

The Sustainability Yearbook 2021

Tackling parity, plastics and petroleum
- reflecting on values, anticipating risks
and identifying opportunities

The Sustainability Yearbook 2021

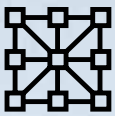
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2021 Annual Corporate Sustainability Assessment



61

Industries



7,032

Companies assessed*

*As of January 22nd, 2020



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The Sustainability Yearbook

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Publisher

Evan Greenfield,
evan.greenfield@spglobal.com

Editor

Robert Dornau, +41 44 529 51 73
robert.dornau@spglobal.com

Editorial Board

Edoardo Gai
Evan Greenfield
Nathan Hunt
Manjit Jus

Copy Editors

Rosanna Brady, Mariano De Lellis,
Lyn Zurbrigg

Production Manager

David Sullivan, + 44 207 176 0268
david.sullivan@spglobal.com

Production Office

S&P Global Switzerland SA
Zürich Branch
Josefstrasse 218
8006 Zürich
Switzerland

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S&P Global Switzerland SA
+41 33 529 51 70
esgbenchmarking@spglobal.com

S&P Global

55 Water Street New York,
New York 10041. United States

President & CEO

Doug Peterson

Global Head of ESG Research

Manjit Jus

Contributors



Rosanna Brady

ESG Operations Specialist,
S&P Global



Robert Dornau

Director,
Corporate Engagement,
S&P Global



Alexandra Mihailescu Cichon

Executive Vice President,
Sales and Marketing,
RepRisk



Marie Froehlicher

ESG Specialist,
S&P Global



John Duncan

Initiative Lead,
No Plastics in Nature,
WWF International



Lotte Knuckles Griek

Head of Corporate Sustainability Assessments,
S&P Global



Kieran Dobson

PhD,
ESG Specialist,
S&P Global



General Chuck Jacoby

(US Army, Ret.),
Executive Vice Chairman,
Tilman & Company

S&P Global



Manjit Jus

Global Head,
ESG Research
and Data,
S&P Global



Lily Shepherd

Programme Manager,
Ellen MacArthur
Foundation



Jan Anton van Zanten

Strategist,
Sustainable
Development Goals,
Robeco



Jacob Messina

Senior
Sustainable
Investing
Strategist,
Robeco



Nathan Stovall

Principal Analyst,
S&P Global
Market Intelligence



Lindsey White

Senior Editor,
S&P Global
Market Intelligence



Azadeh Nematzadeh

Senior Data
Scientist,
S&P Global



Isabelle Stauffer

Senior Manager,
ESG Research,
S&P Global



Douglas L. Peterson

President
and CEO,
S&P Global



Leo Tilman

Founder and CEO,
Tilman & Company



Foreword

Dear Stakeholder,

In a world of extreme uncertainty, people are searching for clarity. Clarity to make business and investment decisions. Clarity to move their organizations forward with confidence. Last year, more companies than ever took part in our Corporate Sustainability Assessment. A record amount of corporate ESG data derived from this preeminent evaluation offers shareholders, executives and anyone who wants independent insights, the transparency to make better-informed choices.

This new level of disclosure is testimony to one of the silver linings of 2020. The convergence of the COVID-19 pandemic, increased consciousness of race, diversity and inclusion in our communities and the devastation created by extreme weather and climate change have cemented the theme of sustainability as the business community's No. 1 priority.

As we begin 2021, the commitment of the new U.S. administration to put climate policy at the forefront of its domestic and international agendas promises to reinforce and accelerate this trend, with implications for the growth in carbon markets and innovation in the broader energy transition.

This Yearbook is once again filled with revealing data and stories. Articles about rethinking how to assign value across investments, companies and economies; plastics packaging; gender equality in the workforce; the electrification of transportation; and using ESG as a tool for effective risk management are worthy of your time.

In a year when so many other things were competing for people's attention, I want to express S&P Global's gratitude to each of the companies that participated in the CSA in 2020. Contributing to the CSA last year demonstrated a great deal of commitment to transparency and to building more sustainable economies and communities during a difficult time.

I also want to thank every one of our team members who are responsible for collecting and analyzing the CSA submissions. It's been one year since we acquired the ESG ratings business from the asset manager Robeco. We're proud of the team's integration and we're pleased at how essential the CSA has become to the ESG work we're doing at our company.

Looking ahead to the rest of 2021 and beyond, I am as hopeful as ever about the positive contributions businesses will make to society. Increasing levels of engagement in the CSA create the essential intelligence to power the markets of the future and to accelerate progress in our world.

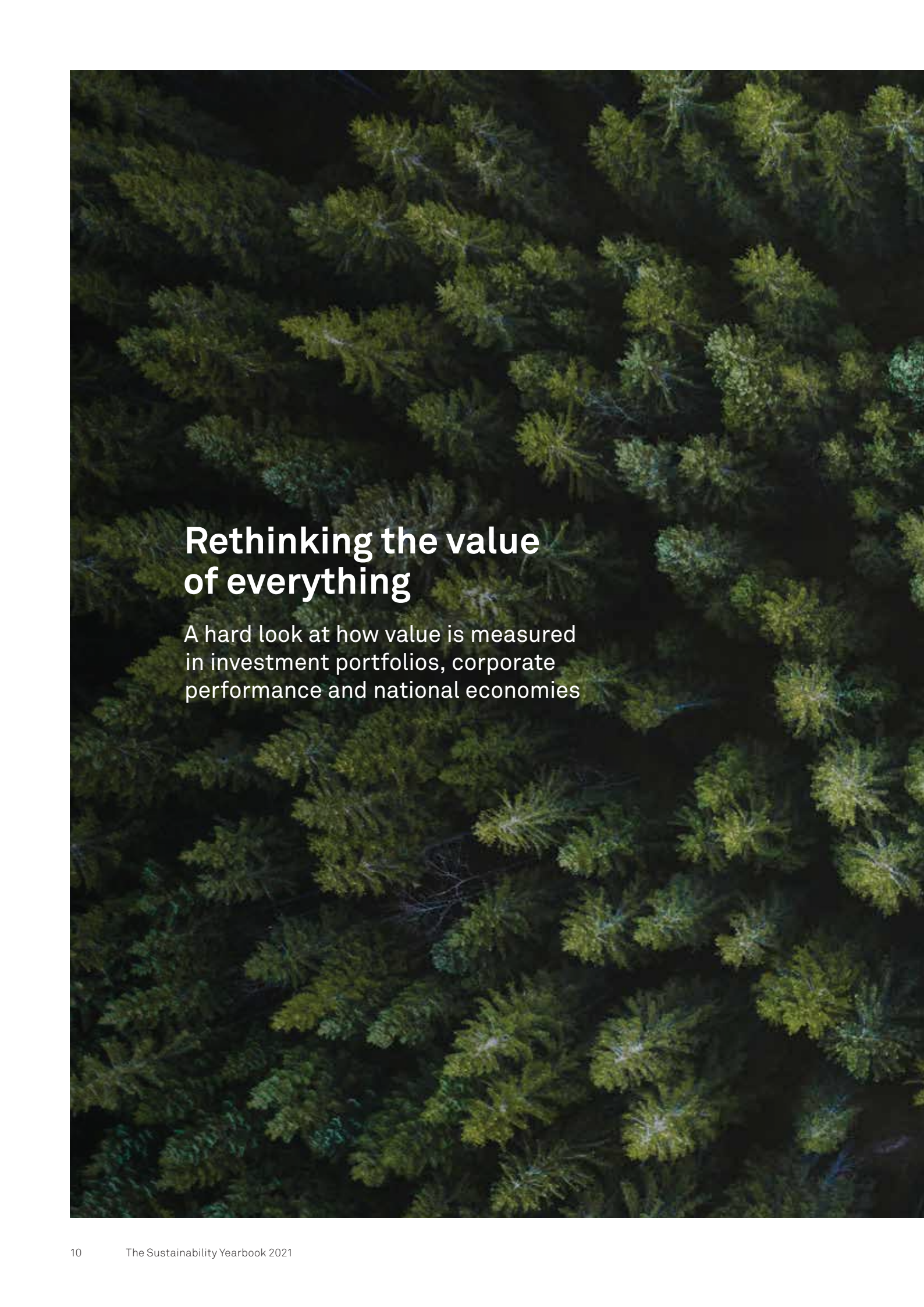
Sincerely,

Douglas L. Peterson
President and CEO
S&P Global



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An aerial photograph of a dense forest of evergreen trees, likely spruce or fir, with a rich green color palette. The trees are packed closely together, creating a textured, repetitive pattern of conical shapes. The lighting is somewhat dramatic, with some areas appearing darker than others, suggesting a canopy effect.

Rethinking the value of everything

A hard look at how value is measured
in investment portfolios, corporate
performance and national economies



Current measures of value are too narrowly focused on measuring growth and progress in terms of goods and services consumed and produced. As a result, the value of easily monetized input, outputs, and capital assets is overestimated while the more diffuse but nevertheless material value that characterizes social and environmental assets is underestimated. Moreover, such rigid accounting frameworks omit costly externalities that further distort current estimates and future outlooks.

This myopic view has created an unsustainable system that rewards the short-term and discounts the long-term. But conventional metrics and methods of today's accounting will not work for a sustainable tomorrow.

New mandates, new metrics and new methodologies are needed to help companies and economies recalibrate for the future. We advocate a rethink on what constitutes value creation as well as how to measure and monetize it. With a wealth of corporate sustainability data, analytical tools and long-term orientation, ESG research and ratings providers like S&P Global will be key collaborative partners in defining a new way of assessing value that ensures the interests of all stakeholders are represented and aligned.

¹ Kuznets S. National Income, 1929-32. Letter from the Acting Secretary of Commerce to the US Senate. 1934.

Looking for better metrics

The inappropriateness of using GDP as the central benchmark for a nation's success is well noted. The Nobel Prize-winning economist Simon Kuznets, who is often credited as the inventor of the metric, warned that GDP was not a suitable measure of a country's economic development or well-being in his seminal work which redefined how economic growth should be viewed.¹ American politician Robert Kennedy summarized it well in his election speech in 1968 when he said "it [GDP] measures everything in short, except that which makes life worthwhile".

Some governments are looking for better metrics of success. New Zealand is attempting to become the first nation to do without GDP and focus on well-being as a better measure instead. It is part of the Well-being Economy Governments (WEGo) partnership, which currently includes Scotland, Iceland and Wales, and seeks to build economies that deliver human and ecological well-being. Yet while these governments are pioneering new metrics, the use of GDP as the primary yardstick with which national success is measured remains to this day.



Jacob Messina
Senior Sustainable
Investing Strategist
Robeco



Jan Anton van Zanten
Strategist for the
Sustainable Development
Goals
Robeco

“What you measure affects what you do”. Joseph Stiglitz

Our dependency on GDP complicates a sustainable recovery from Covid-19. As Joseph Stiglitz, former World Bank chief economist and Nobel laureate, explains: “What you measure affects what you do”.² GDP is the monetary value of all the finished goods and services that are produced within a country. This makes it a sign of economic productivity, not of societal and environmental well-being. The consequences are significant: if metrics fail to capture a myriad of environmental and societal costs and benefits, then our policies will fall short of creating inclusive and sustainable societies coming out of the Covid-19 crisis.

Following this logic through to the long-term impact on investors, if our accounting systems do not reward (or penalize) companies for these hitherto non-financial benefits (or damages), investors are not being properly informed about companies’ true value creation potential. Ultimately our risk-adjusted returns, on which our performance is largely judged, does not show the whole picture.

² Stiglitz, J.E., Fitoussi, J., & Durand, M. Beyond GDP: measuring what counts for economic and social performance. Paris: OECD Publishing, 2018.



... if metrics fail to capture a myriad of environmental and societal costs and benefits, then policies will fall short of creating inclusive and sustainable societies coming out of the Covid-19 crisis.

The 'cost' of doing the right thing

The principal problem with using GDP is its failure to capture a myriad of externalized costs and benefits, many of which mean the difference between life and death. For example, the production and consumption of cigarettes, sugary drinks and fast food all inflate GDP. However, the adverse health impacts they inflict on their consumers is insufficiently captured by the metric and are thus easily ignored.

By the same reasoning, GDP measures the incomes (salaries, profits, taxes) reaped by providing essential services such as health and education but fails to adequately measure all the societal benefits that these activities provide to patients and students in the long run. These shortcomings make investing in a sustainable future less attractive from a GDP perspective.

