved from http://www.ingersollrand.com/sustainabilitysupplement/
[7] Ingersoll Rand. (2015). Sustainability Report. Retrieved from https://company.ingersollrand.com/content/dam/ir-corp/documents/sustainabilitysupplement/2015_Sustainability_Report.pdf
[8] Ingersoll Rand. (2014). Sustainability Report. Retrieved from: https://company.ingersollrand.com/content/dam/ir-corp/documents/sustainabilitysupplement/2014-Ingersoll-Rand-Sustainability-Supplement.pdf
[9] Ingersoll Rand. (2013). Sustainability Report. Retrieved from: https://company.ingersollrand.com/content/dam/ir-corp/documents/sustainabilitysupplement/2013_Sustainability_Supplement.pdf

IR states generally in their CSR that emissions data are presented in both absolute terms and normalized with respect to revenues. From the excerpt above, total GHG emissions quantities reported are not labeled “normalized.” Moreover, the increases in reported 2013 base-year GHG emissions (increase of 5.6% from 2014 to 2015 reports, and 4.6% from 2015 to 2016 reports) exceed revenue growth for those periods.

IR includes the following blanket statement in company CSRs: *“We report data from newly opened and acquired facilities as soon as valid data is available. For recently closed or sold facilities, the data is included for the time period it was part of the enterprise and to ensure year-over-year comparisons remain consistent. As such events occur, baselines are adjusted to account for these significant changes in our operations.”* If this is the source of the discrepancy, the causes of specific adjustments are not disclosed, audited or traceable. It’s also unclear why acquisitions placed into operation in 2013 would only start producing valid emissions data three to four years later. As a result, I am unable to hypothesize any explanation of the inconsistency.

IR adopted targets to reduce non-hazardous waste to landfill by 30% and reduce total hazardous waste by 20%. As of 2016, IR reports 14% reduction of non-hazardous waste to landfill and 22% reduction of hazardous waste.

Total Hazardous Waste Generated (tonnes):

CSR Year	Operating Year 2016	2015	2014	2013
2013				1,434
2014			954	966
2015		1,226	1,469	1,488
2016	1,171	1,231	1,461	1,488

Excluding values reported in the 2014 CSR, which do not align with other years, reported quantities of hazardous waste generated and non-hazardous waste to landfill are relatively more consistent over time compared to reported GHG emissions. No explanation is provided for the anomaly in the quantities of hazardous waste generation reported in the 2014 CSR. IR also set a target to reduce water usage in water-stressed areas by 25% and claims to be ahead of target with a 30.4% reduction.

***Business Model & Innovation*: Strong while business growth aligned with sustainability goals. Monitor changes.**

Ingersoll Rand does take product innovation seriously. It is somewhat unclear if this is viewed primarily as a vehicle for revenue growth or is driven fundamentally by a core desire to do good. Fortunately, global trends in sustainability—particularly public interest in designing more energy efficient homes and offices—align IR’s incentives with the pursuit of sustainability.

Looking forward, IR believes increasingly connected products will provide a channel for substantial improvement of use-phase efficiency. In 2015, IR pledged to invest $500 million over a five-year period into product-related R&D focused on long-term reduction of GHG emissions. In mid-2016, IR launched their EcoWise product line, designed to use next generation, low global warming potential refrigerants long before the U.S. EPA mandated HFC phase-out set to commence in 2024. IR claims all EcoWise products beat minimum efficiency standards by at least 5%.

At the beginning of 2018, IR also entered into an equal-ownership joint-venture agreement (closure pending) with Mitsubishi Electric Corporation to market new energy efficient variable refrigerant flow (VRF) heating and air conditioning systems. Incorporating variable-flow pumps and compressors into HVAC systems could have a substantial impact on energy efficiency.

IR also established 2020 targets to perform a Life-Cycle Assessment (LCA) and develop End-of-Use manuals on all new products. Progress as of 2016 states LCA had been performed on 14% of new products, and seven End-of-Use Manuals have been created. Based on reported progress, it appears IR could miss the LCA target.

***Human Capital – Employee Health and Safety*: Average, in-line with peers.**

Ingersoll Rand has made progress improving health and safety metrics, with total recordable injury rate (TRIR) declining from 42.7% from a value of 1.31 in 2010, and lost time incident rate (LTIR) declining 69.0% from a value of 0.29 in 2010. Moving forward, IR set their TRIR target to under 0.6 and the LTIR target to under 0.06 for what they consider world-class injury prevention performance.

	2013	2014	2015	2016
TRIR	0.98	0.94	0.77	0.75
LTIR	0.16	0.16	0.09	0.09
Total Lost Time Cases	67	73	42	N/R
Total Days Away	2,042	3,669	2,022	N/R
Average Days Away per LTI	30.5	50.3	48.1	N/R

One observation is that total days away from work have not declined since 2013, despite the lower number of lost time incidents. As a result, average days away from work after a lost-time incident has increased to nearly 50 days. In other words, when employees do get hurt, the injuries have been pretty substantial. The next table shows TRIR for certain industry peers. In general, TRIR and LTIR is inversely related to firm size (larger firms tend to have more proceduralized safety programs). IR's safety performance seems overall in-line with peers.

	Peer Company	2013	2014	2015	2016
TRIR	**Lennox**	2.3	1.3	0.85	0.73
	United Technologies (Carrier)	0.69	0.62	0.53	N/R
	Johnson Controls	N/R	N/R	0.74	0.62
LTIR	**Lennox**	0.59	0.35	0.21	0.13
	United Technologies (Carrier)	0.17	0.15	0.13	N/R
	Johnson Controls	N/R	N/R	0.33	0.26

Leadership & Governance**: *Inconclusive. Inconsistent reporting discussed earlier raises concerns.***

All director positions are voted annually for one-year terms. The Corporate Governance Statement states the Chairman of the Board and CEO at the Company are generally held by the same person, except in unusual circumstances. Aside from current CEO Michael Lamach, the remaining ten (out of eleven total) board members are independent from company management/operations. The audit and renumeration committees are each 100% comprised of independent board members.

IR has focused on supplier relationships as well. They require 100% of new suppliers to agree to the Business Partner Code of Conduct (BPCoC). IR set a target to reduce freight emissions by at least 5% in contribution to absolute GHG reductions. As part of their strategy, the company claims to utilize a "make where we sell" philosophy—with 95% of IR products sold in the U.S. are manufactured domestically, and 85% of materials used in U.S. manufacturing sourced from domestic U.S. suppliers.

IR requires all businesses to have a packaging improvement plan. IR initiated a Returnable Packaging program and in 2016 the Material Handling business began offering a new trade-in incentive program. For 2016, IR claims to have recovered materials used from 14% of total volume of products to reuse or recycle.

In the United States, Ingersoll Rand manages a nonpartisan Political Action Committee (PAC). Federal Political Action Committee contributions, which ranged from $7,500 to $37,500 per year from 2012 to 2016.

Overall Assessment:

Ingersoll Rand received comparably favorable rankings across all ratings agents we've been monitoring. Given the relative acclaim, I was somewhat surprised to find the general demeanor of their CSR principally built on driving sustainable business growth. At the same time, Ingersoll Rand relishes in the alignment of having sustainability goals facilitate business growth opportunities ahead of them. CEO Michael Lamach stated in his opening of the 1Q earnings call, "The first element of our strategy is to continually deliver profitable growth through leadership positions and durable markets. Our end markets are underpinned by global megatrends such as sustainability, and the need to dramatically reduce energy demand and resource constraints in buildings, homes, industrial and transport markets around the world." Aside from this comment, there was negligible discussion of sustainability objectives throughout the call, however.

There are a number of strong positives signals surrounding IR's sustainability performance. IR invested to develop next generation, low-GWP refrigerant products 8 yrs. ahead of the EPA mandated phase-out of HFCs effective 2024. They've established a JV with Mitsubishi Electric to bring new HVACs with variable-flow pumps and compressors to-market, which I believe could have substantial efficiency opportunities. There are also significant optimization-driven reduction opportunities (both cost and environmental footprint) through smarter integration and the Internet of Things. The company set fairly aggressive absolute emissions reduction targets and management claims to have hit their target two years ahead of schedule. Nonetheless, lack of coverage of sustainability during the 1Q2018 earnings call or the CEO's intro letter to the 2016 CSR cause me to question if a culture of sustainability is truly engrained in the organization. Importantly, management needs to clarify the discrepancies in the time series of reported Total Scope 1 & 2 GHG emissions for base year 2013 before a final conclusion can be drawn.

Bloomberg Financials Overview:

Ingersoll-Rand PLC (IR US) - Adj Highlights

In Millions of USD	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	Current/LTM
12 Months Ending	12/31/2009	12/31/2010	12/31/2011	12/31/2012	12/31/2013	12/31/2014	12/31/2015	12/31/2016	12/31/2017	12/31/2017
Market Capitalization	**11,458.8**	**15,454.5**	**9,052.6**	**14,177.3**	**17,127.0**	**16,665.2**	**14,444.6**	**19,435.8**	**22,251.0**	**21,465.5**
- Cash & Equivalents	876.7	1,014.3	1,160.7	708.4	1,937.2	1,705.2	736.8	1,714.7	1,549.4	1,549.4
+ Preferred & Other	103.9	94.8	88.1	81.5	62.4	58.0	62.5	74.5	66.6	66.6
+ Total Debt	4,096.6	3,683.9	3,642.6	3,229.4	3,521.2	4,224.4	4,217.8	4,070.2	4,064.0	4,064.0
Enterprise Value	**14,782.6**	**18,218.9**	**11,622.6**	**16,779.8**	**18,773.4**	**19,242.4**	**17,988.1**	**21,865.8**	**24,832.2**	**24,046.7**
Revenue, Adj	**13,195.3**	**14,001.1**	**14,782.0**	**11,988.3**	**12,350.5**	**12,891.4**	**13,300.7**	**13,508.9**	**14,197.6**	**14,197.6**
Growth %, YoY	*-0.2*	*6.1*	*5.6*	*-18.9*	*3.0*	*4.4*	*3.2*	*1.6*	*5.1*	*5.1*
Gross Profit, Adj	**3,608.5**	**3,970.3**	**4,272.2**	**3,468.1**	**3,643.4**	**3,911.3**	**4,011.6**	**4,210.8**	**4,432.8**	**4,425.5**
Margin %	*27.3*	*28.4*	*28.9*	*28.9*	*29.5*	*30.3*	*30.2*	*31.2*	*31.2*	*31.2*
EBITDA, Adj	**1,374.9**	**1,756.5**	**1,915.5**	**1,429.8**	**1,760.3**	**1,758.1**	**1,860.1**	**2,007.3**	**2,080.3**	**2,082.9**
Margin %	*10.4*	*12.5*	*13.0*	*11.9*	*14.3*	*13.6*	*14.0*	*14.9*	*14.7*	*14.7*
Net Income, Adj	**540.4**	**797.6**	**880.8**	**778.5**	**937.5**	**910.7**	**997.6**	**1,080.4**	**1,162.8**	**1,164.4**
Margin %	*4.1*	*5.7*	*6.0*	*6.5*	*7.6*	*7.1*	*7.5*	*8.0*	*8.2*	*8.2*
EPS, Adj	**1.65**	**2.35**	**2.60**	**2.53**	**3.17**	**3.32**	**3.72**	**4.13**	**4.50**	**4.53**
Growth %, YoY	*-78.5*	*42.9*	*10.4*	*-2.7*	*25.5*	*4.6*	*12.1*	*11.0*	*8.9*	*9.4*
Cash from Operations	**1,734.6**	**695.4**	**1,186.8**	**1,195.4**	**1,091.5**	**973.2**	**851.1**	**1,521.9**	**1,523.5**	**1,523.5**
Capital Expenditures	**-204.2**	**-179.5**	**-242.9**	**-243.1**	**-242.2**	**-233.5**	**-249.6**	**-182.7**	**-221.3**	**-221.3**
Free Cash Flow	**1,530.4**	**515.9**	**943.9**	**952.3**	**849.3**	**739.7**	**601.5**	**1,339.2**	**1,302.2**	**1,302.2**

Source: Bloomberg

ESG Ratings:

	RobecoSam*	Sustainalytics	Vigeo	Asset4	Bloomberg
ESG	74	66.32	29	93.81	25.21
Environmental	80	68.90	31	92.96	9.30
Social	68	63.42	42	87.42	35.09
Governance		66.25	23	91.34	51.79
Economic	75			93.93	

Bloomberg Peer Comparison:

	Snap-on Inc	Fortune Brands Home & Security Inc	Masco Corp
Bloomberg ESG Score	23.6	21.5	29.3

Company Overview[10,11]:

Originally founded in 1843, Stanley Black & Decker (formerly named The Stanley Works—hence the stock ticker SWK) is a diversified global manufacturer of hand tools, power tools, hardware and electronic security products based in Hartford, Connecticut. SWK employs 58,000 world-wide, with operations grouped into three reportable segments: Tools & Storage, Industrial and Security. Products are marketed under many different brand names, including: Stanley, Black+Decker, DeWalt, Craftsman, ECOSMART, Porter-Cable, Bostitch, FatMax, and Sargent & Greenleaf (amidst others). In 2017, the SWK held the largest share of the global tool manufacturing market, with roughly 14% share of the $51B global market. SWKs Tools & Storage segment recorded $8.9B in revenues in 2017 (70% of total company revenues), while Industrial and Security recorded $1.9B each in revenues (15% of total company revenues apiece). The Tools & Storage segment is clearly SWK's bread-and-butter, with roughly 11% compound annual growth rate over the past two years, while the Industrial and Security sectors have remained flat or declined. Roughly 54% of revenues are earned in the U.S., 27% of revenues are earned in Europe, 15% in developing economies of Asia and the Americas, and 5% are earned in Canada. The only customer responsible for more than 10% of SWK's revenues was retailer Lowe's, which accounted for 11.7% of the SWK's 2017 revenues.

Breakdown of performance by segment:

		2017	2016	2015	2-yr CAGR
Tools & Storage	Revenues	8,862	7,469	7,141	11.40%
	Profits	1,450	1,267	1,170	11.32%
	Net Margin	16.4%	17.0%	16.4%	
Industrial	Revenues	1,946	1,840	1,938	0.21%
	Profits	352	304	340	1.75%
	Net Margin	18.1%	16.5%	17.5%	
Security	Revenues	1,939	2,097	2,093	-3.75%
	Profits	212	269	240	-6.01%
	Net Margin	10.9%	12.8%	11.5%	

[10] Stanley Black & Decker. (2018). 2017 SEC 10-K. Retrieved from: https://www.sec.gov/Archives/edgar/data/93556/000009355618000008/swk_10k2017.htm
[11] Stanley Black & Decker. (2018). 2017 Annual Report to Shareholders. Retrieved from: http://2017yearinreview.stanleyblackanddecker.com/downloads/SBD-2017-Complete-AR.pdf

Breakdown of performance by geographic region:

	2017	2016	2015	2-yr CAGR
United States	6,916	6,136	5,882	8.43%
Europe	3,351	3,051	2,967	6.27%
Canada	578	515	516	5.79%
Asia	1,128	1,069	1,100	1.29%
Other Americas	774	636	707	4.70%

SASB Material Issues:

SICS classifies Stanley Black & Decker's primary industry as a Resource Transformation – Industrial Machinery & Goods (RT0203)[12]. Material issues in this sector based on the SASB Materiality Map include:

- Environment – Energy Management
- Human Capital – Employee Health and Safety
- Business Model & Innovation – Fuel Economy and Emissions in Use-phase
- Business Model & Innovation – Remanufacturing Design & Services
- Leadership & Governance – Materials Sourcing

Sustainability Strategy:

Stanley Black & Decker has issued consolidated "sustainability highlights report" every year since 2013. The company has performed their own internal materiality assessment following GRI guidelines, which is available on their sustainability website. SWK's materiality assessment indicates that the company believes the issues with highest importance to both the business and stakeholders are:

1.) Customer Focus (customer satisfaction, product safety, and product innovation)
2.) Business Ethics (responsible business, IP & data privacy, transparency, material sourcing)
3.) Human Capital (employee safety, employee satisfaction, and diversity & inclusion)
4.) Environment (use of hazardous materials, waste, air pollution, water usage, and climate change)
5.) Community engagement (building partnerships, socio-economic development, and philanthropy)

In 2015, SWK has established measurable reduction targets for delivery within 5 years (by 2020), relative to base year 2015. Note, however, reduction targets are set in terms of intensity, while best practice is to set absolute reduction targets.

New in the 2017 CSR, Black & Decker set out additional aspirational targets for delivery by 2030 in support of the UN's 17 SDGs:

- Providing new skills for workers displaced by technology and invest in STEM programs to "empower 10 million makers to thrive"
- Innovate products that improve lifecycle impacts and promote underserved communities to "enhance the lives of 500 million people"
- Improve operational, supply chain, and product efficiency to positively impact the environment

<u>Environment</u>: Focal area. Average^{+} performance, possibly improving. Monitor roll-out of science-based targets.

In every year since 2013, SWK has reported on energy intensity, carbon intensity, water use intensity and waste generation intensity. Hazardous waste generation and VOC emissions were reported for the first time in 2017. From 2013 to 2015, emissions intensity was normalized with respect to production cost. Starting in 2016, however, SWK began normalizing emissions intensity with respect to working hours. No reasoning was given for the change. I might hypothesize that working hours are a direct reflection of real

[12] Sustainability Accounting Standards Board. (2015). "Industrial Machinery & Goods Sustainability Accounting Standard."

operating activity, while costs include inflation. As a result, I am not overly concerned with the change, but it would be best to seek clarification. Reported values were consistent across reports from 2013 to 2015. However, because of the change in the metric, I can't directly compare the currently reported base-year values to base-year values originally reported in 2015.

For delivery by 2020, SWK has established the following targets:

- Reduce operational energy consumption by 20%
- Reduce operational water consumption by 20%
- Reduce carbon emissions by 20% and source 10% of global energy demand with renewable energy
- Reduce waste generation by 20%, while increasing reused or recycle waste to 80% of total generation

Metric	Unit	Baseline[13] 2015	Target[14] 2017	Reported[14] 2017	Result	Reduction vs. Baseline
Energy Intensity	KBTU/hr	32.9	30	28.6	Ahead of target	13.1%
GHG Intensity	MT CO_2-e/khrs	3.34	3.03	2.94	Ahead of target	12.0%
Water Use Intensity	gal/hr	4.55	3.97	3.48	Ahead of target	23.5%
Waste Generation Intensity	lbs/hr	1.71	1.59	1.5	Ahead of target	12.3%
Hazardous Waste (absolute)	KMT	2.6	1.9	2.6	Failed to deliver target	0.0%
VOC Emissions (absolute)	MT	34.8	26.2	16.3	Ahead of target	53.2%

In the 2017 CSR, SWK also communicated that they are in the process of setting science-based targets, and intend to achieve or exceed carbon neutrality by 2030.

***Human Capital*: Monitor to ensure continued focus. In-line with peers but appears stagnant in recent years.**

SWK began 2017 targeting to end the year with safety performance metrics total recordable injury rate (TRIR) ≤ 0.55 and lost time incident rate (LTIR) ≤ 0.14. While the company has made progress improving reducing TRIR 26% over past five years, they failed to meet both of these goals. SWK's LTIR is lower than competitor Emerson but has remained fairly constant over the previous five years and could be reduced further to achieve world-class safety performance. Annual reductions in TRIR seem to have stagnated over the past three years as well. The company has set a goal to achieve zero life-changing injuries by 2020 but has not communicated other targets for continuous improvement of safety metrics.