The value of environmental stewardship

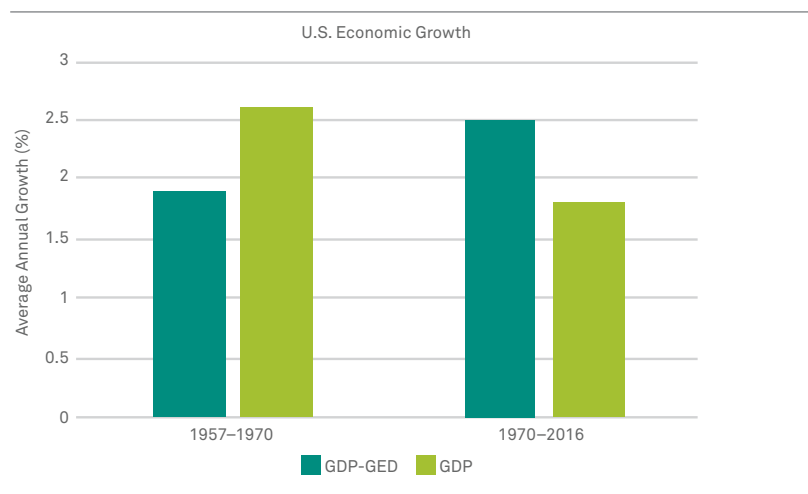
Environmental stewardship, in turn, typically reduces GDP, because it does not include the value that nature provides. The business world and the academic field of environmental economics commonly refer to this as ecosystem services provided by natural

capital. Healthy ecosystems and biodiversity provide numerous services, from pollination and clean drinking water to medicinal resources and recreation. Hence, nature provides the essentials for a high quality of life.

Researchers are increasingly trying to quantify the value that nature provides. One example is the Gross Environmental Damages (GED) measure developed by Nick Muller of Carnegie Mellon University. Muller found that reported GDP in the United States was overstated during 1957–1970 and understated during 1970–2016 if ecosystem services were valued (see figure 1). When we focus simply on GDP (the light green bars), we see that GDP growth has declined since 1970.

But once we take pollution or the environmental damages that Muller calculated into account (blue bars), growth actually accelerated after 1970 – the year in which the US Environmental Protection Agency (EPA) was created. Less pollution means less environmental damages. Subtracting GED from GDP gives an insight into the wealth that is created by accounting for the harm of pollution. The idea is clear: today GDP ignores environmental costs and benefits to our detriment. Yet much work needs to be done to standardize such approaches.

Figure 1: Recent growth of the US economy would be higher if the value of environmental protection is included.



Source: Catherine Wolfram. GDP – Gross Environmental Damage = actual wealth creation. June 27, 2019. EnergyPost.EU. Based on the work of Nicholas Z. Muller.



... what happens when decisions suggested by valuing natural capital contradict those suggested by applying standard accounting principles?

The Natural Capital Protocol (NCP) is one such effort. It is a comprehensive framework seeking to standardize approaches to measuring and valuing natural capital impacts and improve decision making for businesses. But what happens when decisions suggested by valuing natural capital contradict those suggested by applying standard accounting principles? The next step is to integrate these standards into financial accounts, which requires policies that reward companies for preserving ecosystem services.

The NCP is also an acknowledgment of the difference between measures of flows (e.g. GDP or cash flow) and stocks (e.g. reserves or balance sheet). Both are needed to assess the sustainability of our economy. We are thus interested in new approaches to measure social capital, human capital, and cultural capital.

‘Low wage’ versus ‘low value’

Indeed, the Covid-19 crisis has exposed problems with how we value human capital as well. We see that many jobs at the frontline of battling the pandemic — such as nurses and social health workers — receive relatively low wages. While GDP only measures these professionals’ contribution to society by looking at their income, their societal impact is of course much greater: they protect people’s health and well-being. Similar arguments can be made for many other jobs where salaries tend to be low (or non-existent) but societal impacts are high (e.g. teachers, parents, warehouse workers, etc.).

In other words, GDP calculations assume that price equates to value, when this is often not the case – there is a difference between value creation and value extraction, between wealth creation and rent seeking.³

³ Mariana Mazzucato. ‘The Value of Everything’. 2018.



⁴ <https://www.unpri.org/sdgs/the-sdgs-are-an-unavoidable-consideration-for-universal-owners/306.article>

⁵ Ashiabor, H., Kreiser, L., Sirisom, J., & Milne, J. E. (Eds.). (2011). *Environmental taxation and climate change: achieving environmental sustainability through fiscal policy* (Vol. 10). Edward Elgar Publishing.

⁶ Daly, H, Cobb J. For the Common Good: Redirecting the Economy Toward Community, the Environment, and a Sustainable Future. 1989.

⁷ http://www.consultmcgregor.com/documents/resources/GDP_and_GPI.pdf

⁸ <https://www.kateraworth.com/doughnut>

⁹ Rockström, J., Steffen, W., Noone, K., Persson, Å., Chapin III, F. S., Lambin, E., & Nykvist, B. (2009). Planetary boundaries: exploring the safe operating space for humanity. *Ecology and Society*, 14(2).

Failing to measure the true costs and benefits of natural and social capital yields incomplete and inaccurate information that leads to overconsumption of certain goods or services, underconsumption of others, and the misallocation of capital that comes with it. Ultimately, economies become inefficient and produce suboptimal outcomes that would be required to provide human well-being and ecological sustainability. This is concerning, particularly to investors whose breadth of portfolio coverage makes them universal owners.⁴

Various scholars and policymakers have proposed to also use policy instruments for improving sustainability outcomes, such as giving tax credits to promote environmental stewardship, or increasing taxes on the consumption of primary resources.⁵ These practices would be similar to the US federal government incentivizing innovation with R&D tax relief. They would also be similar to governments around the world using excise taxes to try to reduce the negative externalities from the consumption of alcohol and tobacco. Followed to their logical conclusion, such changes would have significant impacts on the financial performance of companies and capital allocation by investors.

Beyond GDP – measuring a sustainable future

Many have proposed concepts to replace GDP. One early contestant is the Genuine Progress Indicator, which was developed by economist Herman Daly and theologian John Cobb in 1989.⁶ This indicator includes some of the common measures of well-being, such as infant mortality, child poverty, life expectancy, insecurity, crime, pollution, water quality and resource depletion.⁷

Failing to measure the true costs and benefits of natural and social capital yields incomplete and inaccurate information

More recently, Kate Raworth's Doughnut Economics has gained a lot of traction (see Figure 2). This doughnut nicely describes a new paradigm, where twelve social dimensions are to be met within nine planetary boundaries.⁸ Not meeting the social dimensions means that there is a shortfall: people are left behind by not having access to basic needs and insufficient wellbeing. But if we meet people's basic needs by using more natural resources than our planet can generate, we're overshooting planetary boundaries in areas such as biodiversity, climate and fresh water. This is a concept that originated in, and is now playing a central role in, sustainability science.⁹

¹⁰ Jeremy Grantham. The Race of Our Lives Revisited. August 2018. GMO.

The doughnut helps guide us into a more sustainable future. Assessments show that to date we have challenges on both ends: many people around the world still have a shortfall in seeing their social needs met, while we are also exceeding various planetary boundaries. By combining the planetary boundaries framework with people’s social needs, the doughnut can serve as a practical compass for a sustainable Covid-19 recovery.

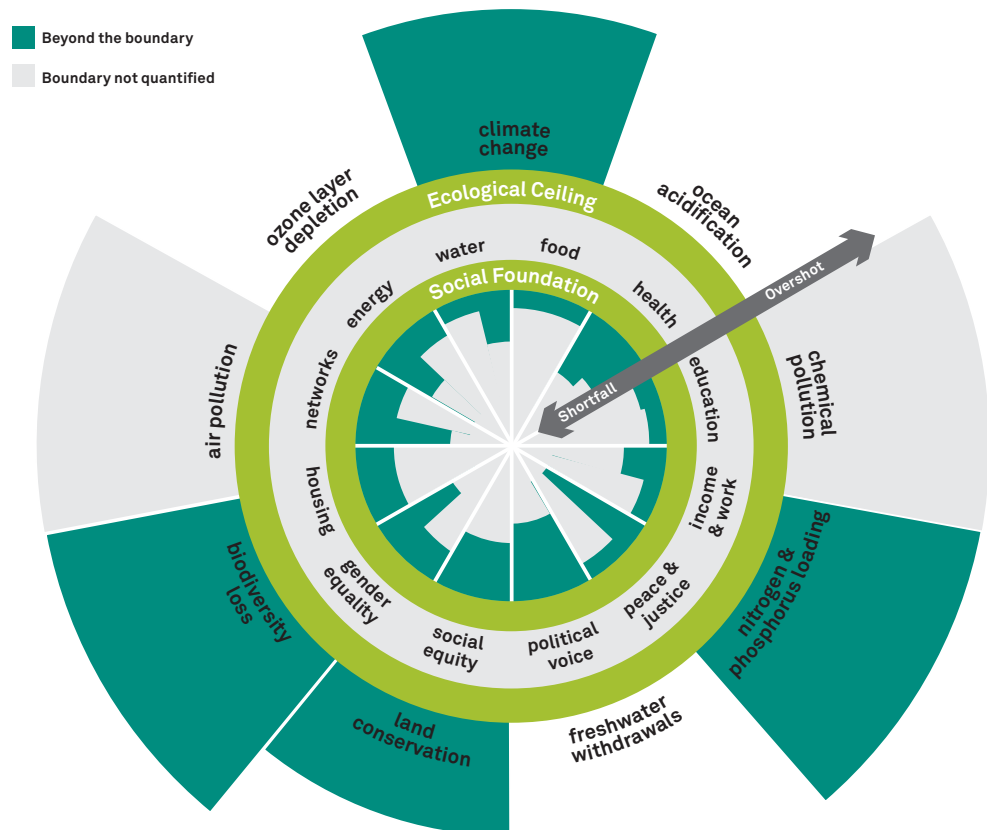
Not all alpha is created equal

As suggested above, even if society starts to measure progress in a more comprehensive manner, new policies and accounting standards are needed to reflect these principles in companies’ financial statements, and valuation approaches used by investors also need to change. Many valuation models

start with these incomplete or flawed inputs, then discount the future so highly that the net present value for a project is higher if you degrade a forest or allow farmland soil to erode instead of managing the assets to make sure they remain healthy forever.¹⁰ From a long-term perspective, it makes more sense to invest in assets with a lower, but more sustainable, internal rate of return.

The fact is that common measurement approaches are not meeting our needs, given environmental constraints and the various social objectives outlined in the UN’s Sustainable Development Goals. For this reason, the mission and vision of asset managers and asset owners should be based in sustainable thinking, shifting the investment industry from simply creating wealth to creating wealth and well-being.

Figure 2: The doughnut of social and planetary boundaries.



Source: <https://www.kateraworth.com/doughnut/>

Creating better measurement systems that account for sustainable decisions is fundamental to developing a sustainable economy. If more environmental and societal costs and benefits are internalized in financial statements, we gain insights into how alpha is generated.

However, fiduciary obligations in many countries make it difficult for investors to focus on anything other than shareholder returns. In many cases, this is irrelevant, because sustainability is a driver of financial performance. However, there are also times when negative externalities allow companies to outperform, perhaps from anti-competitive practices or lax environmental regulations, particularly in the short term.

Investors must then navigate between choices that may lead to negative consequences in the long term and those that are clearly sustainable, in order to ensure we meet our current performance obligations while protecting long-term returns—a challenging balancing act.

Creating better measurement systems that account for sustainable decisions is fundamental to developing a sustainable economy. If more environmental and societal costs and benefits are internalized in financial statements, we gain improved insights into how alpha is generated. For instance, a tobacco company and a medical devices company might create the same alpha – although the former harms human health while the latter promotes it. We suggest that comprehensive accounting of the actual value created for all stakeholders by such two companies would expose such differences.

Active collaboration and industry-wide standardization

Asset managers should measure the various impacts of investments using economic, social and environmental indicators. Examples could include the number of clean gigawatts per hour of renewable energy provided, the amount of greenhouse gas emissions avoided, or the volume of waste recycled within investment portfolios. These measures provide investors with better insights into how both wealth and well-being are being created.

However, standardization across the industry is lacking. Those within the financial community should collaborate with others in the industry to share knowledge and develop impact standards. An example is the Natural Capital Declaration, an initiative led by the United Nations Environment Programme Finance Initiative and the Global Canopy Program, that helps the financial sector to integrate natural capital considerations into investment products, as well as in accounting, disclosure and reporting frameworks.

Through this collaboration, Robeco and other sustainably minded asset managers have modelled the impact of natural capital on the credit risks of companies in chemicals, food and beverage, and mining. Having such metrics better informs investors on how their individual investment decisions impact our collective world, and what levels of risk are associated with different investment strategies. In this respect, S&P Global has been an energetic champion of measuring non-



¹¹ The Economist (23 May 2020). The world urgently needs to expand its use of carbon prices.

financial metrics to better assess corporate performance. Moreover, in conjunction with RobecoSAM, they have been a pioneering developer of the tools and methodologies needed to integrate ESG data into investment portfolios. Over the past two decades the S&P Global Corporate Sustainability Assessment (CSA) has continued to raise the bar for ESG ratings and research and has set a new global standard for corporate sustainability performance. As a result, investors are better informed of sources of intangible value and/or intangible risks within companies. On the topic of impact, Robeco continues to work with S&P Global and other leading asset managers and asset owners to improve disclosure and standardization of impact metrics, educating both companies and investors in the process.

Developing better metrics and integrating these into investment processes is not an end destination but a journey that requires iterative improvement and development – with each step, we improve our measurement, understanding and influence of economic, social, and environmental impacts.

Monetizing impacts and aligning incentives

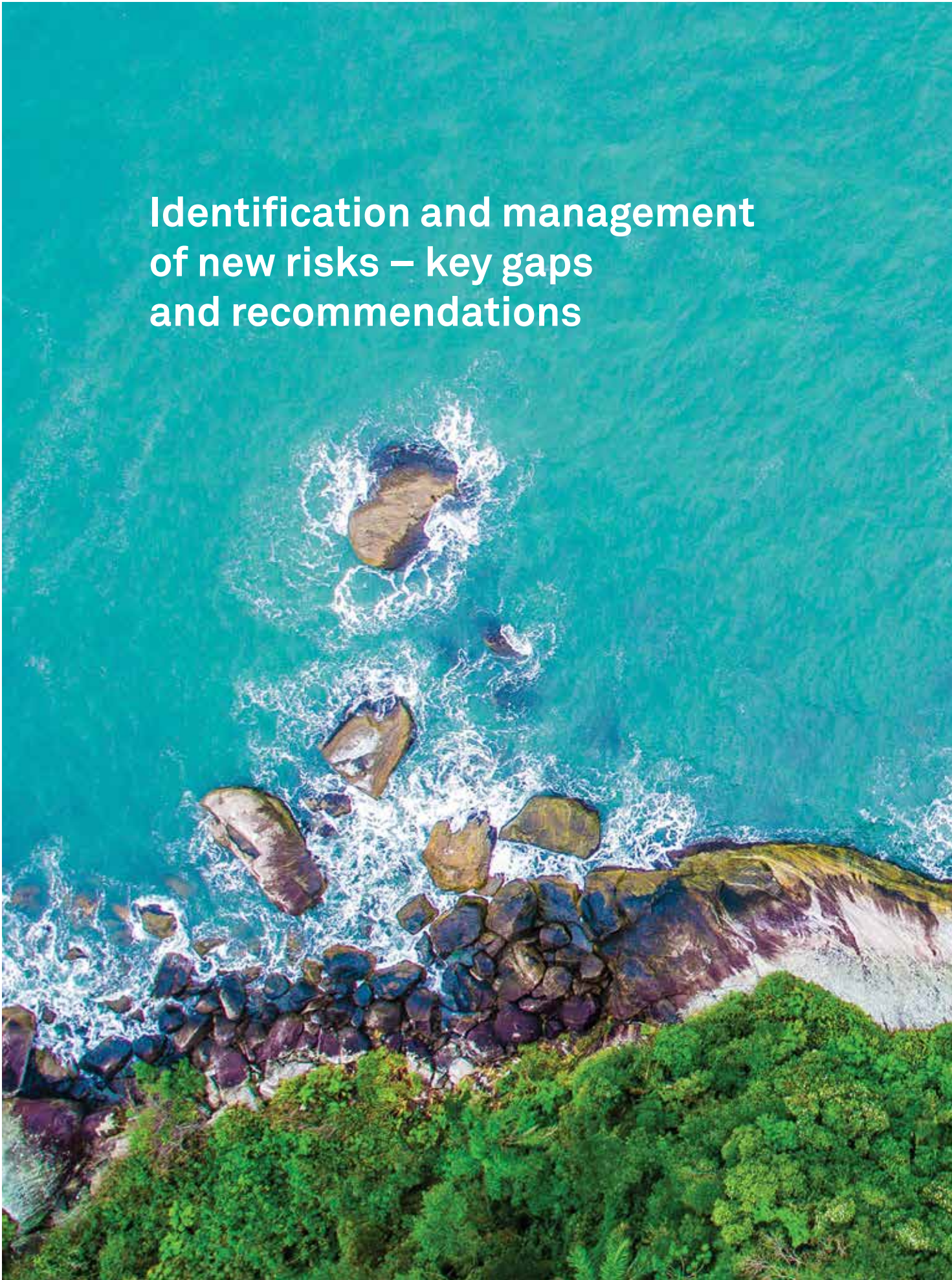
Beyond the standardization of impact metrics, we suggest monetizing and valuing these impacts and externalities so that financial incentives align with sustainability principles. Putting a price on greenhouse gas emissions –

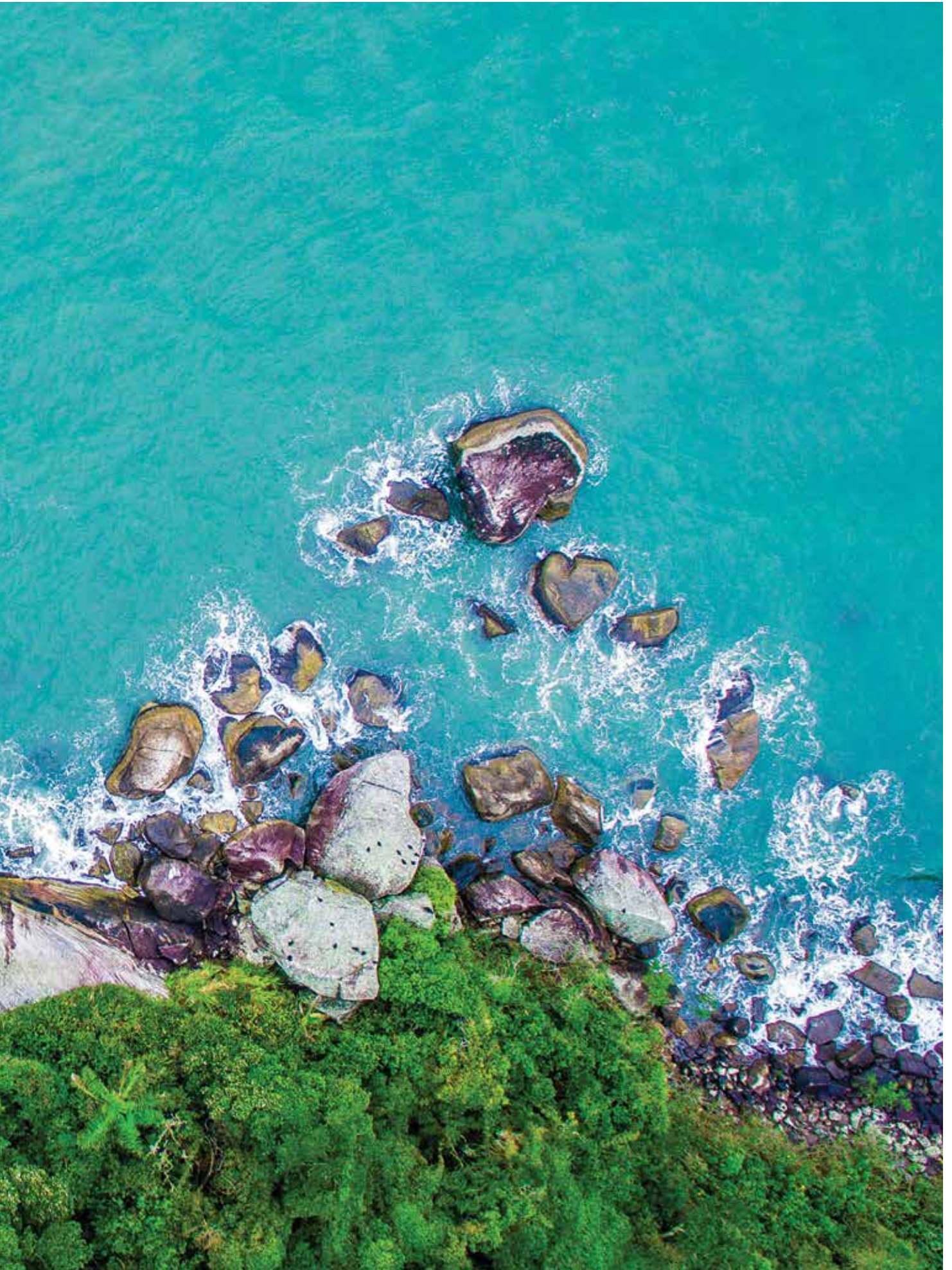
for which economists have long been calling – is a simple example where we already see how this works in practice.¹¹ Emitters have to pay, and clean energy companies or more efficient solution providers (e.g. electric vehicles) often receive subsidies.

In these cases, subsidies are in effect a recognition that the value of a product or service to society is higher than what a consumer is willing to pay. Such policy solutions can be developed for other types of pollution, ecosystem services (soil, forests and biodiversity generally), and drivers of mental and physical health.

The result of these changes would be an ability to steer towards an economy that is sustainable and resilient, and one that creates well-being for people within our planetary boundaries. Aligning financial incentives with sustainability objectives will give companies, investment managers, asset owners and sovereign economies a new mission creating not just wealth but also well-being. S&P Global's role in extolling sustainability leaders and identifying industry laggards will contribute to these efforts that steer an investment industry known for its short-sighted view of financial profits towards a far-sighted vision of global benefits. ■

Identification and management of new risks – key gaps and recommendations







Are corporates prepared for disruptive risks?

Traditionally, and even more so since the 2007-08 financial crisis, effective risk management has focused on developing and implementing internal control processes to comply with existing regulations. However, while considered necessary, managing risks from a compliance perspective has been shown to be far from sufficient for managing larger unexpected events triggered by external factors.

S&P Global's Corporate Sustainability Assessment (CSA) asks questions about emerging risks, risk culture, and risk governance. This article analyzes companies reporting on emerging risks and shows how a strong risk culture can arm companies with useful tools to both identify and prepare for these events. Our Media and Stakeholder Analysis (MSA) then considers the relationship between a company's risk culture and the probability of it being subject to controversies. Finally, the external contributions of RepRisk¹ and Tilman & Company² provide

two compelling perspectives on the topic: (1) Why is the role of ESG risk due diligence essential to identify disruptive risk events from an investor point of view?, and (2) How can leaders successfully navigate a volatile and unpredictable environment occasioned by the occurrence of such disruptive risk events?

While the COVID-19 pandemic is considered a disruptive emerging risk, it has generated a new environment that amplifies current known risks and creates related new emerging risks. According to the World Economic Forum's (WEF) COVID-19 outlook³, the most worrisome risks for businesses linked to the COVID-19 crisis are a prolonged global recession, a surge in bankruptcies, and a wave of consolidation, cyberattacks, and data fraud due to a sustained shift in working patterns.

The current health crisis is placing companies in a position they have never experienced before and reinforcing the need for effective risk management practices. The analysis of the CSA data provides insights on how prepared companies are for current and future disruptive risk events.

¹ A data science company for due diligence on material ESG risks; an independent firm not affiliated with S&P Global or any of its divisions; www.reprisk.com

² A strategic advisory firm that helps companies and investors effectively navigate disruption and uncertainty; an independent firm not affiliated with S&P Global or any of its divisions; <http://lmtilman.com/>.

³ "COVID-19 Risks Outlook: A Preliminary Mapping and Its implications", WEF, May 2020, www3.weforum.org/docs/WEF_COVID_19_Risks_Outlook_Special_Edition_Pages.pdf.