		2017[13]	2016[15]	2015[12]	2014[16]	2013[17]
Stanley Black & Decker	TRIR	0.62	0.7	0.66	0.87	0.84
	LTIR	0.2	0.18	0.19	0.27	0.22
Bosch	TRIR	0.46	0.54	0.64	0.62	0.72
	LTIR*	N/R	N/R	N/R	N/R	N/R
Emerson	TRIR	0.46	0.54	0.62	0.76	0.82
	LTIR	0.28	0.34	0.33	0.45	0.46

Outside of safety performance, SWK is investing in supporting impacted employees displaced by technology as Industry 4.0 disrupts manufacturing. In 2017, the company built and outfitted a maker-space workshop on their corporate campus for employees to gain certification in new skills or work on

[13] Stanley Black & Decker. (2016). 2015 Sustainability Report Highlights. Retrieved from: http://www.stanleyblackanddecker.com/sites/default/files/documents/SBD-2015-Sustainability-Highlights.pdf
[14] Stanley Black & Decker. (2018). 2017 Sustainability Report Highlights. Retrieved from: http://www.stanleyblackanddecker.com/sites/default/files/2017_sustainability_report_highlights.pdf
[15] Stanley Black & Decker. (2017). 2016 Sustainability Report Highlights. Retrieved from: http://www.stanleyblackanddecker.com/sites/default/files/documents/SWK018_2016-Sustainability-Highlights_0i.pdf
[16] Stanley Black & Decker. (2015). 2014 Sustainability Report Highlights. Retrieved from: http://www.stanleyblackanddecker.com/sites/default/files/documents/SBD-2014-Sustainability-Highlights.pdf
[17] Stanley Black & Decker. (2014). 2013 Sustainability Report Highlights. Retrieved from: http://www.stanleyblackanddecker.com/sites/default/files/documents/SBD-2013-Sustainability-Highlights.pdf

prototype development. The company has committed to providing retraining necessary to assist employees to "maintain relevance in the evolving world of work."

<u>Business Innovation</u>: Clarify. Aspirational targets & social-impact projects, but no disclosures or metrics shared.

In general, each material issue suggested by SASB is included on SWK's materiality matrix except for "remanufacturing design & services." The company states in non-specific terms that they are increasingly designing products for circularity across the entire lifecycle but offers no specific disclosures on the matter. SASB states that provisional standard RT0203 is geared toward "users of large quantities of steel, iron, aluminum, glass, plastics, and other materials" which include "diesel engines, earth-moving equipment, trucks, tractors, ships, industrial pumps, locomotives, and turbines." Therefore, remanufacturing may be less material for a small tools manufacturer compared to other companies under this SICs classification. In the least, this represents an opportunity for the future.

SWK lists one of their values as "Innovate with purpose." They have set aspirational targets to enhance the lives of 500 million underserved and to improve the lifecycle impact of products and sourcing. However, no specific disclosures or measurable targets have been communicated. The company established the ECOSMART trademark, which they state is emblematic of their efforts to fully integrate sustainability in all levels and facets of the organization. In 2017, they began a pilot for low cost solar-powered water pumps in India to replace diesel-powered units for communities without developed electrical infrastructure. The company listed product innovation among their most material sustainability issues on their internal sustainability map, but no data is provided for more rigorous assessment of the consequences.

<u>Leadership & Governance</u>:

SWK claims to have shifted their global manufacturing strategy to a "make where we sell" model that both enhances responsiveness and reduces environmental impact. The company also set out the following short-term goals for completion by 2020:

- 80% of supplier directed toward firms that have completed Climate Disclosure Project Supply Chain Climate Change Assessments
- Externally certify the Environmental Management System 65% of manufacturing and distribution sites (current progress: 57% of sites certified)

As of 2015, the company claimed to have ramping up the number of life cycle assessments performed for its products, but with no specific details provided. They state they have shared their ECOSMART process with suppliers to look for whole-chain opportunities and have set long-term targets to reduce supply chain emissions by 35% by 2030.

Overall Assessment:

Stanley Black & Decker has done a relatively good job at addressing environmental issues and claims to be working toward science-based targets, driving for carbon neutrality by 2030. The company seems to have compassion and commitment to enhance both their local community and underserved populations around the world. However, outside of environmental emission, very little measurable data is disclosed, and many targets are aspirational. The company's overall ESG position could be improved greatly by extending the same committed action and transparent reporting to other areas besides environmental.

Bloomberg Financials Overview:

Stanley Black & Decker Inc (SWK US) - Adj Highlights

In Millions of USD	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	Current/LTM	FY 2018 Est	FY 2019 Est
12 Months Ending	12/31/2011	12/29/2012	12/28/2013	01/03/2015	01/02/2016	12/31/2016	12/30/2017	12/30/2017	12/31/2018	12/31/2019
Market Capitalization	**11,427.6**	**11,526.1**	**12,595.4**	**15,087.2**	**16,430.5**	**17,497.1**	**26,138.7**	**23,824.1**		
- Cash & Equivalents	906.9	716.0	496.2	496.6	465.4	1,131.8	637.5	637.5		
+ Preferred & Other	63.2	60.0	81.3	82.8	47.6	6.6	752.8	752.8		
+ Total Debt	3,452.4	3,538.0	4,202.0	3,847.3	3,799.7	3,827.4	3,831.7	3,831.7		
Enterprise Value	**14,036.3**	**14,408.1**	**16,382.5**	**18,520.7**	**19,812.4**	**20,199.3**	**30,085.7**	**27,771.1**		
Revenue, Adj	**9,435.5**	**10,147.9**	**10,889.5**	**11,338.6**	**11,171.8**	**11,406.9**	**12,747.2**	**12,780.1**	**13,795.4**	**14,545.7**
Growth %, YoY	*13.1*	*7.6*	*7.3*	*4.1*	*-1.5*	*2.1*	*11.7*	*12.0*	*8.2*	*5.4*
Gross Profit, Adj	**3,489.6**	**3,725.1**	**3,932.7**	**4,104.7**	**4,072.0**	**4,267.2**	**4,778.0**	**4,820.5**	**5,152.6**	**5,476.5**
Margin %	*37.0*	*36.7*	*36.1*	*36.2*	*36.4*	*37.4*	*37.5*	*37.7*	*37.4*	*37.7*
EBITDA, Adj	**1,385.6**	**1,735.4**	**1,602.3**	**1,750.0**	**1,777.6**	**1,865.1**	**2,061.5**	**2,176.7**	**2,319.4**	**2,531.8**
Margin %	*14.7*	*17.1*	*14.7*	*15.4*	*15.9*	*16.4*	*16.2*	*17.0*	*16.8*	*17.4*
Net Income, Adj	**791.9**	**936.7**	**755.9**	**897.4**	**934.7**	**1,004.1**	**1,135.5**	**1,206.6**	**1,297.3**	**1,471.4**
Margin %	*8.4*	*9.2*	*6.9*	*7.9*	*8.4*	*8.8*	*8.9*	*9.4*	*9.4*	*10.1*
EPS, Adj	**4.66**	**5.62**	**4.77**	**5.62**	**6.12**	**6.77**	**7.45**	**7.91**	**8.45**	**9.51**
Growth %, YoY	*10.0*	*20.7*	*-15.2*	*18.0*	*8.9*	*10.6*	*10.0*	*17.6*	*13.4*	*12.6*
Cash from Operations	**998.9**	**966.2**	**868.0**	**1,295.9**	**1,182.3**	**1,485.2**	**1,418.6**	**1,418.6**		
Capital Expenditures	**-302.1**	**-386.0**	**-340.3**	**-291.0**	**-311.4**	**-347.0**	**-442.4**	**-442.4**	**-428.1**	**-449.7**
Free Cash Flow	**696.8**	**580.2**	**527.7**	**1,004.9**	**870.9**	**1,138.2**	**976.2**	**976.2**	**1,231.0**	**1,325.8**

Source: Bloomberg

VISA

ESG Ratings:

	RobecoSam*	Sustainalytics	Vigeo	Asset4	Bloomberg
ESG	57	60.47	39	85.08	34.30
Environmental	45	60.33	42	52.04	24.81
Social	58	54.24	28	88.78	22.81
Governance		71.85	57	88.31	67.86
Economic	61			79.11	

Bloomberg Peer Comparison:

	Visa	Mastercard	PayPal	Fidelity	Worldpay Inc	Square	FleetCor Technologies	Global Payments Inc	First Data Corp	WEX Inc
Bloomberg ESG Score	34.3	24	11.2	15.3	12	11.2	11.2	15.3	17.4	11.2

Company Overview[18,19]:

Headquartered in San Francisco, CA, Visa is the global leader in electronic payments, hosting network capacity to process 65,000 transactions per second. Visa is not a bank and does not extend credit or set rates, but Visa connects consumers with over 16,800 financial institutions through 3.2 billion Visa branded credit, debit and prepaid cards accepted at 46 million merchants in 200 countries. Visa enables 111 billion transactions valued at over $10.2 trillion annually, roughly half of all credit card transactions and an even higher share of debit card transactions according to the Nilson Report. In 2017, Forbes ranked Visa the world's 28th most valuable brands.

All of Visa's operations fall under one reportable Payment Services segment, but revenue streams are split into Service Revenue, Data Processing Revenue, International Transaction Revenues, and Other Revenues. Service Revenue consists of the services supporting client usage of Visa Products and is driven by total value of processed payments. Data processing revenues are earned for network access and information processing services to authorize, clear, and settle transactions for clients globally. Data processing revenue is driven by the number of transactions processed and includes, among other things, Visa's fraud identification and risk management products. International Transaction Revenues are earned from processing of cross-border transaction, including currency conversion, and Other Revenues consist mainly of brand licensing fees.

Composition of Operating Revenue

	2017	2016	2015	% of Gross	2-yr CAGR
Service Revenues	7,975	6,747	6,302	36.15%	12.5%
Data Processing Revenues	7,786	6,272	5,552	33.72%	18.4%
International Transaction Revenues	6,321	4,649	4,064	25.85%	24.7%
Other Revenues	841	823	823	4.28%	1.1%
Client Incentives	(4,565)	(3,409)	(2,861)		
Net Operating Revenue	18,358	15,082	13,880		15.0%

[18] Visa. (2018). 2017 SEC 10-K. Retrieved from: https://www.sec.gov/Archives/edgar/data/1403161/000140316117000044/v093017.htm
[19] Visa. (2018). 2017 Annual Investor Report. Retrieved from: https://s1.q4cdn.com/050606653/files/doc_financials/annual/2017/Visa-2017-Annual-Report.pdf

Revenues earned in the United States made up 47% of 2017 net revenues and no customer that generates greater than 10% of revenues.

	Total Transaction Processing Volume			
	2017	2016	2015	2-yr CAGR
Number Transactions Processed	111.2	83.2	71.0	25.2%
United States Transaction Value	3,730	3,369	3,085	10.0%
International Transaction Value	6,435	4,095	4,303	22.3%
Total Transaction Value	10,165	7,464	7,388	17.3%

SASB Material Issues:

SICS classifies Visa's primary industry as a Technology & Communication – Software & IT Services (TC0102).[20] Material issues in this sector based on the SASB Materiality Map include:

- Environment – Environmental Footprint of Hardware Infrastructure, Energy and Water Management
- Social Capital – Data Privacy & Freedom of Expression
- Social Capital – Data Security & Fraud Protection
- Human Capital – Recruiting & Managing a Global, Diverse Skilled Workforce
- Leadership and Governance – Managing Systemic Risks from Technology Risk or Technology Disruptions
- Leadership and Governance – Intellectual Property Protection & Competitive Behavior

Visa is one of the world's largest payment processors, the following material issues for financial institutions could also impact to Visa's long-term sustainable business activity:

- Social Capital – Financial Inclusion
- Leadership and Governance – Management of the Legal & Regulatory Environment

Sustainability Strategy[21]:

Visa states in the 2016 CSR, "As a trusted brand in payments, Visa has a tremendous opportunity and responsibility to use our business to connect the world — enabling economic growth and strengthening economies while also helping improve lives and create a better world." Visa manages corporate responsibility at a functional level and created a Corporate Responsibility Working Group (comprised of fourteen senior leaders) responsible for corporate responsibility strategy, reporting and benchmarking across all operating areas. The Board of Directors also updated the Committee Charters for the Audit and Risk, and Corporate Governance Committees to formally incorporate accountability for overseeing corporate responsibility policies, programs and reporting.

In 2016/2017, Visa reviewed and updated their own internal materiality assessment, which generally aligns with SASB material issues (although titled or grouped slightly differently). In general, all material topics are discussed in Visa's CSR. Some current metrics are provided, but by and large no long-term targets are reported to drive continued improvement.

***Social Capital*: Focus area, fairly strong company-operated performance. Risk exposure to third-party breaches.**

Data Security: Processing over 300M financial transactions every day, data security is at the center of Visa's business and sustainability priorities. According to the Identity Theft Resource Center, in 2017 total data breach incidents in the U.S. increased to a record 1,579 breaches, up 44.7% from 2016 and 102.4% in just the last two years. Visa-operated infrastructure has not been the source of a breach since 2008. However, in recent years, Visa card data has been compromised during third-party data breaches. Most

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[20] Sustainability Accounting Standards Board. (2015). "Software & IT Services Sustainability Accounting Standard."
[21] Visa. (2017). 2016 Corporate Responsibility Report. Retrieved from: https://usa.visa.com/dam/VCOM/download/corporate-responsibility/visa-2016-corporate-responsibility-report.pdf

notably, the Equifax breach in 2017 allowed hackers to exploit personal data for 143 million U.S. consumers, including 200,000 credit cards. Visa dedicates considerable discussion to this issue in the Risk Factors section of their latest 10-K, stating: “Although these merchant breaches have not had a direct, material impact on us, we believe these incidents are likely to continue and we are unable to predict the direct or indirect impact of these future attacks to our business.”

To ensure security now and in the future, the company deploys multi-layered data protection approaches built from on four strategic objectives: protect data, devalue data, harness data, and empower consumers. Protecting data includes maintaining compliance with Payment Card Industry Security Standards Council (PCI SSC) standards (an industry consortium that Visa helped found in 2006) and performing internal/external audits and penetration testing to identify vulnerabilities. Devaluing data involves redesigning transaction processing so that stolen information cannot be used for fraud, which may be key for Visa to mitigate its exposure to liabilities resulting from third-party data breaches. Examples include the introduction of chip-enabled cards and tokens for digital payments, which each use a one-time code or digital alias instead of transmitting the purchaser’s 16-digit account number. Visa claims that counterfeit fraud at chip-enabled merchants decreased 52% in the first year after chip-cards were introduced. Harnessing data involves integrating new data sources (such as biometrics or geo-location of the purchaser’s mobile device) into advanced predictive analytics. Finally, empowering consumers involves encouraging consumers to set up transaction controls and transaction alerts to quickly identify suspicious activity.

Data Privacy: Visa dedicates a page of its corporate responsibility report to discussing data privacy policies and practices relating to collection and usage or customer data, but no quantitative metrics or targets are provided. Visa’s Corporate Responsibility Report states they do not generally collect consumer data, other than where required to directly provide payment services (such as authenticating transactions). Visa’s online privacy policy[22] states on the other hand that affiliated third parties may collect browsing data to deliver behavior-based advertisements, and Visa may aggregate anonymized marketing reports. Generically, Visa claims that their approach to privacy is built around compliance and offering consumers a choice to opt-out using clearly written communication.

Financial Inclusion: Visa dedicates an entire section of their corporate responsibility report to expanding access to financial services to 2 billion underserved adults around the world. This is one area where Visa has set long-term targets. In support of the World Bank’s SDG to provide universal access to financial services by 2020, in 2015 Visa committed to provide access to electronic payment accounts to 500 million people over the next five years. As of the 2016 Corporate Responsibility Report, 162 million people received a first-time Visa payment account in the first two years. More generally, Visa describes their approach to financial inclusion is built on four main strategies: 1.) innovate products that help reach the underserved, 2.) enhance small-merchant acceptance by providing education and training, 3.) partner with local organizations that have established relationships with underserved communities, and 4.) work with researchers and global institutions to advocate for an enabling environment that encourages investment.

***Environment*:[23] Below average, but potentially improving**

Visa completed nine annual environmental impact audits from 2008 (the year of Visa’s IPO) to 2016. Starting from 2015 onward, Visa has environmental impact data independently verified by a third party. Visa presents energy an emissions data in absolute terms, as well as in various normalized forms (normalized with respect to total global square footage, revenue, or full-time employees). Data from Visa’s 2016 CSR was consistent year-over-year compared to the 2015 report (note, though, only 2015 and 2016 CSR reports could be found online).

Ignoring small yearly variations, roughly 53% of Visa’s energy usage supports its data centers, 27% of energy usage and emissions result from travel, and the remaining 20% results from office space.

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[22] Visa. Privacy Policy. Retrieved from: https://usa.visa.com/legal/privacy-policy.html
[23] Visa. (2016). 2015 Corporate Responsibility Report. Retrieved from: https://usa.visa.com/content/dam/VCOM/download/corporate-responsibility/visas-2015-corporate-responsibility-report.pdf

(Increased travel in 2016 due to the acquisition and integration of Visa Europe resulted in higher portion of emissions from travel for that year.) Relative to the 2009 baseline, absolute GHG emissions have increased 21% to 127,708 metric tonnes CO_2-e. Normalized GHG emissions have declined 25% (normalized by global square footage) and 46% (normalized by revenue) from baseline. Visa also monitors water usage and solid waste to landfill, reporting that 76% of solid waste was recycled or composted in 2016, up from 57% in 2014. The company claims that 57% of owned or leased buildings have achieved green-building certification.

As of the most recently published 2016 CSR, Visa had not reported any long-term improvement targets. While historic environmental performance has been lackluster, according to a press release dated Feb. 28, 2018[24], Visa recently committed to shift to 100% renewable electricity by the end of 2019. Progress should be monitored moving forward, but this would mark a significant step in the pursuit of environmental sustainability.

<u>Human Capital</u>: Average

Like all large companies, employee retention can present material risks to operations. This is certainly true for Visa, a payment technology company headquartered in the outer edges of Silicon Valley. Several pages are dedicated to discussing Visa's investments in its human capital. In 2016, Visa launched Visa University, offering professional development and leadership development curricula to employees (with physical campuses in Foster City, CA and Singapore, and additional programming online). Visa also celebrates corporate emphasis on diversity and inclusion, including several professional development programs geared specifically towards women and unconscious bias training required for all senior leaders. Overall, these efforts seem fairly standard for large companies.

	Leadership Positions	Total Workforce
By Gender	68% Male 32% Female	60% Male 40% Female
By Race	65% White 20% Asian 10% Hispanic 4% Black	45% White 36% Asian 12% Hispanic 5% Black 3% Other

<u>Leadership & Governance</u>:[25] Monitor. Dominant market share within a rapidly evolving sector.

All director positions are voted annually for one-year terms. While CEO Alfred Kelly does sit on the Board of Directors, the Chair position is held by another independent Director Robert Matschullat. The remaining nine board members (out of ten total) have all be determined to be independent from management and company operations in accordance with SEC guidelines. Note, however, the Board's leadership structure is not fully specified in the Articles of Incorporation or the Corporate Governance Guidelines, and the Board has the right to recommend changes at their discretion (within boundary limitations). The Audit and Risk, Compensation, and Nomination Committees each have 100% independent membership.

Technology Risks: Visa states in their most recent 10-K, "The global payments industry is undergoing significant and rapid technological change, including mobile and other proximity payment and acceptance technologies, ecommerce, tokenization, crypto-currencies, new authentication technologies, including biometrics, distributed ledger and blockchain technologies. We expect new services and technologies to continue to emerge and evolve."