Isabelle Stauffer

Senior Manager
ESG Research
S&P Global

The current health crisis is placing companies in a position they have never experienced before and reinforcing the need for effective risk management practices.

Identifying emerging risks remains a substantial challenge

The current global health crisis has undeniably confirmed that complying with existing risk regulations and standards is not equipping companies well enough with useful tools to cope with external risk events, such as a global pandemic. To consider such events within a risk management approach requires that they be defined. While most businesses are usually good at defining and managing material risks – those that pose clear and present danger – the identification of new and emerging external risks is still underdeveloped. External risks that are beyond the control of businesses

are often considered unlikely to occur in the near future and, although their impact may be viewed as significant, they are frequently ignored or remain unreported. This is because they compete for the same capabilities and resources that immediate risks have already started to draw upon.

With the objective of demonstrating why the identification of global risks, such as a pandemic, is still unsatisfactory, we have categorized risks into three distinct categories, which require different methods of identification and management: internal risks, strategic risks, and external risks.

Internal risks that originate from within an organization include unlawful or unethical behaviors or failure in operational processes. Such risks are easily identifiable, and an organization can often avoid or eliminate them by implementing traditional internal control processes and compliance mechanisms.

Strategy risks are ones that a business intentionally accepts in order to potentially generate higher returns. Such risks are easily identifiable and can be managed with the help of a risk management framework that enables a business to define tolerance levels and reduce the likelihood that the risk materializes.

External risks arise from events outside an organization and are typically beyond a company's control. They include natural disasters and geopolitical and macroeconomic shifts. A company cannot prevent such risks from occurring and, consequently, needs to focus on the identification of such risks and related mitigating measures.

This is precisely the focus of the CSA question on “emerging risks”. Introduced in 2015, this question focuses on external risks, characterized as distant threats that may cause damage to a company in the long term. Emerging risks may not be quantifiable and

may contain a high degree of uncertainty. They are unlikely to have any significant impact on a company's operations or profitability for the next three to five years but, potentially, may have begun to impact the company today.

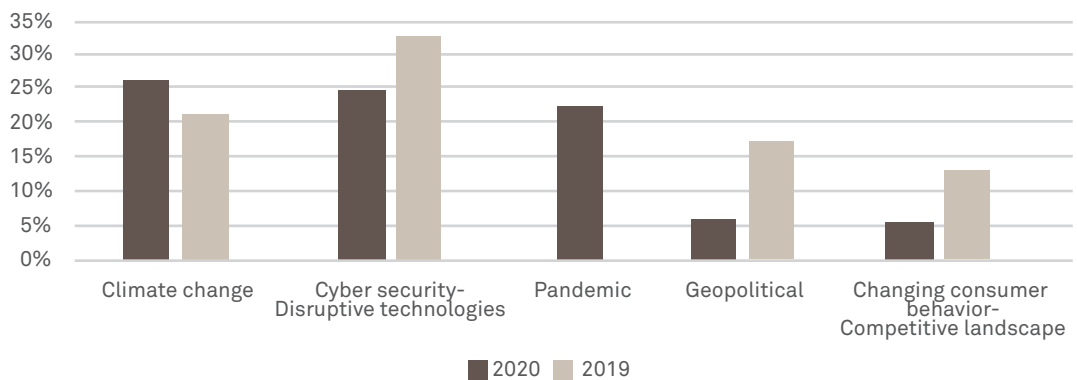
In order to more precisely define how companies are expected to respond to the CSA question, the following criteria have been outlined to characterize an emerging risk. The risk:

- Has to be new or increasing in significance.
- Has to be long term, i.e., its potential impact on a company's business should span more than three years.
- Needs to potentially have a significant impact on a company, requiring it to adapt its strategy and business model.
- Needs to be an external risk stemming from, for example, natural, geopolitical, technological, societal, and/or macroeconomic factors.
- Should be specific, impacting a company, as opposed to an entire industry.

“While nearly all companies named COVID-19 as a major preoccupation in their 2019 reporting, only a few have been able to describe it as a long-term risk with potential long-term impacts on their business.”

By means of these criteria, we have reviewed the emerging risk categories reported by companies in the CSA. Climate change and technology remain the two most frequently cited emerging risks categories in 2020, representing 26%, respectively 25%, of all emerging risks fulfilling the criteria listed above. Figure 1 below displays the emerging risk categories most frequently mentioned by companies.

Figure 1: Emerging Risk Categories



Source: CSA Survey Results, as of November 23, 2020, S&P Global, for illustrative purposes only.



While most companies report risks that they consider to be emerging, only 12% were able to present at least one emerging risk that fulfilled the criteria listed above. This, unfortunately, illustrates the fact that a large majority of companies mainly focus on risks that have already materialized, and struggle to appropriately identify and describe external emerging risks that might have a significant impact on their business in the long term.

The fact that no company in the CSA mentioned pandemic as an emerging risk in 2019 illustrates that, until a risk materializes, a company is unlikely to consider it as an emerging risk and describe its potential long-term impact.

Interestingly, pandemic appears as a new emerging risk category in 2020. While nearly all companies named COVID-19 as a major preoccupation in their 2019 reporting, only a few have been able to describe it as a long-term risk with potential long-term impacts on their business using, for example, tools such as a scenario analysis to evaluate possible future situations.

The fact that no company in the CSA mentioned pandemic as an emerging risk in 2019 illustrates that, until a risk materializes, a company is unlikely to consider it as an emerging risk and describe its potential long-term impact. Such emerging risks are usually not disclosed in traditional financial reporting, or cited as part of a long list of external factors that might impact a company's performance. However, in line with the increased expectations on companies related to sustainability disclosure, there is a growing demand from investors for companies to identify emerging risks early on and report on such topics as part of a holistic risk management approach.

In line with these findings, the U.S. Securities and Exchange Commission (SEC) is currently pushing for better disclosure of risks related to COVID-19. It recognizes that it may be difficult to assess or predict the effects of COVID-19 on individual companies, and that the actual impact will depend on many factors beyond a company's control. It stresses, however, that the effects COVID-19 has on a company, what management expects its future impact will be, how management is responding to evolving events, and how it is planning for COVID-19-related uncertainties can be material to investment and voting decisions.⁴

⁴ "Coronavirus (COVID-19)"; SEC, March 25, 2020, www.sec.gov/corpfm/coronavirus-covid-19.

An effective risk culture facilitates the identification of emerging risks

The early identification of emerging risks enables companies to be better prepared for their materialization. A number of elements may facilitate this early identification, including: detailed scenario analysis for non-traditional external risk events, frequent communication with internal and external stakeholders, an improved tracking of frequent (but small) operational failures, and a strong risk culture. The latter element is the focus of this section.

The early identification of emerging risks enables companies to be better prepared for their materialization.

While an effective risk management structure focusing on compliance and the implementation of risk control mechanisms is essential, several high-profile disasters, such as the Tepco's Fukushima nuclear catastrophe⁵, have demonstrated the need for a strong risk culture throughout an organization. This can help underscore the importance of risk for all employees and that risks should be reported directly to the highest governing body of a company.

According to R.S Kaplan and A. Mikes⁶, having a broad risk management function independent from strategy but reporting directly to the board is what differentiated the banks that survived the 2008-2009 financial crisis from those that failed. "The failed companies had relegated risk management to a compliance function; their risk managers had limited access to senior management and their boards of directors. Further, executives routinely ignored risk managers' warnings about highly-leveraged and concentrated positions. By contrast, Goldman Sachs and JPMorgan Chase, two firms that weathered the financial crisis well, had strong internal risk management functions and leadership teams that understood and managed the companies' multiple risk exposures."

in line with this finding, we analyzed the responses received for the CSA question "risk governance". This question identifies whether the highest-ranking person with dedicated risk management responsibility on an operational level is either reporting to the executive committee or to the board of directors. With only 51% of companies having a direct reporting line to the highest governing body of the company, the conditions necessary to avoid large disasters appear to be unmet.

In addition to having a strong risk management function reporting directly to the highest governing body, the following elements are essential for a strong risk culture:

- Clear directions from the board of directors and senior management related to risk identification and management.
- Clear accountability and ownership for specific risks at all levels.
- Transparent and clear communication throughout the organization, including group-wide risk training.
- Measures to enable all employees to report potential risks and incidents.
- Rewards for appropriate risk behaviors and sanctions for inappropriate behaviors.
- Inclusion of a diversity of perspectives and values to show that new, unconventional ideas and opinions are considered.

⁵"Fukushima Daiichi Accident", World Nuclear Association, May 2020, www.world-nuclear.org/information-library/safety-and-security/safety-of-plants/fukushima-daiichi-accident.aspx.

⁶"Managing Risks: A New Framework", R. and A Mikes, Harvard Business Review, June 2012, <https://hbr.org/2012/06/managing-risks-a-new-framework>.

The CSA question “risk culture” encompasses most of the above elements, as displayed in Table 1 below. The figures indicate the percentage of companies that apply each of the elements included in the risk culture question. The results are divided into two categories: The first category contains all

companies assessed in the 2020 CSA as of November 2020, including those that actively participated in the CSA survey and those that did not actively participate and were assessed based on public information only. The second category includes only companies that actively participated in the CSA survey.

Table 1: Companies Applying Risk Culture Elements

	Structured feedback process on risk management practices	Inclusion of risk criteria in human resources review	Risk metrics in financial incentives	Risk metrics in financial incentives for senior management	Inclusion of risk criteria in product development	Group-wide risk training	Whistleblowing mechanisms
2020- All companies	22%	18%	16%	20%	25%	26%	27%
2020- participating companies ⁷	55%	41%	38%	43%	59%	61%	66%

Source: CSA Survey Results, as of as of November 23, 2020, S&P Global, for illustrative purposes only.

It appears that companies find it most difficult to incentivize employees to make the right decisions about risks. Risk culture elements that are the least frequently implemented are the inclusion of risk metrics in financial incentives for line managers and the inclusion of risk criteria in the human resources review. In contrast, group-wide risk training and the implementation of measures to report incidents are applied most often. Companies are more inclined to have policies and processes in place, but struggle to implement incentives

to make sure that those policies and processes are applied.

In order to demonstrate that a weak risk culture is a major obstacle for companies to identify emerging risks and adequately manage them once they materialize, we have examined the relationship between an effective risk culture, evaluated through the CSA score for the question risk culture, and the ability of companies to identify emerging risks.

Table 2: Risk Culture Performance And Reporting Of Emerging Risks

Score for the risk culture question (out of 100)	Share of actively participating companies reporting at least one acceptable* emerging risk	Share of all companies reporting at least one emerging risk
> 80	43%	42%
between 1 and 79	19%	16%
0	8%	2%

*Acceptable means met our definition outlined earlier.

Source: CSA Survey Results, as of as of November 23, 2020, S&P Global, for illustrative purposes only.

⁷ The significant difference between the general results (2020 – All companies) and the results for participating companies (2020 – participating companies) can be explained by the fact that this question allows for private information, therefore giving an advantage to companies that actively participate in the CSA.

An effective risk culture enables better management of controversies

The final step of our analysis examines whether a strong risk culture, measured through the score for the risk culture question in the CSA, reduces the probability of a company being subject to controversial issues.

A strong risk culture enables companies to be better prepared for controversies and take appropriate timely measures to mitigate the impact of the controversy and avoid its reoccurrence in the future.

Controversial issues are realized risks that result in financial and reputational damage for companies. Our analysis of company controversies is carried out through the MSA. The MSA process is used to identify controversies and damages that are linked to poor corporate policies, structures, and practices on a range of sustainability issues. When an MSA case is created, it is linked to the criteria in which the company's policies, processes, or mechanisms failed, such as business ethics, corporate governance, human rights, environmental management, and/or risk and crisis management.

In 2020, 86 companies were subject to an MSA case that negatively impacted the criterion risk and crisis management, indicating that the controversy was linked to a failure in the risk management practices of the company. Table 3 below shows that, out of these 86 companies, 62% received a low score for the question risk culture. In addition, just under three quarters (72%) of all companies received a low score for the risk culture question. Contrary to our expectations, these figures indicate that companies with a low score for this question are less likely to have an MSA case related to their risk management practices. However, when comparing how a company reacted to an MSA case, measured by its ability to take appropriate measures once the case has occurred, a company with a high risk culture score is nearly three times more likely to take appropriate measures than a company with a low score.

We subsequently considered companies impacted by MSA cases that affected the criterion corporate governance on top of the risk and crisis management criterion, meaning that the highest decision body of the company was directly implicated in the wrongdoing of the company. Examples of such cases include the involvement of Japan Post Holdings in the sale of fraudulent insurance products, in which case the company's executives knew about the issue

Table 3: MSA Cases And Risk Culture Performance

Number of companies	... with low score for risk culture (< 40)	...with low score for risk culture and appropriate measures taken in response to an MSA case	... with high score for risk culture (>40)	... with high score for risk culture and appropriate measures taken in response to an MSA case
All companies	2,459 (72%)			
86 companies with an MSA case impacting risk and crisis management only	53 (62%)	7 of 53 (13%)	33 (38%)	13 of 33 (39%)
27 companies with an MSA case impacting risk and crisis management and corporate governance	20 (74%)	3 of 20 (15%)	7 (26%)	2 of 7 (29%)

Source: CSA Survey Results, as of November 23, 2020 S&P Global, for illustrative purposes only.

but failed to take action until a year later⁸, or the accounting fraud and market manipulation that occurred by Wirecard and led to the company's bankruptcy and the arrest of the CEO⁹. The probability of such cases occurring is significantly higher for companies with a low score for risk culture, with 74% being affected compared to 62% for cases that only impacted the criterion risk and crisis management.

The results above illustrate that an MSA case that impacts the criterion risk and crisis management, but not corporate governance, might indicate an issue in the operational risk control procedures of the company. Such cases are less dependent on the risk culture of a company and more closely linked to risk compliance issues. However, when an MSA case impacts both risk and crisis management and corporate governance, meaning the board of directors and/or the CEO is involved in the controversy, a company is significantly more likely to be subject to such a case if it has a weak risk culture. This would indicate that there is not only a risk compliance issue, but a more profound problem related to the company's risk culture.

Companies will need to manage an increasing number of interconnected emerging risks and will have to rethink their risk culture.

In all cases though, the figures demonstrate that a strong risk culture enables companies to be better prepared for controversies and take appropriate timely measures to mitigate the impact of the controversy and avoid its reoccurrence in the future.

Conclusion and Outlook

The current unprecedented crisis is setting very high expectations for companies. It requires them to rethink their strategy, operations, and culture, with a particular focus on risk management practices.

With the help of the CSA data, this article analyzed whether the preconditions are being met to enable companies to face the impact of disruptive emerging risks. The data has first shown that companies are struggling to report on emerging risks. However, companies reporting on emerging risks is an essential source of information for investors who are paying increasing attention to such data in order to make investment decisions. As illustrated by Reprisk in the next section, a robust ESG dataset is key for investors to effectively manage risk and be better prepared for unforeseen risk events.

A strong risk culture facilitates the identification of emerging risks and companies' preparedness for the materialization of such distant threats. The CSA data has also revealed that a majority of companies still lack a strong risk culture. An effective and inclusive risk culture, with the top management rewarding employees for appropriate risk behaviors and empowering employees with diverse values to report potential risks, enables less traditional risks to be identified. It also supports more flexible responses to risk events. In the guest commentaries below, Leo Tilman gives more substance to this topic and explains how business leaders need to demonstrate agility to navigate through uncertain conditions.

According to the WEF's COVID-19 Risks Outlook, the current crisis offers a unique opportunity to shape a better world: "As economies restart, there is an opportunity to embed greater societal equality and sustainability into the recovery, accelerating rather than delaying progress towards the 2030 Sustainable Development Goals and unleashing a new era of prosperity".

The traditional global risks, such as climate change or technological disruptions, will not disappear. On the contrary, they have been amplified by the current pandemic. Companies will need to manage an increasing number of interconnected emerging risks and will have to rethink their culture to enable more agility, anticipation, and innovation to help fulfill their role in shaping a more sustainable future. ■

⁸ "77 Japan Post workers rebuked for improper insurance sales", The Japan Times, April 28, 2020.

⁹ "Wirecard, Reeling From Accounting Scandal, Files for Insolvency", The New York Times, June 25, 2020.

Guest Commentaries

Risk lies at the very heart of every ESG assessment. Like seasoned sailors, Leo Tilman and General Chuck Jacoby help us proactively navigate the unknown seas of radical disruption and uncertainty with a will to win the race. In turn, Alexandra Mihailescu Cichon shows us how to dexterously unmask the hidden risks associated with COVID-19 and the rise of the S in ESG for 2020. Read their guest commentaries below.

How Leaders Can Navigate the Unknown Deliberately and Decisively

Success Rests on the Ability to Penetrate Uncertainty and Dynamically Switch between Defense and Offense

Executive Summary

- Our organizations face an environment of radical disruption and uncertainty, as evidenced by the ongoing COVID pandemic, social change, dramatic shifts in the business and economic landscapes, and geopolitical conflict.
- To successfully navigate a volatile and unpredictable environment, defensive adaptations must give way to agility grounded in risk intelligence, preparedness, and the will to win.
- Uncertainty must be explicitly and proactively managed alongside financial, strategic, operational, and cybersecurity risks.

Overarching Action Items:

1. Appropriately resource the fight for risk intelligence and “what if, what next” preparedness – as spearheaded by senior leaders and involving entire organizations.
2. Aggregate risks and create contingency plans across a wide range of scenarios.
3. Assess the relevant areas of uncertainty spanning biosphere, geopolitics, economics, and technology; create contingency plans and action triggers.
4. Deepen the culture of honesty, empowerment, and trust, so that the entire organization can detect, assess, and respond to threats and opportunities in real time.
5. Address the gaps in capabilities and cultures necessary for strategic and tactical agility; embed new skills and mindsets into leadership development.

2020: Fog, Friction, and the Edge of Chaos

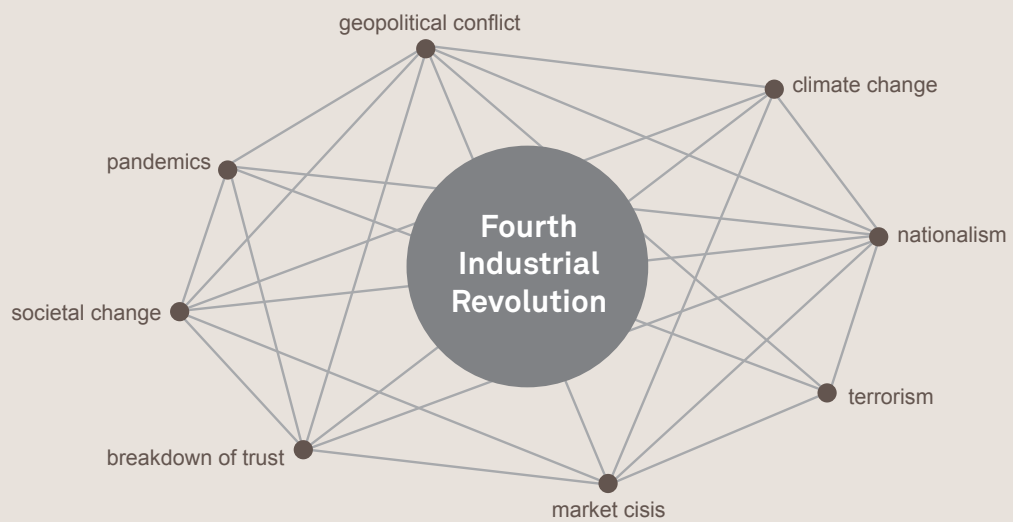
In addition to an enormous human and public health toll, the Covid-19 pandemic set off a global recession that encompassed a decline in global trade and business investment, massive job losses, disruption of production and supply chains, and plunging consumer sentiment and activity. This happened with unprecedented speed, as aggressive social distancing policies created simultaneous shocks to supply and demand. Historical comparisons date back to 1918 Flu Pandemic, the Great Depression, WWII, and the global financial crisis of 2008-09, but we have never seen something quite like this on a global scale before.

During the early stages of the pandemic, many predictions by government officials and business leaders painted an optimistic picture, forecasting a deep but fairly short recession followed by a quick “V-shape” recovery. As always, the problem with such forecasts and popular narratives is that they were based on limited empirical evidence and many assumptions about the future. Even more importantly, they failed to acknowledge the fundamental nature of dynamic competitive environments that, in the words of Carl von Clausewitz, are a realm of overarching fog (informational ambiguity) and friction (uncertainty and the role of chance).

At the start of the pandemic, we encouraged our clients to imagine the sheer scale and complexity of the following simultaneous endeavors: 1) managing the uncertain trajectory of the pandemic; 2) promulgating, adapting, and enforcing adherence to social distancing guidelines; 3) sequentially restarting the global economy and adjusting course, as new information arrives; 4) navigating the economic and financial fallout within and across national boundaries; and 5) preventing, or at least mitigating social unrest. All of this needed to be executed effectively, even though COVID-19 cures and vaccines would not be widely available for months, and a national



Figure 1: Global Operating Environment



Source: Tilman & Company, Inc, 2020

testing and disease surveillance systems for rapid diagnosis and isolation of newly infected people and their contacts were still in the early stages of development.

In other words, consistent agility was required from the public and private sectors working together to execute in a steady and even-handed manner, while overcoming unexpected challenges and capitalizing on emerging opportunities. The events that followed demonstrated significant limitations in capabilities, processes, cultures, and leadership practices of many players in the public and private sectors.

Takeaway: Effective navigation of environments such as this requires deep environmental knowledge and risk intelligence to enable governments, companies, and investors to detect and assess environmental shifts and signals in real time. The fog and friction of dynamic competitive environments must be explicitly taken into account.

Action Item: In today's world, senior leaders must resource and spearhead a concerted fight for risk intelligence. The entire organization must be primed with respect to the information vital for decision making. An environment where team members have the courage to bear bad news, question conventional wisdom, and voice dissent must be deliberately created and consistently nurtured.

Risk Assessment and Contingency Planning (Management of "Known Unknowns")

Some years ago, when we began working on our recent book, *Agility*, the attention of boards and executives was centered on the accelerating change and disruption of the Fourth Industrial revolution. We were convinced that an even broader lens was required. In addition to technological, business, and social trends, for example, we believed that a broader perspective and a deep

understanding of the inherent nature of competitive environments must be explicitly reflected in how we define and operationalize the organizational capacity to effectively navigate disruption, exploit uncertainty, and stay on the offense.

For executives grappling with the near-term upheavals – all while maintaining a focus on longer-term threats and opportunities – the assessment and planning around measurable risks (“known unknowns”) is an important first step. Organizations must systematically assess and aggregate financial, business, operational, and cybersecurity risks.

Takeaway: Due to overly optimistic forecasts regarding a quick recession and “V-shape recovery and as a matter of usual practices, companies and investors discovered that their planning and risk management processes focus on an overly narrow range of economic and market scenarios.

Action Items:

- Foster risk intelligence and preparedness by visualizing, assessing, and planning for a diverse set of scenarios, including those of extreme nature. For example, scenarios that we advocated to companies and investors at the start of the pandemic included:
- Prolonged economic recession and a gradual recovery. “The intractable task of restarting real economies amidst the pandemic will prove more complex than expected. Fog and friction may lead to new outbreaks, and other disruptions may deepen the recession and slow the recovery down.”
- Defaults-driven financial crisis. “Despite aggressive actions by governments and central banks, a deep recession leads to a rise in credit defaults, triggering a systemic crisis.”
- Stagflation. “Unprecedented actions by central banks avert a solvency crisis, but lead to a sharp rise in inflation. Economic weakness prevents central banks from raising interest rates.”
- Financial ripple-effects. “Wide-spread forbearance of mortgage and student loan payments (and rents) creates significant ripple effects across the structured product markets, the balance sheets of financial institutions, and the portfolios of institutional investors. This has negative long-term impacts on credit cultures, financial markets, and economies.”