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[24] Goldberg, Marni. "Visa Commits to 100% Renewable Electricity by End of 2019". Visa Newsroom. 2/28/2018. Retrieved from: https://usa.visa.com/about-visa/newsroom/press-releases.releaseId.15496.html
[25] Visa. (2018). Annual Proxy Statement. Retrieved from: https://s1.q4cdn.com/050606653/files/doc_financials/annual/2017/Visa-2018-Proxy-Statement-FINAL-h(12.07.17).pdf

The company sees key growth opportunities in expanding access to electronic payment in developing countries, as and in increasing connectedness through the Internet of Things. Between 2016 and 2017, Visa opened four new regional innovation centers in Singapore, Miami, Dubai, and London. In 2017, Visa and Honda demonstrated integration of Visa Checkout for in-vehicle payments (e.g. for parking or fuel). Despite the changing industry, Visa's market dominance and recent growth in international transaction revenue have equity analysts optimistic about Visa's outlook, projecting 10% CAGR over the next five years. Nonetheless, increased competition could put downward pressure on Visa's pricing power to set fees.

Intellectual Property and Anticompetitive Behavior: Visa discusses their compliance policy on Anticompetitive Behavior in their CSR. The company requires all employees to annual compliance training, including training on Antitrust and Competition Law, and reports that 100% of employees have completed the required training. Visa does not disclose specific metrics regarding IP or Antitrust litigation, but "Note 19–Legal Matters" in the company's 10-K discloses ongoing class-action Antitrust law suits filed against Visa and Mastercard by groups of merchants regarding interchange fees and alleged damages.

Overall Assessment:

With regards to ESG performance, Visa trails industry leader American Express, but outperforms Mastercard and Discover. Visa does produce a consolidated Corporate Responsibility Report (which Mastercard and Discover do not), but disclosure quality is only fair, and the company has not shared long-term targets for continued improvement.

Through the 2016 reports, much of Visa's emphasis focused largely on technology innovation, expanding access to developing countries, and talent retention. Recent announcements regarding converting to renewable energy might signify increased focus on environmental impact, but this needs to be monitored and confirmed.

Overall, I would not anticipate that Visa's current ESG stance would introduce substantial downside risk, but I also would not consider Visa's ESG performance best-in-class.

Bloomberg Financials Overview:

Visa Inc (V US) - Adj Highlights

In Millions of USD 12 Months Ending	FY 2011 09/30/2011	FY 2012 09/30/2012	FY 2013 09/30/2013	FY 2014 09/30/2014	FY 2015 09/30/2015	FY 2016 09/30/2016	FY 2017 09/30/2017	Current/LTM 12/31/2017	FY 2018 Est 09/30/2018	FY 2019 Est 09/30/2019
Market Capitalization	**58,889.6**	**89,920.9**	**121,921.8**	**131,862.7**	**169,552.4**	**193,766.1**	**218,478.2**	**255,548.0**		
- Cash & Equivalents	4,109.0	6,100.0	7,015.0	6,965.0	9,399.0	12,869.0	15,364.0	14,225.0		
+ Preferred & Other	0.0	0.0	0.0	0.0	0.0	5,717.0	5,526.0	5,476.0		
+ Total Debt	—	0.0	0.0	0.0	0.0	15,882.0	18,367.0	16,621.0		
Enterprise Value	**—**	**83,820.9**	**114,906.8**	**124,897.7**	**160,153.4**	**202,496.1**	**227,007.2**	**263,420.0**		
Revenue, Adj	**9,188.0**	**10,421.0**	**11,778.0**	**12,702.0**	**13,880.0**	**15,082.0**	**18,358.0**	**18,759.0**	**20,157.3**	**22,540.1**
Growth %, YoY	*13.9*	*13.4*	*13.0*	*7.8*	*9.3*	*8.7*	*21.7*	*17.4*	*9.8*	*11.8*
Gross Profit, Adj	**—**	**—**	**—**	**—**	**—**	**—**	**—**		**15,783.1**	**17,648.9**
Margin %	—	—	—	—	—	—	—		*78.3*	*78.3*
EBITDA, Adj	**5,751.0**	**6,572.0**	**7,639.0**	**8,585.0**	**9,572.0**	**10,526.0**	**12,719.0**	**12,930.0**	**14,367.3**	**16,138.2**
Margin %	*62.6*	*63.1*	*64.9*	*67.6*	*69.0*	*69.8*	*69.3*	*68.9*	*71.3*	*71.6*
Net Income, Adj	**3,610.6**	**4,411.0**	**4,982.0**	**5,457.0**	**6,151.1**	**6,954.3**	**8,226.4**	**8,682.6**	**10,236.1**	**11,749.1**
Margin %	*39.3*	*42.3*	*42.3*	*43.0*	*44.3*	*46.1*	*44.8*	*46.3*	*50.8*	*52.1*
EPS, Adj	**1.01**	**1.63**	**1.90**	**2.16**	**2.50**	**2.88**	**3.43**	**3.65**	**4.41**	**5.21**
Growth %, YoY	*35.3*	*61.6*	*16.7*	*13.9*	*15.8*	*15.1*	*19.2*	*20.0*	*28.5*	*18.0*
Cash from Operations	**3,872.0**	**5,009.0**	**3,022.0**	**7,205.0**	**6,584.0**	**5,574.0**	**9,208.0**	**9,462.0**		
Capital Expenditures	**-353.0**	**-376.0**	**-471.0**	**-553.0**	**-414.0**	**-523.0**	**-707.0**	**-677.0**	**-728.0**	**-740.0**
Free Cash Flow	**3,519.0**	**4,633.0**	**2,551.0**	**6,652.0**	**6,170.0**	**5,051.0**	**8,501.0**	**8,785.0**	**10,680.8**	**11,979.8**

Source: Bloomberg *Right click to show data transparency (not supported for all values)*

Annex 2 - Courtney Crowell Company Analyses

I. Costco

II. Marriott

III. Sysco

ESG Summary	RobecoSam	Sustainalytics	Vigeo	Asset4	Bloomberg
ESG	29	53.58	27	85.52	27.75
Environment	31	56.93	25	84.69	15.63
Social	20	48.09	21	61.83	24.56
Governance		57.68	42	77.59	51.79
Economic	34			86.35	

1. Company Overview

Costco Wholesale operates a chain of ~750 discount warehouses around the globe, where members can buy high quality food, home goods, clothing and electronics at low prices. The company is well-known for offering customers unlimited free samples and bulk-size products. Costco Business Centers operate as discount warehouses for business customers, while Costco Wholesale Warehouses are open to all paying members (~100M members worldwide). The company ended fiscal year 2017 with $126.2B in revenues and employs 239,000 full and part-time employees around the world.

2. Materiality Issues

The Sustainability Accounting Standards Board (SASB) is an independent organization established to help investors assess firms according to sustainability standards most material to a company's industry. According to SASB, Costco is categorized under Consumption II – Multiline and Specialty Retailers and Distributors (CN0403), and issues of most relevance to this industry are shown in Figure 1[26]. The following section discusses how Costco addresses these and other ESG issues.

Figure 1: SASB Materiality Issues for Costco

Multiline & Specialty Retailers & Distributors	
Area	**Issue**
Environment	▪ Energy management
Social Capital	▪ Data security & customer privacy
Human Capital	▪ Fair labor practices ▪ Diversity & inclusion ▪ Compensation & benefits ▪ Recruitment, development & retention
Business model & innovation	▪ Product packaging ▪ Product quality & safety
Leadership & governance	▪ Supply chain management

3. Corporate ESG Strategies

Costco discusses a number of the material issues listed above, and how the company is working to address them, directly on the company website.

i. Human Capital

The first section of the company's Sustainability Commitment website addresses employee relations/human capital. According to the site, Costco believes in paying competitive wages and benefits because this helps the company keep turnover low and productivity high. From a disclosure standpoint, Costco reports metrics on human capital but does not publish specific targets the company is striving towards.

[26] Sustainability Accounting Standards Board. (2015). "Consumption II Sustainability Accounting Standard."

Costco also believes in promoting from within their own workforce, and claims that 70% of warehouse managers began at Costco as hourly employees. From Costco's perspective, having more tenured employees with significant experience in business operations is advantageous for the business and for improving customer experience.

Additionally, Costco seems to actively promote a culture that embraces diversity and inclusion. The company makes available to the public its annual Equal Opportunity Report that discloses employee race and gender statistics[27].

ii. Environment

The Materiality map only lists Energy Management as a material issue under the environment category that Costco's business faces, but according to Costco's sustainability website the business is actively addressing additional environmental initiatives to offset their impact.[28] The website details methods Costco is using to build sustainable construction and site development, limit greenhouse gas emissions, manage water usage and waste more effectively, adopt recycling programs for organic and non-organic waste (which the company tracks in its annual Global Recycling Summary Report)[29][30], invest in renewable energy to power stores and distribution centers, and encourage streamlining of its transportation and logistics processes to reduce costs and its carbon footprint. From a disclosure standpoint, Costco reports metrics on environmental impact initiatives but does not publish specific targets the company is striving towards.

iii. Leadership & Governance / Business Model & Innovation

Costco also seems to be well aware that the company can improve the sustainability of its supply chain and packaging waste. The company mentions on its website a handful of initiatives they are undertaking to address these material issues including: removing PVC plastic from packaging, efforts to replace Styrofoam with recyclable materials, remanufacturing package sizes to better fit onto shipping pallets, pallet reconfiguration to reduce shipping costs and the number of delivery trucks on the road, optimizing delivery routes to reduce the amount of time delivery trucks are running, improving traceability in the company supply chain by sourcing its own private label products and partnering with cooperatives in foreign countries, requiring all suppliers to sign and adhere to the Costco Supplier Code of Conduct, and developing multiple sourcing policies to reduce harm to animals, humans and the environment as they relate to the company supply chain. From a disclosure standpoint, Costco reports metrics on these initiatives but does not publish specific targets the company is striving towards.

iv. Improving Supply Chain Traceability with Kirkland Signature:

Costco aims to improve supply chain transparency and traceability through its private label products under the Kirkland Signature brand. The company mentions various initiatives and programs its pursuing for some of its products, including olive oil, coffee, organic eggs, gasoline, organic milk cocoa, salmon, bed sheets, and honey.[31] There are some case studies and reports on these efforts, but no overall report exists highlighting specific metrics.

v. Sustainable Seafood Sourcing Program:

Costco's seafood sourcing policy aims to:

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[27] Costco Wholesale. (2018). Costco Equal Employment Opportunity Report 2016. Retrieved from https://www.costco.com/wcsstore/CostcoUSBCCatalogAssetStore/homepage/2015-Certified-Consolidated-EEO-1-Report.pdf

[28] Costco Wholesale. (2018). Corporate Sustainability Reports. Retrieved from http://phx.corporate-ir.net/phoenix.zhtml%3Fc=83830%26p=irol-sustainability

[29] Costco Wholesale. (2018). Costco Waste Stream Management Initiatives: https://www.costco.com/sustainability-waste-stream-management.html

[30] Costco Wholesale. (2018). Global Waste Summary 2017. Retrieved from https://www.costco.com/wcsstore/CostcoUSBCCatalogAssetStore/feature-pages/Attachment/Global-Waste-Summary-FY2017.pdf

[31] Costco Wholesale. (2018). "Kirkland Signature Supply Chain Traceability." Retrieved from https://www.costco.com/sustainability-kirkland-signature.html

- "To continually source sustainable seafood products from either wild fisheries or farmed aquaculture in ways that meet current demands without compromising the availability of scarce resources for future generations.
- To consider these factors when sourcing seafood: the condition of fish stocks (biomass); the protection of and respect for the marine, coastal, and freshwater ecosystems; governmental and regulatory agency guidelines; and practices that will mitigate or limit environmental impacts associated with aquaculture and fishing practices. As science and industry evolve, we will continue to refine these global policies"[32]

The company website highlights various programs the company is involved in to support these objectives, and certification programs they are partnered with, but there is no mention of specific targets or metrics against these efforts.

Recently, Costco consumers filed a lawsuit against the company accusing Costco of selling farmed shrimp from Thailand that was harvested using unpaid, forced labor. The lawsuit was dropped in January, but the claim of labor abuses in Costco's supply chain has not been disproved and still remains a concern to consumers[33].

Overall, Costco appears to be addressing, or at least thinking about, the material issues the business faces in its day-to-day operations. The one material issue we did not find significant information on was Data Security & Customer Privacy. Costco does not do a large amount of business through their website, so the company might not have as significant exposure as Amazon or other large e-commerce websites to potential hacks and fraud. However, they do have a brief section on their website that lists potential instances of fraud that can happen and how to prevent it.

4. Strategy Evaluation:

It's always a challenge to determine if what a company says it's doing to address material issues is actually circulating through its employees and being engrained in the company culture and strategy. However, based on our research, we believe Costco is going beyond lip service and really striving to reduce the company's impact on the environment, improve working conditions for its workers, and provide its customers with a great experience in an often high-waste industry, but there will always be room for improvement.

i. Accolades and Criticism

Costco has been named America's Best Large Employer in 2017 by Forbes, which commends the company for offering part-time employees health insurance among a list of other employee perks.[34] Costco employees also gave the company high remarks on its environmental efforts and working conditions. Freya Williams, author of Green Giants: How Smart Companies Turn Sustainability into Billion-Dollar Businesses, just added Costco to her list of Green Giant companies that are proving the business case for sustainability initiatives[35]. Despite these positive acknowledgements, Costco still has some work to do. According to CSRHub, Costco only ranks in the 50th percentile of the ~17,800 companies they track CSR initiatives for, suggesting Costco is very average along CSR strategies.[36] Additionally, despite publicly announcing efforts to sustainably source their seafood, Costco tends to receive poor ratings on seafood sustainability practices.

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[32]Costco Wholesale. (2018). "Costco Wholesale Corporation Sustainability Commitment." Retrieved from https://www.costco.com/sustainability-introduction.html

[33] Rosenblatt, Joel. "Costco Defeats Lawsuit Over Shrimp Linked to Thai Slave Labor." *Bloomberg.* 1/24/17. Retrieved from https://www.bloomberg.com/news/articles/2017-01-25/costco-defeats-lawsuit-over-shrimp-linked-to-thai-slave-labor

[34] McCarthy, Niall. "Costco Named America's Best Employer 2017." *Forbes.* 5/10/217. Retrieved from https://www.forbes.com/sites/niallmccarthy/2017/05/10/costco-named-americas-best-employer-2017-infographic/#4f9124656022

[35] Williams, Freya. "Welcome to the New Great Giants." *Futerra.* 7/6/2016. Retrieved from https://www.wearefuterra.com/2016/06/07/welcome-to-the-new-green-giants/

[36] Costco Wholesale. (2018). CSR Hub Preview Report. Retrieved from https://www.csrhub.com/CSR_and_sustainability_information/Costco-Wholesale-Corporation

5. Peer Comparison

	Costco	Walmart	Target	BJ's Wholesale
Bloomberg	27.8	34	53.6	16.3
Sustanalytics	20	37.1	86.3	

Costco vs. Walmart*

2017 Data	Revenue (Net) $M	Staff	GHG Release	Energy Use	Water use	Waste	Community Spending	Women in Mngt
Costco	$129,025	231K	1,873.5**	NA	NA	NA	NA	NA
Walmart	$485,873	2.3M	21,000	NA	NA	NA	NA	12.5%

*BJ's Wholesale does not disclose significant ESG data on Bloomberg
**2015 was last year Costco disclosed GHG Emissions to Bloomberg

6. Conclusion

Costco's ESG scores are ranked near its peers and the company appears to be undertaking significant initiatives to address its material sustainability issues. Costco is forthcoming about the initiatives it's undertaking, but is lacking on disclosure of targets and metrics. While the company appears to be addressing all of the SASB material issues, the company might be trying to boil the ocean when it comes to its sustainability initiatives and, as a result, might not be making as significant of an impact in any particular issue as it could be. Further discussion with Costco representatives may help reveal how thoroughly the company's stated values and mission penetrate throughout the organization, however, recent efforts to engage with Costco's Investor Relations team yielded minimal additional information for BCA to review.

Marriott

ESG Summary	RobecoSam	Sustainalytics	Vigeo	Asset4	Bloomberg
ESG	44	59.45	31	93.20	44.63
Environment	59	54.70	33	85.91	39.53
Social	34	55.00	24	88.57	38.60
Governance		73.29	43	91.39	62.50
Economic	47			89.82	

7. Company Overview

Marriott International, Inc. is a leading global lodging company with more than 6,500 properties across 127 countries and territories, reporting revenues of more than $22 billion in fiscal year 2017. Founded by J. Willard and Alice Marriott and guided by family leadership for 90 years, the company is headquartered outside of Washington, D.C. in Bethesda, Maryland.

8. Materiality Issues

The Sustainability Accounting Standards Board (SASB) is an independent organization established to help investors assess firms according to sustainability standards most material to a company's industry. According to SASB, Marriott is categorized under the Services – Hotel & Lodging SICS category, and issues of most relevance to this industry are shown in Figure 1[37]. The following section discusses how Marriott addresses these and other ESG issues.

Figure 1: SASB Materiality Issues for Marriott

Hotel & Lodging	
Area	**Issue**
Environment	▪ Energy management ▪ Water & wastewater management ▪ Biodiversity impacts
Human Capital	▪ Fair labor practices ▪ Compensation & benefits ▪ Recruitment, development & retention
Business Model & Innovation	▪ Environmental, social impacts on assets & operations

9. Corporate ESG Strategies

Marriott discusses a number of the material issues listed above, and how the company is working to address them, directly on the company website.

vi. Environment

Marriott highlights the following environmental initiatives, goals and targets in its 2017 Sustainability & Social Impact Highlights report. The company is actively reporting on and tracking Sustainability & Social Impact Goals that it aims to achieve by 2025. Marriott designed these objectives around the UN Sustainable Development Goals (SDGs)[38].

Issue	Initiative	Progress
Energy Management	▪ Reduce carbon intensity by 30% by 2025	▪ 73% of properties use high-efficiency lighting ▪ Reduced energy intensity (measured in kWh per sq. meter of space) by 13.2 %

[37] Sustainability Accounting Standards Board. (2015). "Hotel & Lodging Sustainability Accounting Standard."
[38] Marriott International Inc. (2018). Sustainability & Social Impact Goals Report. Retrieved from http://serve360.marriott.com/wp-content/uploads/2018/03/Serve_360_goals_page_tabloid_Mar2018.pdf

	▪ Achieve a minimum of 30% renewable energy use across properties	from 2007 baseline (~2.4% YoY reduction) ▪ Reduced GHG emissions intensity (measured in kg per sq. meter of space) by 15.8% from 2007 baseline (~1.0% YoY reduction)
Water & Wastewater Management	▪ Reduce water intensity by 15%	▪ Reduced water intensity (measured in cubic meters per occupied room) by 7.7% from 2007 baseline (~2.0% YoY reduction)
Waste Management	▪ Reduce waste to landfill by 45% ▪ Reduce food waste by 50%	▪ Not reported in 2017 report

Marriott appears to be very forthcoming on its targets and progress towards these targets for environmental sustainability. However, the metrics are being reported in per occupied room so overall GHG emissions, water usage and energy use could increase if the company adds more properties to its portfolio. According to available Bloomberg data, the company is seeing annual increases in overall GHG Emissions (9% in 2014, 4% in 2015). GHG Emissions grew 75% in 2016 due to the acquisition of Starwood Hotels (data was not available for legacy Marriott property GHG emissions in 2016).[39]

Marriott does not disclose any current initiatives or commentary around biodiversity impacts of its business operations.

vii. Human Capital

Marriott highlights the following human capital initiatives, goals and targets in its 2017 Sustainability & Social Impact Highlights report.

Issue	Initiative	Progress
Fair Labor Practices	▪ Achieve gender representation parity for global company leadership	▪ Not reported in 2017 report
Compensation & Benefits	▪ Increase number of properties with Healthy Hotel Certification	▪ 61% of managed hotels received certification in 2016 ▪ 99% of properties has at least one TakeCare Champion ▪ 47% of properties offer group wellness sessions on property
Recruitment, Development & Retention	▪ Invest at least $5M in programs and partnerships that develop hospitality skills and opportunity among youth, diverse populations, women, people with disabilities, veterans and refugees	▪ Not reported in 2017 report

As of 2016 Marriott employed ~224K employees worldwide (excluding Starwood employees), 53% of which are women, and the company has a 17% voluntary turnover rate. Marriott does not disclose compensation data for its employees, of which 85% are hourly associates.

Marriott has taken action to maintain the health and happiness of its people. In 2017 the company was ranked fourth on Fortune's 100 Best Workplaces for Women. Additionally, for the second year in a row, Marriott International has been named one of the Best Workplaces for Millennials, by global research and consulting firm Great Place to Work and Fortune magazine, landing in the top 20 at #14.

[39] Marriott International Inc. (2018). 2017 Sustainability & Social Impact Highlights Report. Retrieved from http://serve360.marriott.com/wp-content/uploads/2017/10/2017_Sustainability_and_Social_Impact_Highlights.pdf

However, Marriott and many large hotel chains around the world continue to face scrutiny and legal issues around employing illegal immigrants and other labor mistreatment. Many hotel chains, including Marriott, contract low skill workers through labor recruiters abroad, and thus, do not need to provide the same compensation and benefits as direct employees[40]. Lawsuits have been brought against large hotels chains claiming labor abuse and exploitation of these workers. While Marriott has not been specifically named in any lawsuits around worker abuse and exploitation the company has worked through labor-related lawsuits in the past. In 2017 and 2018 Marriott was sued for withholding overtime wages from restaurant staff[41], and for failing to adequately disclose and gain authorization for new employee background checks.[42] A large hotel corporation like Marriott is expected to face many law suits, but labor lawsuits are particularly prevalent in the hospitality space and should be considered when making investments in the sector.

viii. Business Model & Innovation

Marriott's 2025 Sustainability & Social Impact goals contains initiatives that address the company's efforts to reduce the environmental and social impacts of assets and operations, including the following.

Issue	Initiative	Progress
Environmental, Social Impacts on Assets & Operations	▪ 100% of hotels to have sustainability certification; 650 hotels to pursue LEED certification by 2025 ▪ By 2020, LEED certification or equivalent will be incorporated into ▪ building design and renovation standards, including select service ▪ prototype solutions for high-growth markets ▪ By 2020, 100% of all prototypes will be designed for LEED certification ▪ By 2025, partner with owners to develop 100 adaptive reuse projects	▪ As of 2016, 301 properties are LEED certified or registered ▪ 2,220 properties have earned TripAdvisor's GreenLeaders badge

Marriott's business operations appear to be environmentally conscious as the company maintains and build new properties around the globe.

Marriott is an active participant in the Carbon Disclosure Project (CDP) Climate Change program, which is supports companies and cities to disclose the environmental impact of major corporations. The program aims to make environmental reporting and risk management a business norm, and drive disclosure, insight and action towards a sustainable economy. The reports that Marriott submits to CDP are publicly available on its website[43].

[40] Ramchandani, Ariel. "A Horrifying Path to America for Hotel Workers." *The Atlantic.* 3/1/2018. Retrieved from https://www.theatlantic.com/business/archive/2018/03/hotel-workers/554135/

[41] Stoops, Kevin J. "Lawsuit Accuses Marriott of Illegally Withholding Overtime Pay from Courtyard Hotels Food & Beverage Managers." *Sommers Schwartz Blog.* 5/10/2017. Retrieved from https://www.sommerspc.com/blog/2017/05/marriott-food-beverage-managers-overtime/

[42] Ahearn, Thomas. "Class Action Lawsuit Filed Against Marriott Resorts for Alleged FCRA and California Labor Code Violations." *Employment Screening Resources Blog.* 9/6/2017. Retrieved from http://www.esrcheck.com/wordpress/2017/09/06/class-action-lawsuit-filed-against-marriott-resorts-for-alleged-fcra-and-california-labor-code-violations/

[43] Marriott International Inc. (2018). Marriott CDP Request Submission Reports. Retrieved from

- https://www.marriott.com/Multimedia/PDF/CorporateResponsibility/2017_Reports/Marriott_CDP_Climate%20Change_2017.pdf
- https://www.marriott.com/Multimedia/PDF/CorporateResponsibility/2017_Reports/Marriott_CDP_Water_2017.pdf

10. Peer Comparison

	Marriott	Hyatt Hotels	Hilton Worldwide	Wyndham Worldwide
Bloomberg	44.6	38.8	19.8	46.3
Sustainalytics	74.2		83.9	80.6

2017 Data	Revenue (Net) $M	Staff	GHG Release	Energy Use	Water use	Waste	Community Spending	Women in Mngt
Marriott	$22,894	224K	6,834	16,825	125,600	81,609	$28.6M	36.4%
Hyatt	$4,685	45K	1,580	4,188	30,100	NA	$7.6M	18.2%
Hilton	$9,140	169K	NA	NA	NA	NA	NA	14.3%
Wyndham	$5,076	38K	436	1,319	10,357	NA	$3.4M	25%

11. Conclusion

Overall, Marriott's ESG ratings are typically ranked higher than its closest peers and the company discloses a significant amount of information regarding its sustainability initiatives. As the company works to integrate the Starwood Hotels portfolio into its operations it will be interesting to see how effectively Marriott can also instill its sustainable practices to its growing business.

- https://www.marriott.com/Multimedia/PDF/CorporateResponsibility/2017_Reports/Marriott_CDP_Forest_2017.pdf

Sysco

ESG Summary	RobecoSam	Sustainalytics	Vigeo	Asset4	Bloomberg
ESG	30	63.62	30	93.81	33.47
Environment	18	63.36	23	93.33	17.05
Social	27	56.35	25	84.74	52.63
Governance		75.62	45	94.15	51.79
Economic	41			88.28	

12. Company Overview

Sysco is the global leader in selling, marketing and distributing food and non-food products to restaurants (61% of customers), healthcare (9%) and educational facilities (9%), lodging establishments (9%) and other customers (12%) around the world. Sysco estimates they have 16% share of the $250B US foodservice market. The company reported sales of $55.4B in 2017, up 10% from fiscal year 2016. The four operating segments of the business are broken down as such:

- U.S. Foodservice Operations (68% of sales) - primarily includes U.S. Broadline operations, custom-cut meat and seafood companies, FreshPoint (specialty produce companies) and European Imports (a specialty import company)
- International Foodservice Operations (19.2% of sales) - includes broadline operations in Canada and Europe, including the Brakes Group (acquired in fiscal 2017), Bahamas, Mexico, Costa Rica and Panama, as well as a company that distributes to international customers
- SYGMA (11.2% of sales) - customized distribution subsidiary
- Other (1.7% of sales) - primarily hotel supply operations and Sysco Ventures platform, which includes technology solutions

13. Materiality Issues

The Sustainability Accounting Standards Board (SASB) is an independent organization established to help investors assess firms according to sustainability standards most material to a company's industry. According to SASB, Sysco is categorized under Consumption II – Food Retailers and Distributors (CN0401), and issues of most relevance to this industry are shown in Figure 1. The following section discusses how Sysco addresses these and other ESG issues.

Figure 1: SASB Materiality Issues for Sysco

Food Retailers & Distributors	
Area	**Issue**
Environment	▪ GHG emissions ▪ Energy management ▪ Fuel management ▪ Waste & hazardous material management
Social Capital	▪ Customer welfare ▪ Data security & customer privacy ▪ Fair disclosure & labeling ▪ Fair marketing & advertising
Human Capital	▪ Labor relations ▪ Fair labor practices ▪ Compensation & benefits
Business Model & Innovation	▪ Product packaging ▪ Product quality & safety
Leadership & governance	▪ Materials sourcing ▪ Supply chain management

14. Corporate ESG Strategies

Sysco discusses a number of the material issues listed above, and how the company is working to address them, directly on the company website.

ix. Environment

Finding information on Sysco's efforts to reduce the company's environmental impact is pretty easy. Within a few clicks from the website homepage you can land on the Energy Management (EM) Program page, which provides background on the program (launched in 2006) and current metrics (cumulative energy savings of 42% since 2006, $200M saved in energy costs).[44]

From a GHG Emissions and Fuel Management standpoint, the company is also actively reporting measures its taking to reduce fuel usage in the transportation of its products (adding low-emission trucks to its fleet, better managing intermodal shipping activities, improving truck load fill rates, optimizing delivery routes, etc.).[45] The company is also actively partnering with its suppliers to reduce shared energy consumption. There is no mention of specific targets the company has for itself in these efforts, but Sysco does report improvement statistics throughout its reporting.

Waste & Hazardous Material Management is not mentioned on the company website or in any reports.

x. Social Capital

Sysco follows the food safety certification processes as laid out by the Global Food Safety Initiative, which according to the company website, is becoming a benchmark standard for the food industry to assure customers are receiving the best quality food products as possible. The company also employs a strict labeling process for Sysco products that meets or exceeds regulatory standards, but makes no mention of particular targets the company has around customer welfare and labeling.

The company does not disclose initiatives or programs that exist to address the material issues of Data Security & Customer Privacy, or Fair Marketing & Advertising.

xi. Human Capital

Sysco employs roughly 65,000 associates around the globe and encourages many of them to continue to develop their skills through Sysco's own Interactive University (SIU), which offers 3,500 courses for employee development. The company conducts surveys throughout the year to receive employee feedback and measure engagement. Additionally, the company recently announced diversity and inclusion initiatives over the next three years focused around learning & development, talent acquisition and ongoing partnerships.

Sysco does not disclose specific targets or metrics around these initiatives on the company website. The company also makes no mention of initiatives or programs that exist to address compensation and benefits material issues.

xii. Business Model & Innovation

As mentioned in the Social Capital section above, Sysco claims to put customer welfare as a priority and, thus, places a lot of time and money in product safety and quality. The company employs ~185 associates and contractors to focus on product safety and assuring that all Sysco products meet or exceed the standards set forth by the company and regulating bodies.[46] However, the company does not disclose any metrics or targets around product standards that they are striving towards.

Sysco does not mention any initiatives around product packaging (beyond the labeling standards) on the company website.

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[44] Sysco. (2016). 2016 CSR Report. Retrieved from http://sustainability.sysco.com/
[45] Moving Product Report: http://sustainability.sysco.com/operating-sustainably/moving-products.php
[46] Product Quality Assurance: http://sustainability.sysco.com/supplying-food-responsibly/safe-healthy-products/quality-assurance.php

xiii. Leadership & Governance

Sysco's sustainability report mentions various initiatives around supply chain management and the importance the company places on building a transparent supply chain for its customers. The report details out various standards the company holds each of its suppliers to, but does not disclose targets that company is striving towards. There is some mention of metrics that certain initiatives have helped improve, but they lack comparison data that would help us understand the scale of improvements.

Sysco does have some targets set for itself in materials sourcing including only using cage-free eggs by 2026, have 75% of its seafood volume coming from MSC certified fisheries by 2020, and source top 5 seafood species entirely from certified suppliers by 2020. There was no mention on how the company is performing against these initiatives to date.

15. Peer Comparison

	Sysco	US Foods	Performance Food Group	United Natural Foods
Bloomberg	33.5	9.9	11.2	23.1
Sustainalytics	50	NA	NA	NA

2017 Data	Revenue (Net) $M	Staff	GHG Release	Energy Use	Water use	Waste	Community Spending	Women in Mngt
Sysco	$55,371	51.9K	NA	NA	NA	NA	NA	23%
US Foods	$24,147	NA	NA	NA	NA	NA	NA	20%
Performance Food Group	$16,762	NA	NA	NA	NA	NA	NA	11%
Unite Natural Foods	$9,275	9.5K	NA	NA	NA	NA	$0.6M	10%

16. Conclusion

Overall, Sysco scores higher on ESG scored compared to its peers, but the company does not have a significant amount of detailed disclosure around the material issues, mitigation processes and reporting of metrics and targets of key initiatives. The sustainability reports the company produces seem to be more lip service to sustainability than of actual substance. Based on the little ESG data that is available for other peers in this industry Sysco does seem to disclose more ESG information than its competitors, which might be why Sysco's ESG score is higher. When compared to other public companies in various industries, Sysco and food distribution definitely lacks in disclosure of ESG initiatives (but the industry as a whole seems to have lower ESG scores across most rating agencies). Sysco's key business is the sourcing, transporting and distribution of food, which is an environmentally taxing business model. Further discussion with Sysco representatives may help reveal how thoroughly the company's stated values and mission penetrate throughout the organization.

Annex 3 – Karl Erdmann Company Analyses

I. The Clorox Company

II. eBay Inc.

III. Philip Morris International

THE CLOROX COMPANY

ESG Summary	RobecoSam	Sustainalytics	Vigeo	Asset4	Bloomberg
ESG	39	74.56	38	95.50	49.59
Environment	52	82.55	39	94.33	42.64
Social	40	64.94	28	91.93	43.86
Governance		78.75	53	95.81	71.43
Economic	33			94.48	

17. Company Overview

The Clorox Company (Clorox) is a U.S.-based manufacturer of leading consumer and professional products. In addition to its namesake bleach and cleaning products, Clorox brands include Pine-Sol ® cleaners, Liquid Plumr ®, Fresh Step ® cat litter, Glad ® bags and container products, Brita ® water filtration products and Burt's Bees ® personal care products. With 2017 net sales of $6.0 billion, Clorox products are sold in retail, grocery, warehouse clubs, pharmacies, and medical supply distributors. The company employs over 8,000 people across 25 countries and territories worldwide.[47]

18. Materiality Issues

The Sustainability Accounting Standards Board (SASB) is an independent organization established to help investors assess firms according to sustainability standards most material to a company's industry. According to SASB, Clorox is categorized under the Household and Personal Products Industry, and issues of most relevance to this industry are shown at right. The following section discusses how Clorox addresses these and other ESG issues.

SASB Materiality Issues for Clorox

Household and Personal Products Industry	
Area	**Issue**
Environment	▪ Water & wastewater management
Business model & innovation	▪ Packaging lifecycle management ▪ Product packaging
Social	▪ Product quality & safety
Leadership & governance	▪ Supply chain management

SASB recommends household and consumer good manufactures report the following two activity metrics:

	Metric	Clorox disclosure
1	Units of products sold, total weight of products sold	Not disclosed
2	Number of manufacturing facilities	35 (22 in North America, 13 outside NA)[48]

19. Corporate ESG Strategies

Corporate responsibility issues feature prominently in Clorox's 10-K filing, its 74-page Integrated Annual Report as well as the company's website. *"We're very mindful of our environmental and social impacts because the long-term well-being of our communities and planet is as much a priority for us as it is for our stakeholders."* Its 2017 Integrated Annual Report includes a Global Reporting Initiative (GRI) content index to highlight the company's transparency on various ESG activities and metrics. The company's

[47] The Clorox Company. (2018). 2017 10-K form. Retrieved from http://d18rn0p25nwr6d.cloudfront.net/CIK-0000021076/e6b822e2-c5b1-467e-8394-a3dcad09ad75.pdf
[48] Ibid.

"2020 Strategy" integrates business strategies with corporate responsibility strategies, with a focus on *"good growth – growth that is profitable, sustainable and achieved responsibly."*[49] Clorox defines these strategies as follows:

	Business Strategies	Corporate Responsibility	Relation to SASB
1	Engage our people as business owners	Promote diversity, opportunity and respectful treatment for all people who touch our business.	▪ N/A
2	Drive superior consumer value behind strong brand investment, innovation and technology transformation.	Make responsible products responsibly.	▪ Lifecycle impacts of products & services ▪ Product quality & safety
3	Accelerate portfolio momentum in and around the core.	Safeguard families with Be Healthy, Be Smart and Be Safe initiatives.	▪ Product quality & safety
4	Fund growth by reducing waste in our work, products and supply chain.	Shrink our environmental footprint while we grow.	▪ Water & wastewater management ▪ Supply chain management

Clorox's website includes a section devoted to Corporate Responsibility, which is organized according to three categories: environmental sustainability, social impact and stakeholder engagement. These pages provide ample evidence of Clorox's efforts to address a wide range of sustainability issues.

i. Disclosure area: Environment

Water management is an important discipline for companies in the Household and Personal Products industry. Water is a primary ingredient in many consumer products – according to Clorox, half of its products include water as a key ingredient[50] – and is also used in various manufacturing processes. Given global population growth and other factors such as climate change and drought, water is an increasingly scarce commodity. According to SASB, companies in this industry should carefully track water consumption and implement measures to increase efficiency.[51] Clorox's accounting for water management is shown in the following table.

Topic	Metric	Measure	Clorox Disclosure
Water management	1)Total water withdrawn and (2) total water consumed, percentage of each in regions with High or Extremely High Baseline Water Stress	Cubic meters, percentage	789 million gallons withdrawn, data is not disaggregated by region
	Discussion of water management risks and description of strategies and practices to mitigate those risks	Discussion & analysis	Minimal discussion of risks, but Clorox provides many details about efficiency strategies on its website.

In 2011 Clorox committed to reduce its water consumption by 20% on a per case basis by 2020 and surpassed this target in 2017 having achieved 21% reduction. Clorox reduced total water consumption by

[49] The Clorox Company. (2018). 2017 Integrated Annual Report. Retrieved from https://annualreport.thecloroxcompany.com/
[50] The Clorox Company. (2018). "Footprint Reduction: Conserving Water." Retrieved from https://www.thecloroxcompany.com/corporate-responsibility/environmental-sustainability/commitments-and-progress/operations/footprint-reduction-summary/water/
[51] Sustainability Accounting Standards Board. (2015). "Household and Personal Products Sustainability Accounting Standard."

14% over the same period.[52] Given that water scarcity is sensitive to context and geography, a more thorough report would disaggregate data by stress region.

While SASB limits environmental accounting standards to water management for the Household and Personal Product industry, Clorox recognizes other environmental areas as material to their business model. The following table summarizes Clorox's Footprint Reduction Strategy and progress as of 2017.[53] Each of these metrics are externally verified.

Goal 1:	Reduce energy consumption per case sold over baseline year (2011) by 20%
Current Status:	15% reduction against a 2020
Discussion:	The company appears on track to meeting this goal and discloses challenges and opportunities to reaching this goal. Clorox also reports a 7% absolute energy reduction over the same period.

Goal 2:	Reduce greenhouse gas emissions per case sold over baseline year (2011) by 20%
Current Status:	18% reduction
Discussion:	Clorox has nearly achieved its goal through the use of renewable energy sources, production improvements, and energy efficiency initiatives. Total GHG emissions have decreased by 10 from 2011 to 2016.

Goal 3:	Reduce solid waste to landfill by 20% per case sold over baseline year (2011)
Current Status:	41%
Discussion:	Clorox achieved its 20% reduction goal only two years into its strategy, suggesting the goal was perhaps too low. In years since the company's waste reduction efforts have slowed and while Clorox states it has identified more opportunities to reduce waste, it offers few specifics. Total waste sent to landfill according to Bloomberg declined by 31% over the same period.

Goal 4:	Reduce water consumption per case sold over baseline year (2011) by 20%
Current Status:	21% reduction
Discussion:	Clorox has exceeded its 2020 goal having made steady progress since 2012. Clorox reduced its total water consumption by 14% over the same period.

Goal 5:	Sustainability improvements to 50% of product portfolio since January 2012
Current Status:	34%
Discussion:	Clorox has identified specific criteria as to what defines a "sustainability improvement": 1) a 5 percent or more reduction in product or packaging materials on a per-consumer-use basis; 2) an environmentally beneficial change to 10 percent or more of packaging or active ingredients on a per-consumer-use basis; 3) a 10 percent reduction in required usage of water or energy by consumer; or 4) an environmentally beneficial sourcing change to 20 percent or more of active ingredients or packaging on a per-consumer-use basis.