Navigating Uncertainty is Different than Managing Risk

In Agility, we describe a fundamental difference between risk (measurable “known unknowns”) and uncertainty (where future outcomes and their likelihoods are truly unknown). In the context of this pandemic, different types of uncertainties have arisen, not only affecting the path of the recession and the recovery, but also changing our lifestyles, professional practices, and beliefs on an unprecedented scale. In addition to assessing risk, areas of uncertainty that we discussed with our clients at the start of the pandemic included:

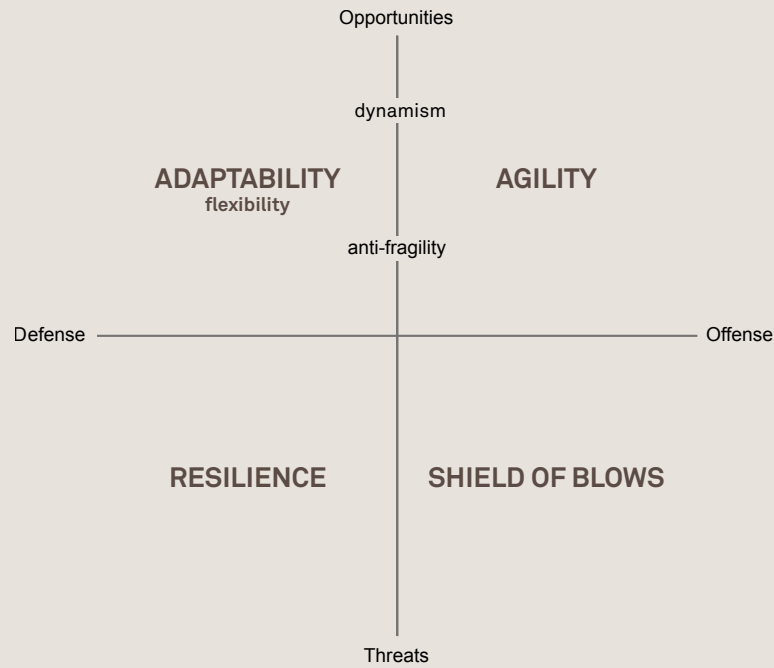
- Lasting psychological and behavioral impact on individuals and societies. Change in social norms (e.g., social distancing); consumer behaviors (e.g., e-commerce, education) and risk aversion (e.g., consumer spending, savings rates; business hiring and investment).
- The future of work and learning. Greater prevalence of remote work and learning significantly impacts corporate operations, cultures, and productivity. These changes have critical implications for technology, including infrastructure (e.g., broadband and cybersecurity); commercial real estate; higher education; and state and local finance.
- Fourth Industrial Revolution. The pandemic is impacting secular trends, such as e-commerce, digital finance, telemedicine, and jobs displacement by AI and robotization, accelerating some trends and changing the trajectory of others.
- Supply Chains. As the vulnerabilities of supply chains have become apparent, governments and companies fundamentally rethink the cost/resilience tradeoffs and the interdependencies/vulnerabilities created by globalization.
- Nationalism. The importance of the nation-state as an evolutionary unit is likely to increase, with strong implications for international trade and cooperation. In addition to supply chains, the emerging “vaccine nationalism” is a case in point.
- Populism. The rise of populism is intensifying as the pandemic and the recession disproportionately hurt the disadvantaged, deepen inequality, and burden future generations by the sharp rise in national debts.

Importantly, our organizations are facing these risks and uncertainties in a geopolitical setting of persistent conflict. The volatility and unpredictability of operating environments is amplified by global actors aggressively vying for economic, geographical, and moral spheres of influence.

Takeaway: To be successful, companies and investors must learn how to assess and manage uncertainty systematically and proactively within strategy and ERM processes.

Action Item: Identify the areas of uncertainty – across the biosphere, geopolitics, economics, and technology – that may significantly affect the organization. Envision a wide range of future scenarios and assess the vulnerabilities, consequences, and potential actions – without assigning likelihoods to unknowable future events or excessively relying on predictions of the future. As an integral part of this process, senior leaders must be willing to iterate with their teams to identify assessment and planning priorities and define the triggers for defensive and offensive actions. The development of firm-wide thinking and awareness will foster agility by enhancing situational awareness and trust, recognizing change, and supporting decisive execution.

Figure 2: Agility: An Overarching Quality



Source: Tilman & Company, Inc, 2020

From Defensive Adaptation to Agility

In order to navigate a volatile and unpredictable environment successfully, defensive adaptations must give way to agility: the organizational capacity to effectively detect, assess, and respond to threats and opportunities in ways that are purposeful, decisive, and grounded in the will to win. This is what will allow our organizations to effectively navigate disruption, turn the environment into a critical supporter of their vision, and dominate events, instead of being dominated by them.



Leo Tilman
Founder and CEO
Tilman & Company



General Chuck Jacoby
(US Army, Ret.)
Executive Vice Chairman
Tilman & Company

Unmasked: how COVID-19 strengthens ESG as risk management tool for investors

Now more than ever, investors must recognize the importance of risk management and how ESG is a very effective tool to manage risks. ESG integration done the right way can prevent and mitigate exposure to hidden risks while also enabling quick reactions in case risks are revealed by unforeseen events like COVID-19. Such events can unmask ESG risks, which can lead to financial, reputational, and compliance issues for companies and investors alike.

COVID-19 spotlights gaps in investors' ESG practices

The disruption of COVID-19 revealed ESG risks related to companies and sectors across the world, with a particular rise of 'S' ESG issues; employee, product, and consumer safety were the overarching themes in related ESG risk incidents. Yet, the pandemic was not the only agent of ESG risk acceleration and illumination in 2020. Social unrest over racial injustice in the U.S. and worldwide and massive unemployment and economic strain brought the 'S' in ESG to the forefront of investor consideration.

Outbreaks in warehouses, factories, and distribution centers revealed worker exploitation and occupational health and safety hazards, and sparked conversations between employers and employees around job retention and fair wages. In the travel and leisure sector, cruise lines and airlines faced criticism of mishandling employee and passenger safety onboard. And in the healthcare sector, many health service providers faced allegations of negligence after failures to prevent a disproportionate amount of COVID-19 deaths.

These risks proved to be material, with reputational, legal, and financial ramifications for the companies and investors implicated. Many of these ESG and business conduct risks pre-dated the outbreak of COVID-19 and were revealed by the disruption caused by the pandemic. We believe there was an opportunity to identify and mitigate some of those risks before they caused material loss.

So, what can investors do to be better prepared as we head into a future with more possibility for unforeseen risk?

ESG as an effective risk management tool

The answer: risk management through robust and dynamic ESG integration. This is not an entirely new idea – in mid-2020, 50% of RepRisk clients polled said that COVID-19 strengthened ESG views within their firm. Now more than ever, investors and other financial industry professionals must recognize the link between ESG and risk management. But, there is a twist; in order for ESG to be effective as a risk management tool, investors must consider a number of factors:

- Going beyond company self-disclosures by supplementing with reliable third-party data: look at what the world says about a company in addition to what a company says about itself. Sources on the ground can provide a reality check for how companies conduct their business around the world, and can illuminate hidden risks.

- Multi-dimensional analysis, as opposed to a single rating, leads to a better, comprehensive assessment of material ESG risks.
- Dynamic, timely, and actionable data instead of static data to paint the full picture of a company's past and current ESG performance, and serve as an indication for how it will likely handle future ESG matters – like those brought to light by an unforeseen crisis.
- Data generated by rules-based and consistent methodologies that are built around ESG frameworks such as the UNGC, SASB, and the SDGs enable investors to have reliable, high-quality, and time-tested data at hand.
- Rigorous, industry-leading ESG research like the S&P Global Corporate Sustainability Assessment, which employs the aforementioned factors through its partnership with RepRisk and proactively engages companies on sustainability topics to help them manage long-term risks – allows investors identify areas of strength or opportunity for companies in their portfolios.

It's time to look under the hood

Disruptive events that shape lives and markets worldwide will continue to appear. 2020 may have been the year of the 'S' in ESG, but in 2021 the 'E' in ESG, with climate change often being the figurehead of ESG, could gain traction again – regulatory initiatives such as the EU taxonomy and the outcome of the US election give reason to believe so.

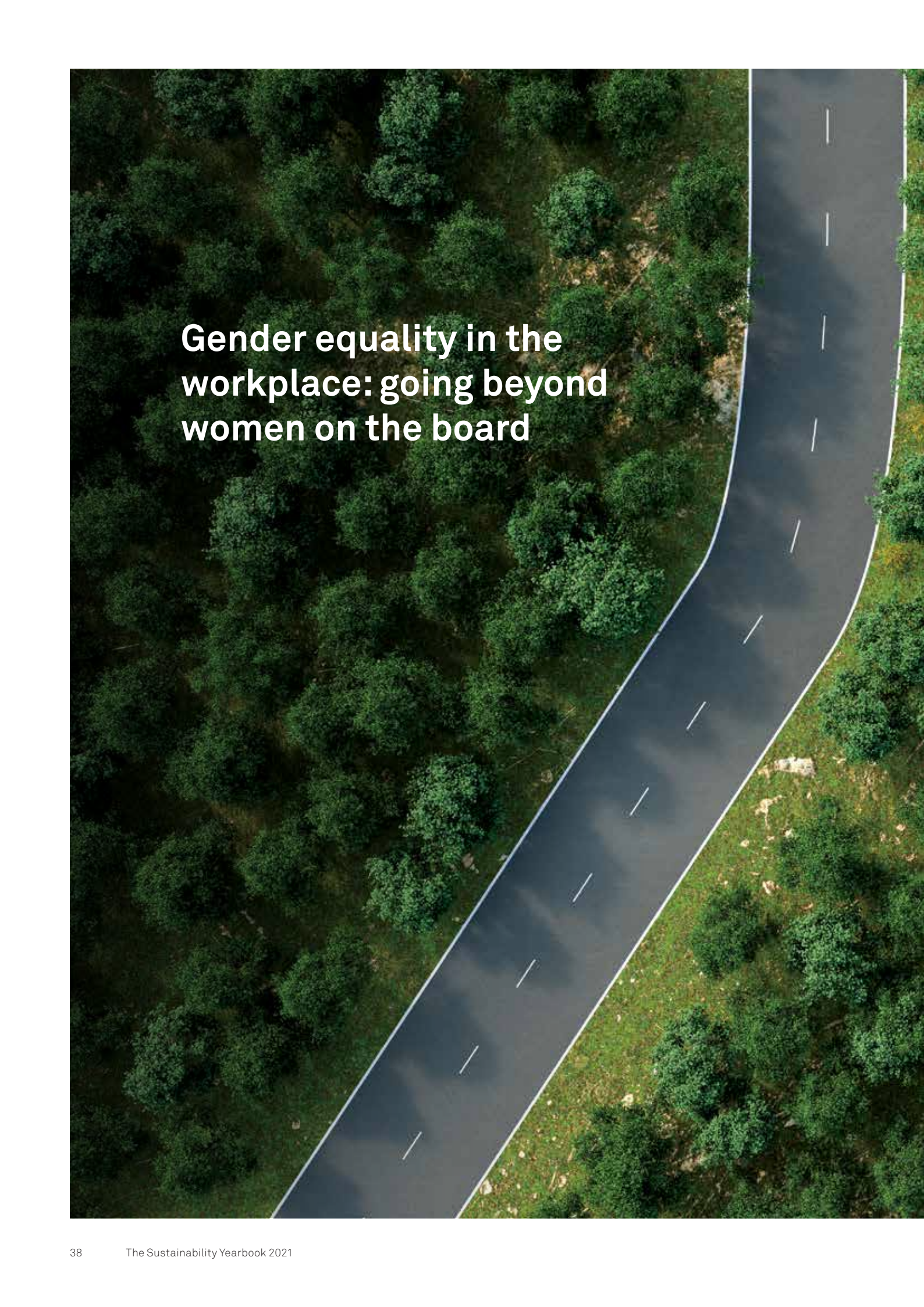
However, we believe ESG factors are not one-dimensional – they intersect and compound upon themselves. A recent study by Harvard illustrated the effect of climate change on viruses, suggesting a higher chance for diseases to cross the species barrier as COVID-19 did – as global temperatures rise and animals migrate towards the poles to stay cool, coming into closer contact. That's why it's important to look at the bigger picture when talking about ESG and we encourage investors to take a holistic approach to their ESG analysis.

Investors should take a similarly holistic approach to their data and processes – engaging not only the companies in their portfolio, but also their data providers. Meaningful ESG integration starts with a robust dataset – we encourage investors to kick the tires and ask the hard questions of their data provider to ensure it is effective for risk management and a reliable foundation for sound investment decisions.