Clorox deserves credit for setting, attaining, and in some cases exceeding footprint reduction goals and also achieving absolute reductions in energy use, GHG emissions, waste and water use.

ii. Disclosure area: Business model & innovation

Topic	Metric	Measure	Clorox Disclosure
Packaging lifecycle management	(1)Total weight of packaging, (2) percentage made from recycled or renewable materials, and (3) percentage that is recyclable or compostable	Metric tons, percentage	(1) Not disclosed (2) 90% (U.S. only) (3) 85% recyclable
	Description of strategies to reduce the environmental impact of packaging throughout its lifecycle	Discussion & analysis	Efforts to reduce packaging are detailed on website and in Integrated Report.

[52] The Clorox Company. (2018). "Footprint Reduction: Conserving Water." Retrieved from https://www.thecloroxcompany.com/corporate-responsibility/environmental-sustainability/commitments-and-progress/operations/footprint-reduction-summary/water/
[53] The Clorox Company. (2018). "Footprint Reduction Summary." Retrieved from https://www.thecloroxcompany.com/corporate-responsibility/environmental-sustainability/commitments-and-progress/operations/footprint-reduction-summary/

Clorox addresses SASB material issues associated with packaging primarily by highlighting initiatives undertaken by specific brands, or geographic markets, rather than a whole-of company approaches. Clorox's metrics related to products and packages are generally reported as percentages rather than absolute units.[54] A more rigorous approach would report aggregate packaging weight over time.

iii. Disclosure area: Social

Topic	Metric	Measure	Clorox Disclosure
Product environmental health, safety & performance	Revenue from products that contain REACH substances of very high concern (SVHC)	U.S. Dollars	Not disclosed
	Revenue from products that contain substances on the California DTSC Candidate Chemicals List	U.S. Dollars	Not disclosed
	Discussion of process to identify and manage emerging materials and chemicals of concern	Discussion & analysis	Not discussed
	Revenue from products designed with green chemistry principles	U.S. Dollars	34% of product portfolio include sustainability improvements; not reported as revenue[55]

According to SASB: "The Household & Personal Products industry is facing growing consumer and regulatory pressure over the use of chemicals of concern, which have been linked to negative environmental externalities and impacts on human health. Some of these chemicals include persistent, bioaccumulative, and toxic (PBT) substances and carcinogenic, mutagen, or teratogenic chemicals, all of which are under increased threat of legislation."[56]

For a manufacturer of household products and chemicals that are regularly handled by millions of consumers, Clorox does not disclose any information related to the potential environmental, health and safety implications of its products. Such an omission might warrant suspicion.

Beyond material issues highlighted by SASB, Clorox and The Clorox Foundation engaged in a number of social responsibility activities in 2017 such as:

- Donated 10 truckloads of personal care and cleaning products to communities impacted by 2017 hurricane season in the U.S. and the Caribbean.
- Provided $23 million in grant funding and $44 million in product donations to support youth education, health and disaster relief efforts from 2013-2017. Figures for 2017 alone were not noticeably disclosed.
- From 2012 to 2016, employees volunteered a total of 543,383 hours valued at $11 million. Figures for 2017 were not disclosed.

The company leverages its well-known brands with relevant social responsibility efforts, such as:

- Brita (water filters) supports activities in Kenya to provide communities with safe drinking water.
- A Brita initiative also teamed with basketball star Stephen Curry to "filter out the bad" and tackle online bullying.

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[54] The Clorox Company. (2018). "Products and Packaging." Retrieved from https://www.thecloroxcompany.com/corporate-responsibility/environmental-sustainability/commitments-and-progress/products-packaging/
[55] The Clorox Company. (2018). 2017 Integrated Annual Report. Retrieved from https://annualreport.thecloroxcompany.com/
[56] Sustainability Accounting Standards Board. (2015). "Household and Personal Products Sustainability Accounting Standard."

- Burt's Bees "Bring Back" the Bees campaign addresses the plight of honeybees in the U.S.
- A Fresh Step (cat litter) campaign promotes adoption of cats from animal shelters.

Contrary to Clorox's environmental goals, the company is less specific about what it hopes to achieve through its social responsibility efforts other than promoting its products. As an example:

> *"The Burt's Bees [Clorox subsidiary] Bring Back the Bees campaign returned in 2017 to double its impact and plant 2 billion wildflowers."*[57]

Planting 2 billion wildflowers, while well-intentioned, would correctly be termed an output; impact would be the change resulting from these wildflowers, which is not measured or mentioned.

iv. Disclosure area: Governance

Topic	Metric	Measure	Clorox Disclosure
Environmental & social impacts of palm oil supply chain	Amount of palm oil sourced, percentage certified through (1)Roundtable on Sustainable Palm Oil (RSPO) Book & Claim and Mass Balance systems and (2) RSPO Identity Preserved and Segregated systems	Metric tons, percentage	Clorox's Integrated Report makes ambiguous statement about palm oil supply chain. Its website discusses tracking efforts, but no findings.

According to SASB: "Palm oil harvesting in specific regions of the world can contribute to deforestation, GHG emissions, and other environmental and social problems... Companies face pressure to track and responsibly source palm oil. Additionally, they face pressure to ensure minimum standards for working conditions in the supply chain, as the production of palm oil is often associated with fair labor issues."[58]

Palm oil is an important ingredient in many of Clorox's products, though the company points out its total annual footprint accounts for less than .01 percent of global palm oil production. Clorox's appears to have initiated efforts in earnest since 2016 to improve visibility into its palm oil supply chain and acknowledges challenges to achieving traceability targets to date. Clorox had hoped to attain traceability on 100% of 12 key suppliers by September 2017, but by the end of the year had only reached 80%. As a result of this mapping process Clorox has partnered with non-governmental organizations and other stakeholders to address environmental and social support programs among palm-oil producing communities in Indonesia. The specific scope and achievements of these activities are not detailed, however.[59]

Other company highlights related to governance issues include the following:

- The company spent $140 million with diverse suppliers during the fiscal year, up from $20 million in 2008. Diverse suppliers include minority-, women-, service-disabled- and veteran-owned business enterprises, as well as gay, lesbian, bisexual and transgender business owners in the U.S. and Puerto Rico. This indicator is relevant to SASB's material issue around supply chain management as a governance area.
- Clorox maintained a world-class safety incident rate (below 1.0%) of 0.60.
- Women hold 36% of positions on the company's Executive Committee, compared to 20% four years earlier.
- 88% of employees feel engaged or highly engaged, a right higher than consumer goods companies (80% on average) and high performing companies (85% on average).

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[57] The Clorox Company. (2018). 2017 Integrated Annual Report. Retrieved from https://annualreport.thecloroxcompany.com/
[58] Ibid.
[59] The Clorox Company. (2018). "A Progress Update on Implementation of Our Palm Oil Responsible Sourcing Commitment, March 2018." Retrieved from https://www.thecloroxcompany.com/wp-content/uploads/2018/03/2018-Progress-Update-on-Palm-Oil-Responsible-Sourcing-Commitment.pdf

20. Peer Comparison

The company comparisons below are drawn from Bloomberg Equity Analysis and ESG data.

ESG Scores	Clorox	Church&D	Proctor&G	Colgate	Avon	Revlon	KMB
Bloomberg	49.6	36.8	44.2	44.6	32.6	12	63.6
Sustainalytics	59.1	31.8	27.3	63.6	44.4	N/A	86.4

Clorox's ESG rankings are somewhat higher than most peers, though Kimberly-Clark Corporation's (KMB) ratings demonstrate the possibility of performing better. The following is a closer comparison between Clorox and KMB, a consumer goods manufacturer with well-known brands (Huggies, Kleenex, Kotex, etc.) and a similar emphasis on corporate responsibility.

2016 Data	N. Income ($b)	Total Staff	GHG emission	Energy Use	Water use (m3)*	Waste (tons)	Social Spend ($m)	Female managers
Clorox	5,973	8,100	303	710	3.0m	6,281[60]	9.4	41%
KMB	18,202	42,000	4,600	16,522	91.6m	1.23m[61]	28.2	33%
CLX/ KMB	33%	19%	7%	4%	3%	.5%	33%	124%

*Clorox reported 789 million gallons used, which converts to 2.9m cubic meters. KMB reported 91.6m cubic meters of water used in FY16.

Clorox's environmental footprint is dwarfed by KMB even when considering their relative size (using net income and number of employees as proxies for size). This is counter-intuitive considering KMB's higher ESG scores. Further research may help reveal what other factors award KMB's advantage.

21. Conclusion

Clorox appears to take sustainability seriously, but it could do more to address material issues fully. The company has made solid progress on reducing its environmental footprint, and it has made strong commitments to responsible sourcing in its supply chain. A more conscientious firm would squarely address potential environmental and health consequences of its products, including efforts to voluntarily inform consumers of these consequences. Clorox's community support initiatives often serve as promotional campaigns for the company's products without evidence-based social impact. Further discussion with Clorox representatives may help reveal how thoroughly the company's sustainability posture penetrates throughout the organization.

[60] The Clorox Company. (2018). "Footprint Reduction: Waste." Retrieved from https://www.thecloroxcompany.com/corporate-responsibility/environmental-sustainability/commitments-and-progress/operations/footprint-reduction-summary/waste/
[61] Kimberly-Clark Corporation. (2018). "Kimberly-Clark 2016 Sustainability Report." Retrieved from https://www.sustainability2022.com/en/five-priorities/waste-and-recycling

ESG Summary	RobecoSam	Sustainalytics	Vigeo	Asset4	Bloomberg
ESG	32	63.28	33	89.35	36.36
Environment	40	69.77	25	67.88	30.23
Social	15	57.68	27	79.89	35.09
Governance		65.58	48	90.23	51.79
Economic	38			90.90	

22. Company Overview

Founded in 1995 and reincorporated in 1998, eBay Inc. (eBay) is a U.S.-based global commerce company that connects buyers and sellers through its online platforms. In contrast to traditional online retailers, eBay's platform connects individual sellers and their products and services with online shoppers. eBay earns revenues from fees generated through closed sales on its marketplace platform and from advertising on its Classifieds platform. With over 170 million active buyers and one billion live listings (or available products for sale), eBay generated a total of $88 billion in total transactions, resulting in $9.567 billion in net revenues for eBay in fiscal year 2017. eBay employs over 14,000 people, approximately half of whom are located in the U.S.[62]

23. Materiality Issues

The Sustainability Accounting Standards Board (SASB) is an independent organization established to help investors assess firms according to sustainability standards most material to a company's industry. According to SASB, eBay is categorized under the Consumption Sector and E-commerce Sub-sector. Material issues relevant to eBay are shown at right. These issues apply to firms that provide online marketplaces for firms or individuals to sell goods and services, as well as other "pure play" retailers or wholesalers whose commerce is conducted exclusively over the web.[63]

SASB Materiality Issues for eBay

E-commerce Industry	
Area	**Issue**
Environment	▪ Energy management ▪ Water & wastewater management
Social capital	▪ Data security & customer privacy
Human capital	▪ Diversity & inclusion ▪ Recruitment, development & retention
Business model & innovation	▪ Lifecycle impacts of products & services ▪ Product packaging

SASB recommends at a minimum that e-commerce companies report the following metrics:

	Metric	eBay disclosure
1	Registrant-defined measure of customer activity	170 million active buyers
2	Data processing capacity, percentage outsourced	Not disclosed
3	Number of shipments	Not disclosed

24. Corporate ESG Strategies

eBay describes sustainability issues in its 2017 Progress Report on its initiative called eBay Impact. Through eBay Impact, the company's goals are to: 1) include sellers from socio-disadvantaged

[62] eBay. (2018). Annual Report 2017. Retrieved from https://investors.ebayinc.com/annuals.cfm
[63] Sustainability Accounting Standards Board. (2015). E-commerce Sustainability Accounting Standard.

communities; 2) raise funds for charity; 3) lend capital to entrepreneurs in developing countries; 4) support circular commerce by extending product lifecycles, and; 5) promoting responsible business. The report also includes the company's own materiality assessment, which highlighted the following themes as most relevant to eBay stakeholders:[64]

- Economic opportunity
- Diversity & inclusion
- Sustainable commerce
- Community impact
- Customer security & privacy
- Governance & ethics

i. Disclosure area: Environment

E-commerce companies rely heavily on energy-intensive data centers, which require continuous power and cooling to be effective. Using water for cooling purposes instead of traditional air conditioners can improve energy efficiency but can strain local water sources, especially in stressed regions. Energy and water use are of greater public concern and expose e-commerce companies to reputational risk.[65] Below is a summary of eBay's discloser on the energy and water footprint of its hardware equipment.

Topic	Metric	Measure	eBay Disclosure
Energy and water footprint of hardware equipment	Total energy consumed, percentage grid electricity, percentage renewable energy	Gigajoules, percentage	450,816 mWh, 48%
	(1) Total water withdrawn and (2) total water consumed, percentage of each in regions with High or Extremely High Baseline Water Stress	Cubic meters, percentage	152,505 kGal; withdrawn and consumed not disaggregated, nor by stress region
	Description of the integration of environmental considerations into strategic planning for data center needs	Discussion & analysis	Minimum discussion and no specific strategies mentioned

eBay's 2017 Impact report shows increases in energy use, greenhouse gas emissions and water consumption from the year prior as a result of increased data processing. Data centers consumed 76% of eBay's total electricity consumption and 67% of the company's greenhouse gas emissions. eBay has "focused" on moving to 100% renewable energy at "eBay data centers and offices," though has not committed to a timeline. It is noteworthy that eBay owns 1.1 million square feet of office and data processing space and leases an additional 4.8 million square feet. The company should clarify whether the 100% renewable energy commitment also applies to leased space, considering how much more office and data center space eBay leases verses owns.

eBay does not commit itself to firm environmental targets, such as reducing greenhouse gas emissions, increasing water efficiency, or making a firm and time-bound commitment to renewable energy. eBay offers only vague descriptions of how it integrates environmental considerations, such as:

> *Our Workplace Resources teams work across our global operations to save energy, reduce waste and implement green building principles and practices.*

The statement does not continue to report any specific and measured outcomes of these activities, such as actual energy saved or total waste reduced.

Over the years, eBay's marketplace has expanded to include a huge variety of both new and second-hand products. But the company's beginnings are rooted in circular commerce. Users can purchase used goods and apparel and therefore extend product lifecycles. This helps avoid production, distribution and disposal of new products, and is a potentially powerful sustainability tool if adopted widely.

ii. Disclosure area: Social capital

[64] eBay. (2018). eBay Impact 2017 Progress Update. Retrieved from https://static.ebayinc.com/assets/Uploads/Documents/eBay-Impact-2017-Progress-Update.pdf
[65] Sustainability Accounting Standards Board. (2015). E-commerce Sustainability Accounting Standard.

Data security is an increasingly important issue for e-commerce companies as cyber-attacks grow in frequency and severity and as the public becomes more aware of the threat. E-commerce firms must provide customers with secure platforms to conduct commercial transactions as a means of gaining competitive advantage and customer loyalty.[66] The following summarizes eBay's disclosers relative to data security, fraud protection and privacy.

Topic	Metric	Measure	eBay Disclosure
Data security & fraud protection	Discussion of management approach to identifying and addressing data security risks	Discussion & analysis	Discussed somewhat on eBay's website
	Number of data security breaches, percentage involving customers' personally identifiable information (PII), number of customers affected	Number, percentage	Not disclosed
Data privacy	Percentage of users whose customer information is collected for secondary purposes, percentage who have opted in	Percentage	Not disclosed
	Discussion of policies and practices relating to behavioral advertising and customer privacy	Discussion & analysis	Not disclosed

While eBay provides data security and privacy guidance, tools and other resources for both buyers and sellers on its site, and provides some general statements on how it protects data and privacy, three of the four SASB recommended metrics were not noticeably disclosed on eBay's website or in its reporting. eBay's 2017 Annual Report acknowledges a security breach in 2014 resulting in stolen user data including passwords. The attack ultimately collected data on 145 million users and at the time was one of the largest security lapses to date.[67] eBay does not noticeably discuss steps taken since the attack to improve the security of its site. This disclosure area may expose eBay to significant reputation risk.

Furthermore, eBay does not outline specific goals or targets it is working towards to improve data security, fraud protection and privacy.

iii. Disclosure area: Human capital

The e-commerce industry is employing more and more people each year. The ability to recruit qualified employees is becoming increasingly difficult and is leading to intense competition in the labor market. The technology sector is typically known to employ lower ratios of women and minorities while simultaneously recruiting foreign talent to fill technical positions.[68] Recent high profile cases from technology companies and the wider #metoo movement has raised public scrutiny of human resource practices and exposed the industry to increased scrutiny and reputational risk.

Topic	Metric	Measure	eBay Disclosure
Employee recruitment, inclusion & performance	Employee engagement as a percentage	Percentage	Not disclosed
	(1) Voluntary and (2) involuntary employee turnover rate	Rate	Not disclosed
	Percentage of gender and racial/ethnic group representation for (1) executives, (2) technical staff, and (3) all others	Percentage	Fully disclosed. See subsequent table.
	Percentage of technical employees who are H-1B visa holders	Percentage	Not disclosed
	Percentage of successful H-1B visa applications	Percentage	Not disclosed

[66] Ibid.
[67] Finkle, Jim & Seetharaman, Deepa. (2014). Cyber Thieves Took Data On 145 Million eBay Customers By Hacking 3 Corporate Employees. Business Insider. Retrieved from http://www.businessinsider.com/cyber-thieves-took-data-on-145-million-ebay-customers-by-hacking-3-corporate-employees-2014-5
[68] Sustainability Accounting Standards Board. (2015). E-commerce Sustainability Accounting Standard.

eBay devotes a series of webpages and reports on employee diversification and inclusion. eBay published its first Diversity and Inclusion Report in 2016 and provided a follow up report in 2017 to highlight the company's various diversity and inclusion initiatives. Data on employee demographic data is clearly available and easily accessible. However, four of the other five SASB recommended metrics were not readily disclosed. The table below summarizes some of eBay's available demographic data.[69]

Demographic	Total	Leaders	Tech	Non Tech
Women	40%	33%	23%	50%
Non-white	50%	37%	71%	32%

Here again, eBay would benefit from setting measurable goals and targets around human capital.

iv. Disclosure area: Business model and innovation

E-commerce companies rely heavily on package and parcel services to deliver goods directly to customers. As commerce increases, so does the environmental footprint associated with increased volume of shipments and resulting fuel consumption, packaging use and waste. E-commerce companies can reduce costs through energy, fuel, packaging, and other efficiencies.[70]

Topic	Metric	Measure	eBay Disclosure
Logistics & packaging efficiency	Total greenhouse gas (GHG) footprint of product shipments	Metric tons	Not disclosed
	Description of strategies to reduce the environmental impact of product delivery	Discussion & analysis	Not disclosed

Unlike its competitor, Amazon, eBay's business model does not rely on its own logistical infrastructure. Rather, sellers and buyers use their own means to distribute goods, such as their homes to store them, and parcel services to deliver them. Still, eBay's platform generates a significant logistical activity through the exchange and shipment of goods even if these freight and distribution services are not provided by eBay. Therefore, eBay does not account for the full environmental footprint of package delivery directly associated with its business model. A more mindful approach would employ strategies to reduce this total environmental footprint by setting measureable and time-bound efficiency targets.

v. Other discloser areas

On top of issue areas considered material by SASB, eBay is involved in a number of other ESG initiatives worth mentioning. These include:

- Retail Revival: eBay is partnering with local retailers in Ohio to help connect them with wider customer markets through technical support in online retailing. eBay hopes to scale the pilot initiative further to support local economic development.
- The eBay Foundation supports the micro-lending non-profit, Kiva, with loans supporting small enterprise borrowers across the world.
- Through its online marketplace, eBay helps facilitate charitable donations to a variety of causes. In 2017 the platform raised $84 million for charity.
- The company's platform helps promote a circular economy through the resale of goods. As of 2017 the sale of pre-owned electronics and apparel generated $1.3 billion and avoided 1.2 million tons of carbon emissions.
- eBay supports initiatives to end wildlife trafficking, expand corporate use of renewable energy, and adopt meaningful climate and energy policies.

[69] eBay. (2018). 2017 Diversity and Inclusion Report. Retrieved from https://static.ebayinc.com/assets/Uploads/Documents/eBay2017-DI-Full-Report.pdf
[70] Sustainability Accounting Standards Board. (2015). E-commerce Sustainability Accounting Standard.

. Despite its claims, eBay does not provide clear evidence of the impact of any of these initiatives. For example:

> *We've disbursed $397,000 in loans and supported over 17,000 borrowers on Kiva— 14,000 of which are female entrepreneurs. In total, these efforts have impacted the lives of about 85,000 people globally.*

There are no readily available and independent reports to verify eBay's reach of 17,000 borrowers, nor a description of the measurable impact these loans, valued at $23 per borrower, had on the 85,000 total lives ($4.67 per life impacted).

While well-intentioned, the activities above lack focus, consistency and direction. If eBay organized its altruism around a common goal or theme, the company might have real success in advancing its causes.

25. Peer Comparison

The company comparisons below are drawn from Bloomberg Equity Analysis and ESG data. eBay ESG scores are higher than all peers listed, though the industry as a whole does not perform well.

ESG Scores	eBay	MercadoLibre	Amazon	Alibaba	Vipshop	JD.com
Bloomberg	36.4	29.8	25.2	7.9	10.3	7.4
Sustainalytics	83.7	N/A	32.5	N/A	N/A	N/A

A comparison with eBay's most famous competitor, Amazon, is provided below. Amazon notably does not provide complete data regarding these metrics, so eBay can be commended at least for disclosure.

2016 Data	Revenue (Net)	Staff	GHG Release	Energy Use	Water use	Waste	Social Spend	Women in Mngt
eBay	$74,953m	14,000	99	413	522	TBD	TBD	32%
Amazon	$177,866m	341,400	ND	ND	ND	ND	ND	25%

26. Conclusion

For the most part, eBay does not adequately report material issues according to SASB standards given the absence of data and discussion across each of the disclosure areas outlined above. In addition to reporting this data, eBay should set meaningful targets across each disclosure area and ensure these take into account the full scope of eBay's business model, such as parcel delivery and leased facilities.

eBay is involved in several disparate ESG responsibility initiatives, which might benefit from increased alignment and harmonization so that these activities complement one another for greater measurable impact. It has the beginnings of a convincing corporate responsibility theme in the making, and one that has roots in the company's origins: its focus on circular commerce. Coupling this with energy efficiency, responsible sourcing, local investment and other reinforcing strategies (such as behavioral change approaches to encourage use of circular commerce) could help put eBay on the path to sustainability.

PHILIP MORRIS INTERNATIONAL

ESG Summary	RobecoSam	Sustainalytics	Vigeo	Asset4	Bloomberg
ESG	41	62.68	36	87.63	50.00
Environment	51	68.7	37	81.25	48.06
Social	33	57.31	31	83.65	43.86
Governance		62.84	46	93.69	60.71
Economic	43			74.97	

27. Company Overview

Philip Morris International (PMI) is a U.S.-based cigarette and tobacco manufacturing company with products sold in over 180 countries outside the United States.[71] Its popular line of cigarette brands include *Marlboro* and *Parliament* as well as a number of other international and local brands. PMI has also developed a line of reduced-risk products as the company seeks to transform itself from a cigarette producer to a smoke-free technology leader. The company employs over 81,000 people in more than 30 countries and in 2017 generated net revenues of $28.7 billion.[72] That year, PMI produced over 800 billion cigarettes for approximately 150 million consumers, and sold 7.7 billion smoke-free products to over 3 million consumers. Each day 8,000 smokers switch to PMI's flagship smoke-free product, IQOS, according to the company.[73]

28. Materiality Issues

The Sustainability Accounting Standards Board (SASB) is an independent organization established to help investors assess firms according to sustainability standards most material to a company's industry. According to SASB, PMI is categorized under the Consumption Sector and Tobacco Sub-sector. Material issues relevant to PMI are shown at right.

SASB Materiality Issues for PMI

Tobacco Industry	
Area	**Issue**
Social capital	▪ Public health ▪ Marketing practices

At a minimum, SASB recommends tobacco product manufacturers report the following activity metrics:

	Metric	PMI disclosure
1	Cigarette sales volume	812,946 million cigarettes
2	Smokeless tobacco (e.g., chewing) sales volume	Not sold

29. Corporate ESG Strategies

PMI joined the United Nations Global Compact in 2015 and committed to incorporate the compact's Ten Principles into the company's culture and operations. The following year, PMI announced its vision of a smoke free future – a somewhat audacious statement from a 150 year old cigarette manufacturer. PMI's

[71] Altria Group, formerly Philip Morris Companies Inc. is a separately traded corporation and sells tobacco and related products in the U.S. market.
[72] Exclusive of excise taxes.
[73] Philip Morris International (2018). 2017 10-k form. Retrieved from https://www.pmi.com/investor-relations/reports-filings

long-term goal is to replace cigarettes with less harmful products. Towards this end, by 2025 PMI expects that 30% of smokers consuming the company's cigarettes will switch to smoke-free products.[74]

Two years on, the company appears to be fully engaged in this strategy. Its 2017 Annual Report is titled "Change." Its cover page features a model holding a smoke-free device, and leads into an in-depth look at IQOS sales, conversion rates and market penetration (the 2016 report placed equal emphasis). Since 2008, PMI has hired 400 scientists, opened two research facilities and spent $3 billion on research and development on smoke free devices. In 2017 alone, the company spent $453 million on research, 74% of which (or $340 million) supported reduced risk products.[75]

A look at PMI's main competitor, British American Tobacco (BAT), owner of RJ Reynolds and other international brands, reveals likeminded thinking. Titled, "Transforming Tobacco," BAT's strategy places similar emphasis on harm reduction and transitioning to reduced risk products, plus linkages to several U.N. Sustainable Development Goals.[76]

vi. Disclosure area: Customer Welfare

Given the scientifically proven connections between smoking and health problems, including lung disease, cancer and other cardiovascular diseases, public health is an area of significant materiality for tobacco companies. Lawsuits in recent decades stemming from health concerns have resulted in billions of dollars of settlements and continue to pose significant risk to the industry, as does the declining number of smokers as awareness of tobacco's harmful effects increases. To mitigate this risk, tobacco companies have introduced "reduced harm" or "reduced risk" products, which may be less harmful than cigarettes. SASB therefore encourages tobacco companies to report their efforts to market and assess risks of reduced harm products, and PMI's disclosure is summarized below.

Topic	Metric	Measure	PMI Disclosure
Public health	Revenue from (1) smokeless tobacco products, (2) nontobacco nicotine-delivery products, and (3) other "tobacco harm-reduction" products	U.S. Dollars	(1) Not sold (2) Not sold (3) 2,875*
	Description of the process to assess risks and opportunities associated with "tobacco harm-reduction" products	Discussion & analysis	Extensive discussion on pages 32-35 of Annual Report.

*10% of 28,748 (78,098 net revenues minus 49,350 excise taxes. Source: Sustainability Report (page 26) & Annual Report.

PMI has invested $3 billion in research and development since 2008, approximately 70% of which was focused on smoke-free products, including whether or not smoke-free products cause less harm than smoking cigarettes. Furthermore, PMI has hired 400 scientists, established two research facilities, and pledged further investments towards this effort. Given this investment and the company's bet on a smoke-free future, one might conclude that any effort by PMI to research the risks of smoke-free products would be fundamentally biased.[77]

[74] Philip Morris International (2018). Sustainability Report 2017. Retrieved from https://www.pmi.com/resources/docs/default-source/pmi-sustainability/pmi-sustainability-report-2017.pdf?sfvrsn=bc365b4_12
[75] Philip Morris International (2018). 2017 10-k form. Retrieved from https://www.pmi.com/investor-relations/reports-filings
[76] British American Tobacco (2018). "Transforming Tobacco: Sustainability Report 2017." Retrieved from http://www.bat.com/group/sites/UK__9D9KCY.nsf/vwPagesWebLive/DOAWWEKR/$file/Sustainability_Report_2017.pdf
[77] Philip Morris International (2018). Sustainability Report 2017. Retrieved from https://www.pmi.com/resources/docs/default-source/pmi-sustainability/pmi-sustainability-report-2017.pdf?sfvrsn=bc365b4_12

Working with nonprofit consultants from Business for Social Responsibility (BSR), PMI developed a set of its own metrics to track and verify the process of transforming from a cigarette company to a smoke-free technology company. These metrics include the following:

	Metric	2015	2016	2017	Goal
1	R&D expenditure (smoke free/ total)	70%	72%	74%	N/A
2	Commercial expenditure (smoke-free/ total)	8%	15%	>30%	N/A
3	Net revenues (smoke-free/ total)	.2%	2.7%	>10%	N/A
4	Smoke-free verses total shipment volume	0.09%	0.09%	3.6%	31.25%

The figures above show both a substantial emphasis on smoke-free products in terms of R&D and commercialization expenditure relative to combustible products, as well as an increasing role of R&D products in PMI's portfolio. One might be cautious about the objectivity of this research, particularly as relates to customer welfare and health risks.

vii. Disclosure area: Marketing practices

The World Health Organization's Framework Convention on Tobacco Control (FCTC) has led many countries to enact regulations on the marketing of tobacco products. This includes labeling products with health warnings and prohibiting advertising towards young people. The industry experiences near-constant litigation related to marketing practices and regularly incurs substantial penalties. SASB accounting standards encourage tobacco companies to disclose pending lawsuits and to discuss their marketing practices' alignment to FCTC as means to mitigate exposure to legal risk.[78] PMI's discloser is summarized here.

Topic	Metric	Measure	PMI Disclosure
Marketing practices	Amount of legal and regulatory fines, settlements, and enforcement actions associated with marketing, labeling, and advertising	U.S. Dollars	2 pending litigations, one in Italy and 1 in Israel. USD amount not disclosed.
	Description of alignment of tobacco advertising, promotion, and sponsorship (TAPS) activities with Article 13 of the WHO FCTC	Discussion & analysis	Sustainability Report includes an annex with PMI's Marketing Code. There is no alignment to WHO FCTC.
	Description of alignment of tobacco labeling and packaging practices with Article 11 of the WHO FCTC	Discussion & analysis	Marketing Code lists vague labeling standards. No alignment to WHO FCTC.

PMI accounts for legal and regulatory fines as a liability on its balance sheet. For fiscal year 2017, this amount was $0 based on management's estimate of potential outcomes of pending legislation.

PMI's marketing principles are included as an annex to their 2017 sustainability report. These include:

- *We market and sell our combustible tobacco products to adult smokers only.*
- *We warn consumers about the health effects of our combustible tobacco products.*
- *Our marketing must be honest, accurate and transparent.*

PMI's labeling standards are briefly mentioned in an annex to their 2017 sustainability report. These are:

- *All Advertising and Consumer Packaging must have health warnings, even if the law does not require these warnings. If the law does not require or specify health warning content and appearance, we must ensure that health warnings are clear and conspicuous.*
- *If there is a legal requirement to print yields, we may voluntarily print tar, nicotine and/or CO yield numbers on Advertising and on Consumer Packaging in addition to yield labeling required by law, as long as we also print the following statement in a clearly legible typeface and size: "The*

[78] Sustainability Accounting Standards Board. (2015). "Tobacco Sustainability Accounting Standard."

> *amount of tar, nicotine and/or CO you inhale will vary depending on how you smoke the cigarette."*

PMI's marketing and labeling standards do not mention alignment with articles of the FCTC, which calls for comprehensive bans on all tobacco advertising and guidelines for labeling, among other measures. [79] In fact, PMI's stance towards the FCTC is largely defensive, given the tobacco industry's increased exposure to financial and legal risk as a result of FCTC-guided regulations.

> *We have opposed certain measures [of the FCTC] and continue to engage in a dialogue with regulators with respect to those measures that we do not believe would protect public health and, if implemented, could disrupt competition, severely limit our ability to market and sell our products to adult smokers, or increase illicit trade.*[80]

In fact, the tobacco industry, PMI foremost, has employed a range of tactics to subvert tobacco control.[81] A Reuters investigation in 2017 uncovered "what may be one of the broadest corporate lobbying efforts in existence" undertaken by PMI to weaken regulations under the FCTC. The four-part series documented how PMI operatives covertly influenced FCTC treaty delegates at a summit in 2016. The article also describes PMI's years-long effort to dilute national FCTC delegations of health experts and replace them with delegates from finance, trade and agricultural ministries whose sectors favorably benefit from tobacco taxes and revenues. PMI's strategy, as revealed by internal documents, was to frame tobacco control less as a public health concern and more as an economic issue. The results have provided tobacco companies with enough legal cover to continue their business largely as usual. [82]

Reuters' investigation goes on to report PMI's questionable marketing practices in India and irregular clinical experiments related to its reduced harm products.

viii. Other disclosure areas

PMI's 2017 Sustainability report highlights several other ESG-related areas, including:

- *Commitment to human rights.* Key activities in this area include: 1) establishing a cross-departmental Human Rights Core Team to oversee PMI's human rights programs; 2) rolling out an online training course for all 80,000 employees on human rights; 3) engaging an external party to review PMI's human rights risk-mapping and gap analysis. No specific metrics or targets are disclosed.
- *Governance.* Specific targets around promotion of women: 32.8% of management positions are filled by women as of 2017 against a target of 40% by 2022.
- *Safety.* In 2016, PMI's Lost Time Injury (LTI) rate was .12 (injuries per 200,000 hours worked) company-wide and 35 of its 48 production facilities had zero LTI for more than a year.
- *Supply chain management.* PMI looks broadly across its supply chain to improve agricultural practices, support smallholder farmers, and monitor human rights issues.
- *Environment.* The company reports on various environmental initiatives and tracks specific metrics related to carbon dioxide emissions, water usage, waste production and other data.

While SASB does not classify the above as material, for one of the world's largest consumer goods manufacturers, improvements in these areas would seem to have meaningful and far-reaching impact.

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[79] World Health Organization. (2003). WHO Framework Convention on Tobacco Control. Retrieved from http://apps.who.int/iris/bitstream/handle/10665/42811/9241591013.pdf;jsessionid=B74575B3A1421EE6BE7EB0E7A9134A67?sequence=1

[80] Philip Morris International. (2018). 2017 Annual Report. Retrieved from https://www.pmi.com/investor-relations/reports-filings

[81] Nagler, R. H., & Viswanath, K. (2013). Implementation and Research Priorities for FCTC Articles 13 and 16: Tobacco Advertising, Promotion, and Sponsorship and Sales to and by Minors. Nicotine & Tobacco Research. Retrieved from http://doi.org/10.1093/ntr/nts331

[82] Kalra, A., Bansal, P., Wilson, D. & Lasseter, T. (2017). Inside Philip Morris' Campaign to Subvert the Global Anti-smoking Treaty. Reuters. Retrieved from https://www.reuters.com/investigates/special-report/pmi-who-fctc/

30. Peer Comparison

The company comparisons below are drawn from Bloomberg Equity Analysis and ESG data.

ESG Scores	PMI	BAT	HM Sampoerna	Pakistan Tobacco Co.	VST Industries	Altria Group
Bloomberg	50	54.5	22.7	19.8	9.1	49.2
Sustainalytics	67.6	60.8	N/A	N/A	N/A	52.9

PMI's ESG ratings are well above most competitors. A comparison to their closest rival, British American Tobacco (BAT) is shown below. PMI is comparable to BAT only in GHG emissions, and significantly leads its competitor across other metrics, especially when considering PMI's size relative to BAT (using revenues and employee count as a proxy for size).

2016 Data	Gross Rev ($m)	Staff	GHG Release	Energy Use	Water use	Waste	Social Spend	Women in Mngt	LTI
PMI	$74,953	79,500	802	2,286	3,442	130	$30.2m	33%	.12
BAT	$63,316*	49,817	686	2,852	4,088	131	$10.83m*	16%	.24
PMI/ BAT	118%	160%	117%	80%	84%	99%	279%	200%	50%

*Revenue converted from £46,887m (inclusive of excise taxes),[83] community spending converted from £8.3.

31. Conclusion

PMI's sustainability reporting reflects a good deal of thinking around ESG issues. However, areas of material value according to SASB are not adequately addressed, particularly around product labeling and marketing. The company seems deliberately vague on these two topics in particular.

PMI seeks to deliver impact by getting smokers to switch to their smoke-free products:

> *Smoking cigarettes causes serious disease. By replacing cigarettes with less harmful alternatives we can significantly reduce the negative impact of our products on society.*

It may not come as a surprise, given the tobacco industry's historical relationship with science, that PMI's smoke-free alternatives have proven to be less harmful using Philip Morris -paid researchers in Philips Morris -owned labs using animal models and "smoke from a reference cigarette designed for research." How these products stand up to independent testing is yet to be seen.

PMI's recent efforts to undermine tobacco regulation, circumvent national marketing restrictions and other controversial actions as documented by Reuters stands in stark contradiction to its vision of a smoke free future. Reduced risk products may be nothing more than a smoke screen to conceal PMI's relentless focus on protecting the cigarette market.

[83] British American Tobacco (2017). Annual Report 2016. Retrieved from http://www.bat.com/group/sites/uk__9d9kcy.nsf/vwPagesWebLive/DO9DCL3B/$FILE/medMDAKAJCS.pdf?openelement

Annex 4 – Ana Galli Company Analyses

I. General Motors

II. Oxy

III. Spectra

General Motors

ESG Summary	RobecoSam	Sustainalytics	Vigeo	Asset4	Bloomberg
ESG	78	56.67	37	92.87	59.50
Environment	82	53.42	30	93.14	55.04
Social	79	49.56	33	86.25	57.89
Governance	-	71.05	55	93.58	71.43
Economic	75	-	-	82.92	-

32. Company Overview

Founded in 1908[84], General Motors is one of the most traditional cars manufactures in the world. With 350 facilities located in 59 countries, the company is an American multinational corporation with its headquarters in Detroit. Ten brands are currently part of General Motors conglomerate – Chevrolet, Vauxhall, Buick, GMC, Holden, Baojun, Cadillac, Opel, Wuling and Jiefang. The company has 180 thousand employees and delivered in 2017 approximately 9 million vehicles globally.

33. Materiality Issues

The Sustainability Accounting Standards Board (SASB) is an independent organization established to help investors assess firms according to sustainability standards most material to a company's industry. According to SASB[85], General Motors is categorized under the Transportation Sector and Automobiles Sub-Sector. Material issues relevant to General Motors are shown in Figure 1.

Figure 1: SASB Materiality Issues for GM

E-commerce	
Area	**Issue**
Environment	▪ Fuel Economy and Use-Phase Emissions ▪ Material Sourcing
Social capital	▪ Product Safety
Human capital	▪ Labor Relations
Business Model and Innovation	▪ Material Efficiency and Recycling

Those issues apply to companies that manufacture passenger vehicles, light trucks, and motorcycles. Industry players design, build, and sell vehicles that run on a range of traditional and alternative fuels and powertrains. Due to the global nature of this industry, nearly all companies have manufacturing facilities, assembly plants, and service locations in several countries around the world. The automobiles industry is highly concentrated, with a few large manufacturers and a large number of auto parts manufacturers feeding the supply chain.

The following section discusses how General Motors addresses these ESG issues.