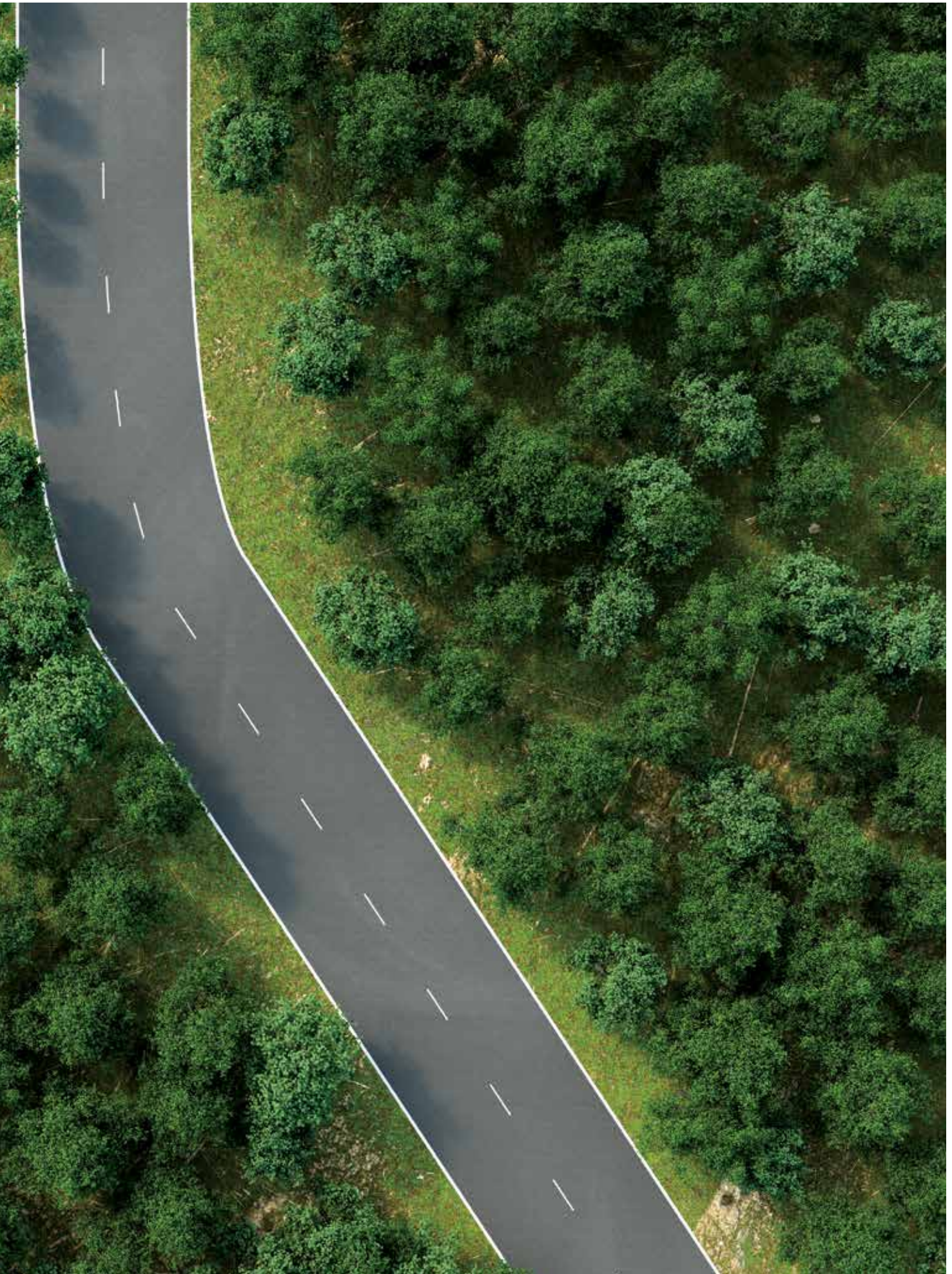
Now is the time to double down on ESG. The pandemic continues to fundamentally change business operations as we know them, and ESG data can serve as a navigational tool to implement that change.



Alexandra Mihalescu Cichon
Executive Vice President Sales and Marketing
Reprisk

An aerial photograph of a two-lane asphalt road that curves through a dense, lush green forest. The road is dark grey with white dashed lines in the center and solid white lines on the edges. The surrounding trees are vibrant green, and the overall scene is captured from a high angle, looking down at the road as it winds through the woods.

Gender equality in the workplace: going beyond women on the board



Where are we at?

According to the Global Gender Gap Report 2020¹, it will take another 100 years to achieve gender equality based on the current rate of progress. This prediction has been widely used as a shock therapy to push governments, NGOs, associations, investors and companies into action. In the face of the Covid-19 pandemic and economic crisis, efforts will have to be doubled if we are to avoid losing another 10 years to achieve gender equality². Based on past experience, economic slowdowns not only disproportionately affect women, but also trigger gender equality topics to slip down governmental and corporate agendas. Women represent 39% of the global workforce but accounted for 54% of job losses as of May 2020³. Furthermore, women are over-represented in sectors which are most heavily hit by the pandemic, such as hospitality or the food services industries, further exacerbating inequalities. These inequalities also disproportionately affect certain groups of women, depending on the intersections of gender with race, ethnicity, religion, class, ability, sexuality and other identity markers.

In 2020, the discourse has shifted significantly from a focus on gender diversity towards diversity and inclusion more generally. However, the lack of data on other diversity

indicators and how they intersect with gender has made it difficult for companies and investors to measure their performance and consistently identify gaps in the domain. As a result, most large-scale corporate and financial initiatives tend to still focus on mainstream gender metrics.

Financial initiatives

Financial initiatives are worth highlighting, as they demonstrate the development and progress made towards gender equality. In 2019, total publicly available equity and fixed-income offerings in gender lens investing reached over USD 2.4 billion in asset-under-management⁴. The push to integrate gender diversity in investment criteria has increased over the years: at least 15 new publicly traded gender lens equity funds have been launched since 2015. In 2017, Morgan Stanley encouraged analysts to include gender scores in their investments, while in 2018 the State Street Global Advisors announced that it would vote against all-male boards in the US, UK and Australia as of 2020. In 2018, BlackRock announced that it expected the companies it invested in to have at least two women on the board and urged the Russell 1000 companies with fewer than that to act on their lack of diversity. This had a direct

¹ World Economic Forum (2020), Global Gender Gap Report 2020.

² Taub, A. (26 September 2020) Pandemic Will 'Take Our Women 10 Years Back' in the Workplace. The New York Times.

³ Mahajan, D.; White, O.; Madgavkar, A. & Krishnan, M. (16 September 2020) Don't Let the Pandemic Set Back Gender Equality. Harvard Business Review.

⁴ Smucker, M. (24 June 2019) How Are Gender Lens Funds Performing? CFA Institute.



Marie Froehlicher

ESG Specialist
S&P Global



Lotte Knuckles Griek

Head of Corporate
Sustainability Assessments
S&P Global

Women represent 39% of the global workforce but accounted for 54% of job losses as of May 2020.

effect, as the number of companies with fewer than two women on the board dropped by 14% within five months⁵. In November 2019, Fox Gestion d'Actifs, a subsidiary of Groupe Premium, launched its Valeurs Femines Global Fund, which invests only in publicly-listed companies whose CEOs are women⁶. Although this criterion poses obvious challenges, as for example in 2020 women made up nearly half of the employees of S&P 500 companies but only 6% of their CEOs⁷, it is the first such fund and makes a strong case for more venture capital investment in women entrepreneurs.

The outlook for gender lens investing is geared to move beyond its current focus on large-cap companies and developed markets, to also set expectations on small-cap companies and in developing markets⁸. For example, a report published in 2019 looking into 61 companies listed on the Nairobi Securities Exchange found that 12% of these companies had women CEO's, compared to only 7% of FTSE 100 companies and 7% of Fortune 500 companies⁹. Including these companies in gender lens investing would therefore be an interesting perspective for the development of these funds.

Women on the board

Considerable attention has been directed towards the number of women at board level, and to a lesser extent, in executive positions. This has led to positive developments, as

we see that the percentage of women on boards has increased across all regions over recent years. The following flow charts show the proportion of companies according to the percentage of women on their board, and how the trend evolves over time. Each flow represents the percentage of assessed companies which moved between brackets from one year to the next.

What caused this increase in the percentage of women on the board, and how can it drive change within corporations more broadly? The first part of this article 'More women on boards, so what?' will explore some of the trends and rationales around focusing on women on the board. The second part 'Moving up the ladder' will investigate the trends which mark other diversity indicators, namely the percentage of women at different levels of responsibility and equal remuneration. The third part 'Care responsibilities in times of a pandemic' will then focus on the importance of family-care policies, which can remove some of the barriers women face in their career development.

⁵White, L. & Dholakia, G. (17 September 2018). Ranks of US gender-diverse boards grow, but less than 25% of directors are women. S&P Global.

⁶Lemosof, M. (29 November 2019). La Fox lance le fonds Valeurs Féminines Global. Gestion de Fortunes.

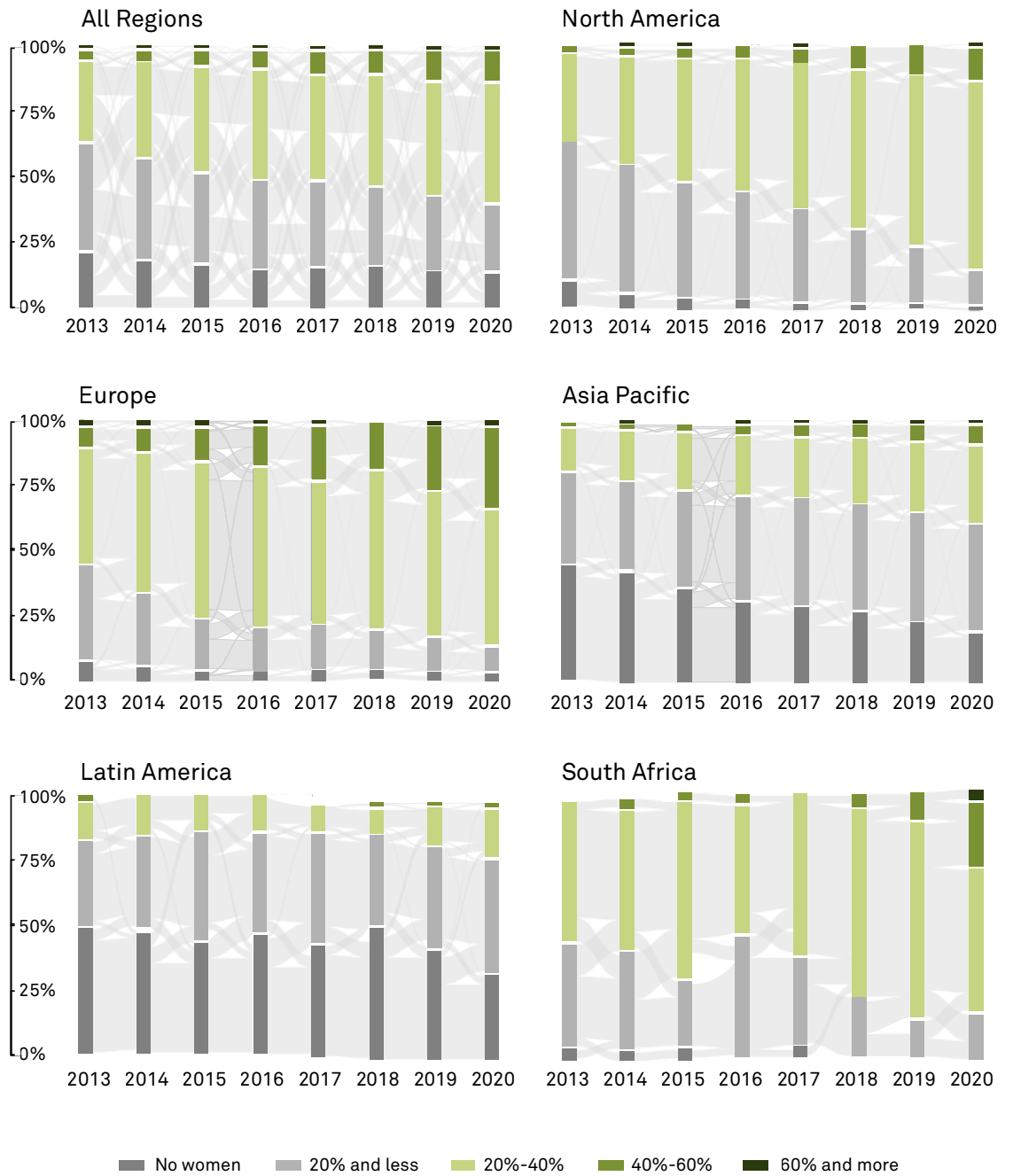
⁷Catalyst (15 January 2020). Pyramid: Women in S&P 500 Companies.