34. Corporate ESG Strategies

Corporate responsibility topics, addressed on this report, can be found in General Motors' 2016 Annual

[84] https://www.gm.com/company/about-gm.html
[85] http://www.sasb.org/wp-content/uploads/2014/09/TR0101_ProvisionalStandard_Automobiles.pdf

Report (the latest version)[86] according to Global Report Initiative standards, form 10-K[87] report and at company's website[88]. General Motors discusses through these documents a number of material issues listed above according to SASB parameters.

ix. Disclosure area: Environment

Topic	Metric	Measure	GM Disclosure
Fuel Economy and Use-Phase Emissions	Sales-weighted average passenger fleet fuel economy, consumption or emissions, by region	Quantitative – Mpg, L/km, gCO_2/km, km/L	Not disclosed
	Number of (1) zero emission vehicles (ZEV) sold, (2) hybrid vehicles sold, and (3) plug-in hybrid vehicles sold	Quantitative - units sold	Not disclosed
Material Sourcing	Percentage of materials costs for items containing critical materials	Quantitative – Percentage (%)	Not disclosed
	Percentage of tungsten, tin, tantalum and gold smelters and refiners within the supply chain that are verified conflict-free	Quantitative – Percentage (%)	Not disclosed
	Discussion of management of risks associated with the use of critical materials and conflict minerals	Quantitative	Not disclosed

On this section, all the five SASB recommended metrics were not noticeably disclosed by General Motors on its reports, documents and website. Some of the subjects were slightly mentioned.

The Zero Emission Vehicles (ZEVs), hybrid and plug-in hybrid for instance, were quoted on the K-10 report[89]. According to the information disclosed, GM is investing in multiple technologies, offering increase levels of vehicle electrification including plug-in hybrid, full hybrid, extended range and zero emission battery electric vehicles as part of a long-term strategy. The company currently sells seven models in United States featuring some form of electrification. By 2023, GM aims to launch more than 20 new ZEVs.

About conflict minerals (tungsten, tin, tantalum and smelters) there are no details on the report or in any other document provided by General Motors. There are only two brief mentions: one on a document[90] called Conflict Minerals Policy, with only three short paragraphs without relevant information and another on the sustainability report[91], stating that the GM's supply base encompasses more than 3,500 supplier locations and that the company is member of Conflict-Free Sourcing Initiative (CFSI) and Declaration of Support for the Responsible Raw Materials Initiative (RRMI) signatory, which is positive but no detailed data is provided. No special attention is given to this matter, which is a relevant one related to environment and human rights issues. With the development of electric technologies, those minerals will

[86] http://www.gmsustainability.com/home.html#home
[87] https://www.gm.com/content/dam/gm/en_us/english/Group4/InvestorsPDFDocuments/10-K.pdf
[88] https://www.gm.com/
[89] https://www.gm.com/content/dam/gm/en_us/english/Group4/InvestorsPDFDocuments/10-K.pdf Page 6
[90] http://www.gmsustainability.com/_pdf/policies/GM_Conflict_Minerals_Policy.pdf
[91] http://www.gmsustainability.com/_pdf/downloads/GM_2016_SR.pdf?v2 Page 128

have even more importance to this sector, which will require even more attention. A lack of management on that matter can generate a strong reputational crisis, considering that the extraction of those minerals generates social and environmental illness such as deforestation, water contamination and modern slavery, among others.

ii. Disclosure area: Social capital

Topic	Metric	Measure	GM Disclosure
Product Safety	Percentage of models rated by NCAP programs with overall 5-star safety rating, by region	Quantitative – Percentage (%) of rated vehicles	Not disclosed
	Number of safety-related defect complaints, percentage investigated	Quantitative – Number, Percentage (%)	Not disclosed
	Number of vehicles recalled	Quantitative - Number	Not disclosed

There are two citations related to safety and scores mentioned on the sustainability report – "60 models received the highest overall vehicle score for safety in regional new car assessments around the world in 2016[92]", but doesn't mention which organization did the rating. The other citation is that Buick[93] was one of the only two brands in the industry last year to earn a National Highway Traffic Safety Administration (NHTSA) five-star Overall Vehicle Safety Score for every model in its lineup, without any further details. NCAP is not mentioned in any documents available.

Although the requested information is not disclosed as recommended by SASB, looking at Global NCAP website the company doesn't have a positive reputation regarding to safety according to the data available. In the Latin America ranking GM is graded with 1.6 stars[94] – the only brands have lower grades are JAC, Chery, Geely and Lifan. In an article[95], NCAP claims that three GM cars (Sail, Aveo and Spark) got zero-star rating in a crash test result in 2016, showing a high risk of life threating injury to passengers that fail to pass the United Nation's minimum crash test standards. In 2017 other model got zero-star in Latin America: Onix. In India[96], the Chevrolet Enjoy also didn't get any stars on safety.

Aware of this vulnerability, General Motors appointed in 2016 the first-ever Vice President of Global Safety[97], hired 200 employees to this specific area and invested resources to develop autonomous technology[98] to a future zero crashes standard, considering that 90% to 93% of crashes are caused by driver error[99].

About recalls, General Motors mentioned two facts on its 10-K report. The first, called Takata Matter[100]. Since 2015, GM avoid to make a recall on airbags inflators that can be potentially deadly. Last February, for the third time in three years the company asked the US government permission to avoid the recall. In its K-10 report, in case the recall happens, the company estimates a possible financial impact of approximately U$ 1 billion. The second is the Ignition Switch Recall[101] that led to expenses of U$ 0.4 billion (advertising), U$ 0.2 billion (legal related matters) and U$ 1.5 billion (other matters). According to the Bankruptcy Court, unsecured claims were approximately U$ 31.9 billion. The recall, due to faulty

92 http://www.gmsustainability.com/_pdf/downloads/GM_2016_SR.pdf?v2 Page 10
93 http://www.gmsustainability.com/_pdf/downloads/GM_2016_SR.pdf?v2 Page 14
94 http://www.globalncap.org/global-ncap-calls-on-gm-to-urgently-address-zero-star-safety-in-latin-america/
95 http://www.globalncap.org/global-ncap-calls-on-gm-to-urgently-address-zero-star-safety-in-latin-america/
96 http://www.globalncap.org/results/
97 http://www.gmsustainability.com/_pdf/downloads/GM_2016_SR.pdf?v2 Page 89
98 https://www.gm.com/content/dam/gm/en_us/english/Group4/InvestorsPDFDocuments/10-K.pdf Page 4
99 http://cyberlaw.stanford.edu/blog/2013/12/human-error-cause-vehicle-crashes
100 https://www.gm.com/content/dam/gm/en_us/english/Group4/InvestorsPDFDocuments/10-K.pdf Page 23
101 https://www.gm.com/content/dam/gm/en_us/english/Group4/InvestorsPDFDocuments/10-K.pdf Page 73

ignition switches, that could shut off the engine during driving and thereby prevent airbags to inflating, affected 30 million cars worldwide and paid compensation for 124 deaths.

According to SASB parameters, none of the three metrics were disclosed by General Motors.

iii. Disclosure area: Human capital

Topic	Metric	Measure	GM Disclosure
Labor Relations	Percentage of active workforce covered under collective-bargaining agreements, broken down by US and foreign employees	Quantitative – Percentage (%)	74%
	Number and duration of strikes and lockouts	Quantitative – Number, Days	Not disclosed

On the sustainability report, General Motors claims that the company works with 40 unions globally, representing 74% of its global workforce, that is covered by collective bargaining agreements[102], as one of the SASB's recommended metrics. There is no clear disclosure of strikes and lockouts – the second SASB's recommended metric - in any available reports, documents or company's website.

Although not mentioned in the SASB metrics to vehicles industry, forced labor is also a relevant topic to the automotive industry. According to Interfaith Center on Corporate Responsibility (ICCR)[103], this industry is one of the sectors at high risk of unethical recruitment practices - that also includes food, agriculture and hospitality industries. As part of an ICCR's agreement signed in 2017, General Motors adopted "no-fees" recruitment policies, which advocacy groups for years have said are crucial in reducing problems such as bonded labor, the loss of identification documents such as passports and other labor rights violations. According to its sustainability report, no child labor or forced/compulsory labor[104] were identified by General Motors operations or Tier suppliers.

iv. Disclosure area: Business and Model Innovation

Topic	Metric	Measure	GM Disclosure	
			Disposal Method	(k-tons)
			Reuse	467
			Recycling	2,019*
			Composting	5
			Recovery, including energy recovery	72
	Amount of total waste from manufacturing, percentage recycled	Quantitative – Metric tons (t), Percentage (%)	Incinerating (mass burn)	22
			Deep well injection	—
			Landfill	319
			On-site storage	Minimal
			Other (includes microwaving, enclaves, plasma processing and	11

102 http://www.gmsustainability.com/_pdf/downloads/GM_2016_SR.pdf?v2 Page 85
103 https://www.iccr.org/shareholder-campaign-eradicate-forced-labor-yields-multiple-corporate-commitments
104 http://www.gmsustainability.com/_pdf/downloads/GM_2016_SR.pdf?v2 Page 163

Material Efficiency and Recycling			other treatments) *Percentage recycled not disclosed
	Weight of end-of-life material recovered, percentage recycled	Quantitative – Metrics tons (t), Percentage (%)	Not disclosed
	Average recyclability of vehicles sold, by weight	Quantitative – Percentage (%) by sales-weighted (metric tons)	Not disclosed

Considering that the automotive industry is a material resource-intensive industry, General Motors achieved notable progress on waste minimization through innovation. In 2016, he company added 23 new sites for a total of 152 landfill-free sites worldwide[105] – as a total of 52 nonmanufacturing and 100 manufacturing sites. This action allows General Motors to generates less waste, recycle and maximize the use of required materials. Per year 2.5 million metric tons[106] of byproducts are recycled or reused, generating over U$ 1 billion in revenue and savings.

While General Motors offers a fair range of data on recycling, specific questions like the two of the three SASB recommended metrics are not disclosed. In the metric "Amount of total waste from manufacturing, percentage recycled", the percentage is not available, which makes difficult to assess the proportion of recycled material according to production.

35. Peer Comparison

ESG Scores	General Motors	Ford	Fiat	Tesla
Bloomberg	59.50	50.4	62.4	15.3
Sustanalytics	68	56	76	32

36. Conclusion

On average, there is a relevant amount of information disclosed on GM's report. Although some information required by SASB is not available in the tables above, this is probably a consequence of different methodologies – GM adopt the Global Report Initiative (GRI) methodology instead of SASB. As a member of the Global Compact since December 2015[107], the company also adopts United Nations Global Compact framework of principles –not necessarily those standards meet the same SASB requested data, which brings some blanks to our materiality report and do not necessarily represent a neglect act from GM.

According to the rankings above - where General Motors is the second-best option in Bloomberg and Sustanalytics, both behind Fiat -, the fact that the sustainability report had external audit by GHD[108], which adds credibility, all information disclosed in its reports and documents, including a good progress measurement (for instance, pages 15, 18 and 21 on the annual report) and a fair stakeholder engagement (page 33), I would recommend the company for future investments. The company also showed a fair commitment with the United Nations Sustainable Development Goals.

[105] http://www.gmsustainability.com/_pdf/downloads/GM_2016_SR.pdf?v2 Page 10
[106] http://www.gmsustainability.com/_pdf/downloads/GM_2016_SR.pdf?v2 Page 112
[107] http://www.gmsustainability.com/_pdf/downloads/GM_2016_SR.pdf?v2 Page 85
[108] http://www.gmsustainability.com/_pdf/downloads/GM_2016_SR.pdf?v2 Page 168

Some downsides are the two recall cases that can cost a relevant share of GM's financial resources and safety, that is undoubtedly a problem that apparently has been taking care by the company[109] with the first safety VP hired last year, the 200 new employees that operate in this area and the autonomous car project[110] that is able to bring more safety to passengers. Another downside is the diesel gate, that started with VW[111] and last year and dragged also GM that has been sued for allegedly putting defeat devices in trucks to beat emissions tests[112].

To show true commitment and be able to clean the reputational damage, a reasonable possible solution for that matter could be push investors and shareholders to press for substantial changes like the one that Toyota[113] are making in Europe, where the company decided not to sell diesel vehicles anymore due to high GHGs emissions, environmental concerns and the discredit of European population on diesel cars since the VW emissions-cheating scandal in 2015. Toyota declared phase-out diesel cars and more investments in hybrid vehicles – which can be also a solution to GM.

[109] http://www.gmsustainability.com/_pdf/downloads/GM_2016_SR.pdf?v2 Page 89
[110] https://www.gm.com/content/dam/gm/en_us/english/Group4/InvestorsPDFDocuments/10-K.pdf Page 4
[111] https://www.ft.com/content/75e42334-4165-11e7-9d56-25f963e998b2
[112] https://www.bloomberg.com/news/articles/2017-05-25/gm-accused-of-using-vw-like-defeat-devices-in-some-of-its-trucks
[113] http://www.dw.com/en/toyota-stops-selling-diesel-cars-in-europe/a-42839331

Occidental

ESG Summary	RobecoSam	Sustainalytics	Vigeo	Asset4	Bloomberg
ESG	32	73.73	39	93.08	47.30
Environment	29	67.79	35	91.71	42.98
Social	29	86.72	35	96.27	40.63
Governance	-	61.26	48	93.89	64.29
Economic	37	-	-	73.18	-

37. Company Overview

Founded in 1920 in Los Angeles, Occidental is an international oil and gas exploration and production company with operations in United States, Latin America and Middle East – more specifically in Oman, Qatar, United Arab Emirates and Colombia. Based in Houston, the company has nearly 37,000 employees and contractors worldwide. In 2017, the net income was $1.3 billion ($1.70 per diluted share), compared with a loss of $574 million (75 cents per diluted share) for 2016. Operating cash flow before working capital changes was $5 billion in 2017, and capital expenditures were $3.6 billion. According to Occidental, the company returned $2.3 billion of cash to its shareholders in the form of dividends. In the end of 2017 Oxy had a cash balance of $1.7 billion. Standard & Poor's and Moody's rating services maintained Occidental's 'A' and 'A3' ratings. Occidental's oil and gas segment reported earnings of $1.1 billion in 2017, compared with a loss of $0.6 billion in 2016.

38. Materiality Issues

The Sustainability Accounting Standards Board (SASB) is an independent organization established to help investors assess firms according to sustainability standards most material to a company's industry. According to SASB[114], Occidental Petroleum is categorized under the Non-Renewable Resources and Oil and Gas Exploration and Production Sub-sector. Material issues relevant to Occidental are shown in Figure 1.

Figure 1: SASB Materiality Issues for OXY

E-commerce	
Area	**Issue**
Environment	▪ Greenhouse Gas Emission ▪ Air Quality ▪ Water management ▪ Biodiversity impacts
Social capital	▪ Security, Human Rights and Rights of Indigenous Peoples ▪ Community Relations
Human capital	▪ Health, Safety and Emergency Management
Leadership and Governance	▪ Business Ethics and Payments Transparency

Those issues apply to companies that explore for, extract, or produce energy products such as crude oil and natural gas, which comprise the upstream operations of the oil and gas value chain. Companies in the industry develop conventional and unconventional oil and gas reserves; these include, but are not limited to, shale oil and/or gas reserves, oil sands, and gas hydrates. Activities covered by this standard include the development of both on-shore and off-shore reserves. Those standards are applied for "pure-play" exploration and production activities, or independent exploration and production companies.

The following section discusses how Occidental addresses these ESG issues.

[114] http://www.sasb.org/wp-content/uploads/2014/06/NR0101_ProvisionalStandard_OGExplorationProduction.pdf

39. Corporate ESG Strategies

Corporate responsibility topics can be found in Occidental's 2017 Annual Report[115], Carbon Disclosure Project documents (on water[116] and climate change[117]), on Climate-Related Risks and Opportunities[118] report and at company's website[119]. Oxy discusses through these documents a number of material issues listed above according to SASB parameters but do not go deeper on how the company address them. There is also a lack of information related to some of the recommended metrics.

x. Disclosure area: Environment

Topic	Metric	Measure	eBay Disclosure
Greenhouse Gas Emissions	Gross global Scope 1 emissions, percentage covered under a regulatory program, percentage by hydrocarbon resource	Metric tons CO_2-e, Percentage (%)	10450000 No percentage disclosed
	Amount of gross global Scope 1 emissions from: (1) combustion, (2) flared hydrocarbons, (3) process emissions, (4) directly vented releases, and (5) fugitive emissions/leaks	Metric tons CO_2-e	5380000
	Description of long-term and short-term strategy or plan to manage Scope 1 emissions, emissions reduction targets, and an analysis of performance against those targets.	Discussion & analysis	Partially disclosed
Air Quality	Air emissions for the following pollutants: NO_x (excluding N_2O), SO_x, volatile organic compounds (VOCs), and particulate matter (PM)	Cubic meters, Percentage (%)	Not disclosed
Water Management	Total fresh water withdrawn, percentage recycled, percentage in regions with High or Extremely High Baseline Water Stress	Cubic meters, Percentage (%)	Not disclosed
	Volume of produced water and flowback generated; percentage (1) discharged, (2) injected, (3) recycled; hydrocarbon content in discharged water	Cubic meters, Percentage(%), Metric tons (t)	Not disclosed
	Percentage of Hydraulically fractured wells for which there is public disclosure of all fracturing fluid compared to a baseline	Percentage (%)	Not disclosed
	Percentage of hydraulic fracturing sites where ground or surface water quality deteriorated compared to a baseline	Percentage (%)	Not disclosed
	Description of environmental management policies and practices for active sites	Discussion and Analysis	Minimum discussion and few specific strategies mentioned

115 http://www.oxypublications.com/annualreport/PDF/2017/Occidental_AR_2017.pdf
116 http://www.oxy.com/SocialResponsibility/overview/SiteAssets/Pages/Social-Responsibility-at-Oxy/Assets/CDP%202017%20Water%20Programme%20Report-Occidental.pdf
117 http://www.oxy.com/SocialResponsibility/overview/SiteAssets/Pages/Social-Responsibility-at-Oxy/Assets/CDP%202017%20Climate%20Programme%20Report-Occidental.pdf
118 http://www.oxy.com/SocialResponsibility/overview/SiteAssets/Pages/Social-Responsibility-at-Oxy/Assets/Occidental_Climate%20Report_2018.pdf
119 http://www.oxy.com/Pages/default.aspx

Biodiversity Impacts	Number and aggregate volume of hydrocarbon spills, volume in Arctic volume near shorelines with ESI ranking 8-10 and volume recovered	Number, Barrels (bbls)	Not disclosed
	(1)Proved and (2) probable reserves in or near sites with protected conservation status or endangered species habitat	Million barrels (MMbbls), Million standard cubic feet (MMscf)	Not disclosed

Most of the information on Environmental issue is not centralized. On the annual report, almost no information can be found. The few information disclosed was displayed in a form filled by Occidental to the Carbon Disclosure Project[120] – which doesn't adopt the same questions' format as SASB.

Also on the Climate-Related Risks and Opportunities[121] report, Occidental states its global strategy on GHGs mitigation, that includes active investment in CO_2 EOR and carbon capture, utilization and sequestration (CCUS), as well as other emissions-reducing technologies, positioning Occidental with a competitive advantage in lower-carbon scenarios. The document also provides context around the potential of those strategies but with no results.

On Oxy's website there are case studies[122] on projects developed by the company. Some of them are focused in environmental protection in areas where Occidental operates. For instance, Oxy enrolled 50,000 acres in Mexico through a state sponsored voluntary initiative to protect the habitat of two species, the Dunes Sagebrush Lizard and the Lesser Prairie Chicken - but doesn't present any accountable achievement.

xi. Disclosure area: Social capital

Topic	Metric	Measure	Occidental Disclosure
Security, Human Rights and Rights of Indigenous Peoples	Proved and probable reserves in or near areas of conflict	Quantitative	Not disclosed
	Proved and probable reserves in or near indigenous land	Quantitative	Not disclosed
	Discussion of engagement processes and due diligence practices with respect to human rights, indigenous rights and operation in areas of conflict	Discussion & analysis	Partially disclosed
Community Relations	Discussion of processes to manage risks and opportunities associated with community rights and interests	Discussion & analysis	Partially disclosed
	Number and duration of non-technical delays	Quantitative	Not disclosed

On the annual report, there is one mention on human rights, briefing stating that the company upholds and promotes human rights and respects cultural norms. On the company's website, most of the links available related to this subject are directed to non-existing pages. There is one link that works, Occidental's Human Rights Policy[123]. The document mentions one paragraph about communities and indigenous people, with a vague statement with no discussion nor analysis, as suggested by SASB on

[120] http://www.oxy.com/SocialResponsibility/overview/SiteAssets/Pages/Social-Responsibility-at-Oxy/Assets/CDP%202017%20Climate%20Programme%20Report-Occidental.pdf
[121] http://www.oxy.com/SocialResponsibility/overview/SiteAssets/Pages/Social-Responsibility-at-Oxy/Assets/Occidental_Climate%20Report_2018.pdf
[122] http://www.oxy.com/SocialResponsibility/overview/Pages/Case-Studies-Index.aspx
[123] http://www.oxy.com/SocialResponsibility/Governance/Documents/Oxy%20HR%20Policy.pdf

the chart above.

Overall, while Occidental provides some guidance and values on Human Rights to communities relations and indigenous people, there is no mention at all on three of the five SASB recommended metrics - they were not noticeably disclosed on Occidental website and reports.

Although Oxy apparently doesn't give much attention to this matter, it is worth to mention that human rights is a sensitive problem to oil companies, including Occidental. In 2015 the company was sued[124] by indigenous communities in Peru due to a contamination in northern Amazon. The allegation was that the company spilled oil and dumped toxic byproducts in their territory over three decades ending in 2001, causing premature deaths, birth defects and other health problems in the local population. The indigenous communities reached an out-of-court settlement in which the oil company payed them an undisclosed sum.

xii. Disclosure area: Human capital

Topic	Metric	Measure	Occidental Disclosure
Health, Safety and Emergency Management	Total Recordable Injury Rate, Fatality Rate, and Near Miss Frequency Rate for full-time employees, contract employees and short-service employees	Quantitative	Not disclosed
	Process Safety Event rates for Loss of Primary Containment of greater consequence.	Quantitative	Not disclosed
	Discussion of management systems used to integrate a culture of safety and emergency preparedness throughout the value chain and throughout the exploration and production lifecycle	Discussion and Analysis	Not disclosed

In its report, Occidental states that safety of operations, workforce and neighbors is one of its highest priorities. The document mentions that in 2017, combining employee-and-contractor Injury and Illness[125] incidence rate was 0.26, less than one-tenth of the current U.S. private industry average for employees of 2.9 published by the U.S. Bureau of Labor Statistics. But it is not clear with which number reference 0.26 is compared (probably 100, but it is not stated) nor if the number is related to all countries where Oxy operates or only related to United States operations. There is a specific mention about workers safety stated in a fast fact document that, in 2016, the at Qatar's[126] subsidiary employees worked collectively more than 5 million hours without a single recordable injury.

Although in October 2017 a subsidiary of Occidental reported[127] an oil spill from a pipeline in Cushing, Oklahoma, US, there is no mention of that issue in any website articles published by the company. Inquired by journalists at the time of the leakage, Oxy didn't provide any estimate amount of oil released, soil contamination or population affected, showing a lack of transparency not only on that matter but also in not mentioning the data in its official documents from 2017. To add on that, on Oxy's website[128], the only citation about oil spills is an overall annual data stating the number of barrels per year with no specific city, country or region, but it is out of date, showing numbers only from 2012 to 2015.

There is no clear disclosure on the company's annual report nor on its website about the three SASB recommended metrics displayed on the chart above.

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124 http://www.latimes.com/business/la-fi-occidental-peru-20150305-story.html
125 http://www.oxypublications.com/annualreport/PDF/2017/Occidental_AR_2017.pdf Page 5
126 http://www.oxy.com/News/Documents/2017_FastFacts_Qatar_Online.pdf
127 https://www.foxbusiness.com/features/occidental-subsidiary-reports-oil-spill-in-oklahoma
128 http://www.oxy.com/SocialResponsibility/Environmental-Stewardship/Pages/Crude-Oil-Releases.aspx

xiii. Disclosure area: Leadership and Governance

Topic	Metric	Measure	Occidental Disclosure
Business Ethics and Payments Transparency	Proved and probable reserves in countries that have the 20 lowest rankings in Transparency International's Corruption Perception Index	Quantitative	Not applicable
	Description of the management system for prevention of corruption and bribery throughout the value chain	Discussion & analysis	There is a code of business conduct

According to Transparency International's Corruption Perception Index[129], none of the countries where Occidental operates in among the 20 countries with the lowest corruption perception, so the first metric suggested by SASB doesn't apply.

About corruption and bribery prevention, there is no disclosure of this topic in its 2017 report but there is a quote on that matter at the company's website – the Code of Business Conduct[130]. According to the document, the company promotes diligences on prospective business partners, contractors, suppliers and agents; offer to workers a code training and toll-free compliance hotline or web reporting option, among other tools to avoid corruption. There is no disclosure of results or achievements.

In the past, Occidental was involved in cloudy negotiations in Africa[131]. The company payed US$ 1 billion in 2009 to the Libyan government as a signing bonuses to operate in the country. There was a suspicion that the signing bonuses was in fact bribe as a payoff to keep doing business. As consequence, in 2010 the US government required to Occidental and other six oil companies that had operations at that time in Libya to disclose payments of the same nature to the Securities and Exchange Commission to prevent corruption. An interesting outcome is that most of those seven companies are now members of the Extractive Industries Transparency Initiative (EITI)[132], a well-recognized initiative to fight bribery and corruption. Occidental decided not to join it.

40. Peer Comparison

ESG Scores	Occidental	Anadarko	Conoco Phillips	Hess Corporation	Noble Energy	Apache Corporation
Bloomberg	47.3	23.7	58.1	72.6	51	36.9
Sustanalytics	71.6	34.7	73.7	85.3	68.4	56.8

41. Conclusion

According to the rankings above, although in comparison with its peers Oxy is on the average (3rd on Sustanalytics and 4th on Bloomberg), I would not recommend the company for future investments. Some of the reasons are listed below.

There is a lack of clarity in figures related to safety; an absence of sensitive data such as oil spills; it is not a member of the most well-recognized transparency initiative on extractive industry; there are reputational damages due to past failures (Peru, Libya and North Sea); a vague policy about human rights and a poor reporting on essential matters such as water, greenhouse gas emissions and biodiversity impacts. Also, most of the areas of material value according to SASB are not adequately addressed or inexistent.

It is important to mention that Occidental was responsible for one of the worst deadliest oil rig accident in

[129] https://www.transparency.org/news/feature/corruption_perceptions_index_2017
[130] http://www.oxy.com/investors/Documents/code_of_business_conduct.pdf
[131] https://www.nytimes.com/2011/03/24/world/africa/24qaddafi.html?pagewanted=all
[132] https://eiti.org/supporters/companies

history – the Piper Alpha disaster, on the North Sea[133] - 167 workers were killed off the coast of Aberdeen. Although long time ago (1988), the experience could be an important learning to the company not only be able to avoid the problem but also to bring transparency to internal processes, but apparently the learnings have not been taking into consideration in its lately reports.

KPMG audits the annual report but only the accompanying consolidated balance sheets of Occidental Petroleum Corporation. Other information presented in the document are not audit, which is a downside in terms of credibility.

[133] https://www.theguardian.com/business/2013/jul/04/piper-alpha-disaster-167-oil-rig

ESG Summary	RobecoSam	Sustainalytics	Vigeo	Asset4*	Bloomberg
ESG	-	68.95	44	-	42.98
Environment	-	66.64	46	-	45.74
Social	-	72.1	35	-	42.11
Governance	-	67.15	56	-	37.50
Economic	-	-	-	-	-

*No ESG ratings exist for Spectra on Asset4

42. Company Overview

Founded in 2006, Spectra Energy is based in Houston, Texas and operates in three key areas of natural gas industry: transmission and storage, distribution and gathering and processing. According to the company's website, its goal is connecting growing supply areas to high-demand markets for natural gas and crude oil. Spectra's assets include more than 15,000 miles of transmission pipelines, 170 billion cubic feet of natural gas storage and approximately 5.6 million barrels of crude oil storage. Its operations are located in United States and Canada.

43. Materiality Issues

The Sustainability Accounting Standards Board (SASB) is an independent organization established to help investors assess firms according to sustainability standards most material to a company's industry. According to SASB[134], Spectra Energy is categorized under the Non-Renewable Resources and Oil and Gas Exploration and Production Sub-sector. Material issues relevant to Occidental are shown in Figure 1.

Figure 1: SASB Materiality Issues for Spectra

E-commerce	
Area	**Issue**
Environment	▪ Greenhouse Gas Emission ▪ Air Quality ▪ Water management ▪ Biodiversity impacts
Social capital	▪ Security, Human Rights and Rights of Indigenous Peoples ▪ Community Relations
Human capital	▪ Health, Safety and Emergency Management
Leadership and Governance	▪ Business Ethics and Payments Transparency

Those issues apply to companies that explore for, extract, or produce energy products such as crude oil and natural gas, which comprise the upstream operations of the oil and gas value chain. Companies in the industry develop conventional and unconventional oil and gas reserves; these include, but are not limited to, shale oil and/or gas reserves, oil sands, and gas hydrates. Activities covered by this standard include the development of both on-shore and off-shore reserves. Those standards are applied for "pure-play" exploration and production activities, or independent exploration and production companies.

The following section discusses how Spectra Energy addresses those ESG issues.

[134] http://www.sasb.org/wp-content/uploads/2014/06/NR0101_ProvisionalStandard_OGExplorationProduction.pdf

44. Corporate ESG Strategies

Corporate responsibility topics can be found in Spectra's 2017 Annual Report[135], 10-K form[136] and documents available on Spectra's website[137]. The company discusses through those documents a number of material issues listed above according to SASB parameters but do not go deeper on how the company address them. There is also a lack of information related to most of the recommended metrics, as can be perceived according to company's disclosure.

i. Disclosure area: Environment

Topic	Metric	Measure	Spectra Disclosure
Greenhouse Gas Emissions	Gross global Scope 1 emissions, percentage covered under a regulatory program, percentage by hydrocarbon resource	Metric tons CO_2-e, Percentage (%)	Not disclosed
	Amount of gross global Scope 1 emissions from: (1) combustion, (2) flared hydrocarbons, (3) process emissions, (4) directly vented releases, and (5) fugitive emissions/leaks	Metric tons CO_2-e	Not disclosed
	Description of long-term and short-term strategy or plan to manage Scope 1 emissions, emissions reduction targets, and an analysis of performance against those targets.	Discussion & analysis	Not disclosed
Air Quality	Air emissions for the following pollutants: NO_x (excluding N_2O), SO_x, volatile organic compounds (VOCs), and particulate matter (PM)	Cubic meters, Percentage (%)	Not disclosed
Water Management	Total fresh water withdrawn, percentage recycled, percentage in regions with High or Extremely High Baseline Water Stress	Cubic meters, Percentage (%)	Not disclosed
	Volume of produced water and flowback generated; percentage (1) discharged, (2) injected, (3) recycled; hydrocarbon content in discharged water	Cubic meters, Percentage(%), Metric tons (t)	Not disclosed
	Percentage of Hydraulically fractured wells for which there is public disclosure of all fracturing fluid compared to a baseline	Percentage (%)	Not disclosed
	Percentage of hydraulic fracturing sites where ground or surface water quality deteriorated compared to a baseline	Percentage (%)	Not disclosed
Biodiversity Impacts	Description of environmental management policies and practices for active sites	Discussion and Analysis	Not disclosed
	Number and aggregate volume of hydrocarbon spills, volume in Arctic	Number, Barrels (bbls)	Not disclosed

[135] http://www.spectraenergypartners.com/~/media/SEP/Documents/Investors/Annual%20Publications/SEP_2017%20Annual%20Report.pdf
[136] http://www.spectraenergypartners.com/~/media/SEP/Documents/Investors/Annual%20Publications/SEP_2017%20Annual%20Report.pdf
[137] http://www.spectraenergypartners.com/

volume near shorelines with ESI ranking 8-10 and volume recovered		
(1) Proved and (2) probable reserves in or near sites with protected conservation status or endangered species habitat	Million barrels (MMbbls), Million standard cubic feet (MMscf)	Not disclosed

Most of the information on environment are mentioned on risk factor, federal/local environmental laws and regulations where the company operates that may prevent operations expansion. Nothing directly related to SASB recommended metrics or any other relevant information on GHGs, air quality, water management and biodiversity is provided by Spectra.

About specifically spills, in other sources it is possible to find past accidents along Spectra's pipelines in United States and Canada. On the Pipeline and Hazardous Materials Safety (United States)[138] and on National Energy Board (Canada)[139] there are citation of accidents and violations of federal safety rules in both countries. Since 2006 at least 25 incidents were recorded by both agencies, that caused more than $12 million in property damage with causes ranging from equipment failure and incorrect operations to pipe corrosion.

Considering that there is no information about leakages on Spectra official documents, and although these are past problems, it is possible to understand better through these data what kind of situation the company faced and how they deal. The fact that a relevant amount of leakages occurred in the past and that the company doesn't provide information and expose solutions that have being taken to overcome those challenges is not positive in terms of transparency and accountability.

xiv. Disclosure area: Social capital

Topic	Metric	Measure	Spectra Disclosure
Security, Human Rights and Rights of Indigenous Peoples	Proved and probable reserves in or near areas of conflict	Quantitative	Not disclosed
	Proved and probable reserves in or near indigenous land	Quantitative	Not disclosed
	Discussion of engagement processes and due diligence practices with respect to human rights, indigenous rights and operation in areas of conflict	Discussion & analysis	Not disclosed
Community Relations	Discussion of processes to manage risks and opportunities associated with community rights and interests	Discussion & analysis	Not disclosed
	Number and duration of non-technical delays	Quantitative	Not disclosed

None of the SASB recommended metrics could be found on the annual report or in the other documents available on Spectra's website. Due to this lack of information, in a quick research on internet is possible to find complains and problems that Spectra faces with communities located close to its pipelines operations.

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138 https://search.usa.gov/search?affiliate=dot-phmsa-2&op=GO&page=5&query=spectra

139 https://search-recherche.gc.ca/rGs/s_r?st=s&num=10&s5bm3ts21rch=x&st1rt=0&langs=eng&cdn=oneneb&q=spectra

One of these complains come from a local NGO based in Pennsylvania, where Spectra operates. According to the NGO[140], in 2006 Spectra petitioned the Pipeline and Hazardous Materials Safety Administration (PHMSA) to waive specific safety regulations to some gas lines - in 2016 the Spectra's facility exploded. One person was burned and homes/businesses were evacuated. The company is expected to pay between U$ 75 and U$ 100 million[141].

The other community demonstration is through a website called Spectra Busters[142]. The platform created against the Spectra's Sabal Trail Transmission methane pipeline, exposes problems related to the company and the affected communities that surrounds its operations.

The NGO and the website mentioned can be small and maybe not relevant nationally and internationally, but are undoubtedly an indication that Spectra should engage more with local communities in managing risks to promote community rights and environmental protection – plus the lack of information in its report.

Investment in community engagement seems to be crucial and could be a good way to deal better with the challenges emerged from problems that affect local population and to fix the lack of communication that leads nowadays to a reputational damage.

xv. Disclosure area: Human capital

Topic	Metric	Measure	Spectra Disclosure
Health, Safety and Emergency Management	Total Recordable Injury Rate, Fatality Rate, and Near Miss Frequency Rate for full-time employees, contract employees and short-service employees	Quantitative	Not disclosed
	Process Safety Event rates for Loss of Primary Containment of greater consequence.	Quantitative	Not disclosed
	Discussion of management systems used to integrate a culture of safety and emergency preparedness throughout the value chain and throughout the exploration and production lifecycle	Discussion and Analysis	Not disclosed

There is no clear disclosure on the company's annual report nor on its website about the three SASB recommended metrics displayed on the chart above. On Spectra's report[143], there is only one numerical mention about safety, stating that employee injuries dropped by more than 40% from the previous year, and vehicle incidents were lower by 18%.

xvi. Disclosure area: Leadership and Governance

Topic	Metric	Measure	Spectra Disclosure
Business Ethics and Payments Transparency	Proved and probable reserves in countries that have the 20 lowest rankings in Transparency International's Corruption Perception Index	Quantitative	Not applicable

[140] http://www.alleghenydefense.org/spectra-pipeline-explosion.html
[141] https://stateimpact.npr.org/pennsylvania/2016/08/04/spectra-expects-to-pay-100-million-after-pipeline-blast/
[142] http://spectrabusters.org/2015/07/15/spectras-canadian-negligence-and-fort-nelson-leak-and-flare/
[143] http://www.spectraenergypartners.com/~/media/SEP/Documents/Investors/Annual%20Publications/SEP_2017%20Annual%20Report.pdf Page 3

Description of the management system for prevention of corruption and bribery throughout the value chain	Discussion & analysis	Not disclosed

According to Transparency International's Corruption Perception Index[144], none of the countries (United States and Canada) where Spectra operates are among the 20 countries with the lowest corruption perception, so the first metric suggested by SASB doesn't apply.

About corruption and bribery prevention, there is no disclosure of this topic on Spectra's report or in any other documents available. On other sources, it is possible to identify some cases related to corruption and conflict of interest where Spectra was involved. One[145] of them happened in 2016 when was unveiled the fact that one of company's consultant was married with a high-ranking official at the Federal Energy Regulatory Commission (FERC), who was leading at that time the review for two Spectra's gas pipeline projects.

The other case[146] happened between 2006 and 2009 when a gas company called Linde, through its subsidiary, Spectra, made corrupt payments to high-level officials at the National High Technology Center ("NHTC"), a 100% state-owned and -controlled entity of the Republic of Georgia, as part of an agreement to purchase certain income-producing assets from the NHTC. Prior to the asset purchase and Linde's acquisition of Spectra Gases, three high-level executives of Spectra Gases, who continued to manage Spectra for three years, agreed to share the profits earned from the sale of boron gas with certain high-level officials at the NHTC and a third-party intermediary with close connections to the officials in return for the NHTC Officials' assistance in ensuring that Spectra be the purchaser of previously mentioned assets.

i. Peer Comparison

ESG Scores	Spectra Energy	Boardwalk	Energy Transfer	Plains All American Pipeline	Williams Energy
Bloomberg	47.3	12	16.9	15.3	7.9
Sustanalytics	-	-	-	-	-

ii. Conclusion

Although Spectra has better a better position on Bloomberg's ESG Score ranking in comparison with its peers, according to the previous section, the company doesn't disclose a significant amount of information regarding its sustainability initiatives.

Some concerns were mentioned along the report. Other aspects of this downside are listed here:

-annual report with no guidance from corporate reporting framework like, for instance, the Global Reporting Initiative (GRI), the Sustainability Accounting Standards Board guidelines (SASB) or the International Integrated Reporting Council (IR) Framework, which turns into a challenge look for relevant information on material provided by Spectra;
-there are no mention on projects implemented, numbers, measurements or results of initiatives developed by the company;
-leakage and explosions through Spectra history;
-no internal or external audit reference on the annual report or in any source used to collect data to this assessment, making the information provided less credible – excepted by financial reporting that was audit by PwC.

[144] https://www.transparency.org/news/feature/corruption_perceptions_index_2017
[145] https://popularresistance.org/ferc-corruption-with-spectra-energy-exposed/
[146] http://fcpa.stanford.edu/enforcement-action.html?id=663

The fact that there is no appropriate methodology in reporting and the absence of concrete information shows a lack of commitment to society on transparency, which is crucial mainly in a non-renewable energy business, a sensitive industry to society and environment.

Add to transparency and accountability, apply recommendations from The Guide for Action, provided by Sustainable Development Goals Compass, can be a positive recommendation from shareholders to Spectra improve on some of the aspects mentioned. Make clear the resources that could affect sustainability, which activities are undertaken and what is generated through those activities is a good start point but it is also relevant report what changed in the target population and the impact of those changes through measurements and concrete results through numbers.