⁸Smucker, M. (26 May 2020). Gender Lens Investing: Where to from Here? CFA Institute.

⁹Equileap (2019). Gender Equality in Kenya: Assessing 60 leading companies on workplace equality.

Methodology: Every year, the largest 3,500 companies in the world are invited to participate in the Corporate Sustainability Assessment, for potential inclusion in the Dow Jones Sustainability Indices. The graphs in this article present the data collected through the assessment of these companies over the years.

Proportion of companies according to the percentage of women on their board



Methodology: Our universe of assessed companies in Africa is almost exclusively composed of South African companies, which is why we single out South Africa when analysing regional trends.

Women on boards: bound to increase?

Regulatory frameworks

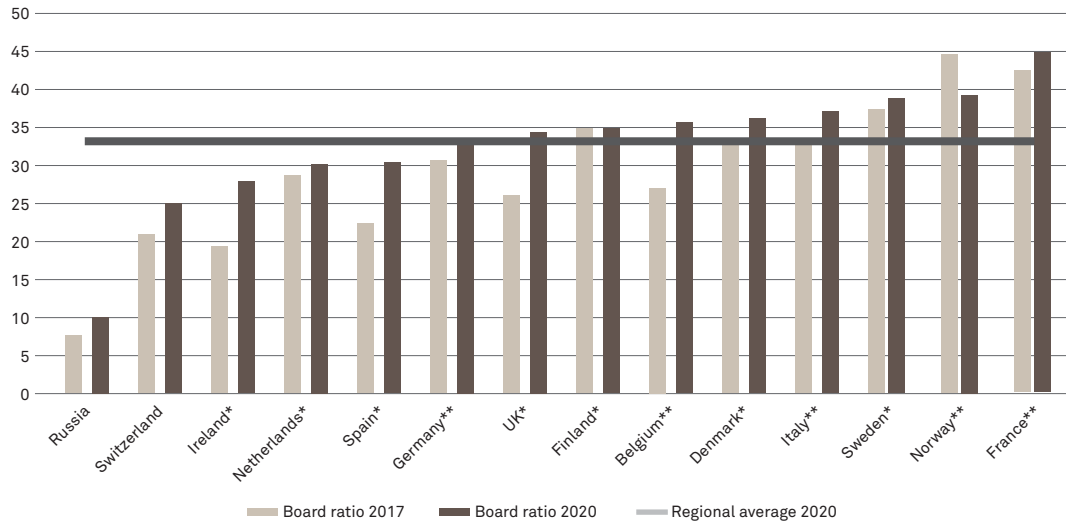
Regulatory frameworks have been a driving force towards increasing gender diversity within companies. The European Union has been the most proactive in this domain, issuing a proposal for a directive on improving the gender balance on corporate boards as early as 2012¹⁰. As a result, six EU member-states have adopted binding quotas for gender board diversity: Belgium, Italy, Portugal, Germany, Austria and France. Another nine states have resorted to soft and non-binding quotas: Denmark, Ireland, Spain, Luxembourg, the Netherlands, Poland, Finland, Slovenia and Sweden. The UK has also put in place soft quotas. Greece, which up until then had a soft quota in place, announced the adoption of a 25% binding quota for the end of 2020. Beyond Europe, India issued the Companies Bill in 2013 which requires public companies to have at least one woman director. Malaysia adopted a policy in 2011 for companies with more than 250 employees to have boards that are at least 30% women by 2016. Brazil is still looking into a quota for state and mixed-cap companies, which would require them to have boards that are at least 30% women by 2022. In the US, California adopted quotas in 2018 for publicly traded companies, to be reached by 2019 or 2021 depending on the size of the board. Other countries have also adopted binding and non-binding quotas, as summarised in the table below:

Country	Type of quota	Threshold	Compliance year
Australia	Non-binding*	30%	2018
Austria	Binding**	30%	2018
Belgium	Binding**	33%	2018
Brazil	Binding**	30%	2022
California (US)	Binding**	2 women (for 5-person board)	2019
		3 women (for 7-person board)	2021
Finland	Non-binding*	No specific threshold	2008
France	Binding**	40%	2017
Germany	Binding**	30%	2015
Greece	Binding**	25%	2020
Iceland	Binding**	40%	2013
India	Binding**	1 woman	2013
Ireland	Non-binding*	1 woman	2019
Israel	Binding**	1 woman	1999
Italy	Binding**	33%	2015
Luxembourg	Non-binding*	40%	2019
Malaysia	Binding**	30%	2016
Netherlands	Non-binding*	30%	2015
Norway	Binding**	40%	2008
Pakistan	Binding**	1 woman	2017
Portugal	Binding**	33%	2018
Spain	Non-binding*	40%	2013
Slovenia	Non-binding*	40%	2015
Sweden	Non-binding*	40%	2008
United Kingdom	Non-binding*	25%	2015

¹⁰ European Commission (2020). A Union of Equality: Gender Equality Strategy 2020-2025.

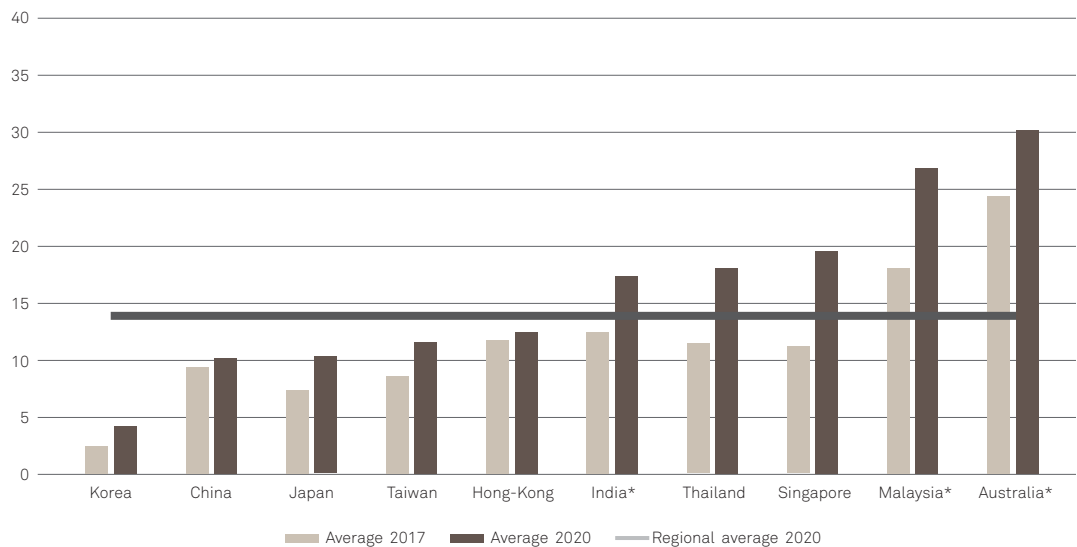
When analyzing the performance of companies across different countries within the Corporate Sustainability Assessment, we see that the countries with soft and binding quotas have performed better in terms of board gender diversity than those which have not adopted any quotas. Indeed, European companies headquartered in countries with regulations or recommendations on the number of women on the board mostly had an average percentage of women on the board which was higher than the regional average.

Europe: % of women on the board



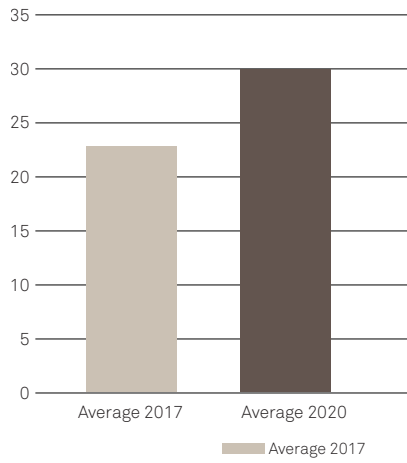
The same observation can be made in the Asia-Pacific region, where companies based in countries with regulations or recommendations in place performed better than their regional peers and than the regional average in terms of board gender diversity.

Asia-Pacific: % of women on the board

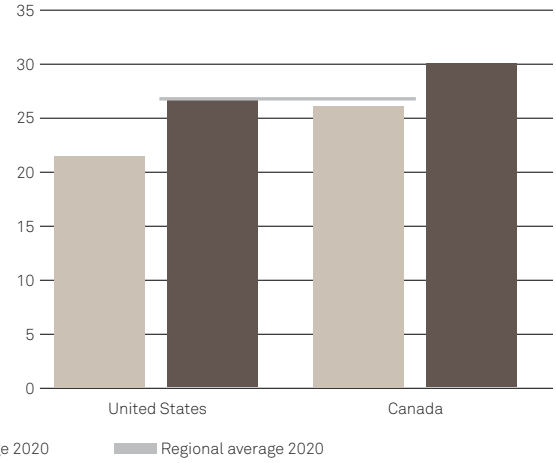


We see fewer countries outside of Europe and Asia-Pacific adopting binding or non-binding quotas. Although we observe a general global increase of the percentage of women in boardrooms, Latin America stands out as falling behind.

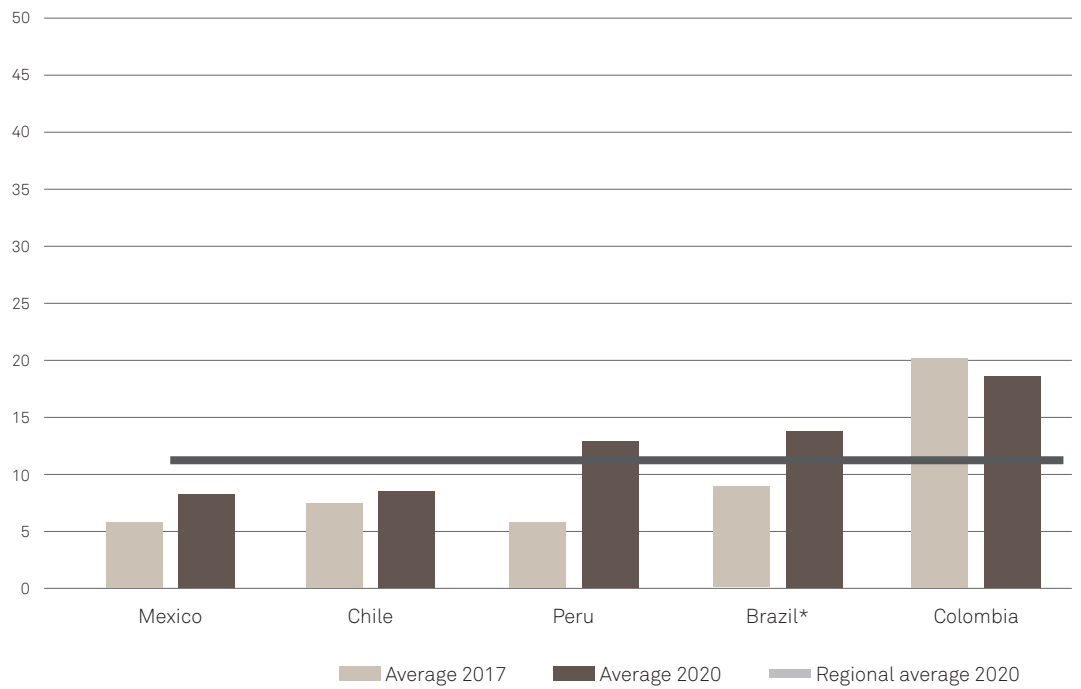
South Africa: % of women on the board



North America: % of women on the board



Latin America: % of women on the board



Why focus on women on the board?

The number of women on the board is an easily measurable gender performance indicator, which explains why this is a focal area. Furthermore, it is expected that having more women on the board will have trickle-down effects on the rest of the workforce. For example, it could break down stereotypes on women in leadership and encourage women to pursue their careers further, to seek for roles which they would have not otherwise considered and to ask for more raises and promotions¹¹. Having more diversity on the board can break down gender barriers by broadening women's "professional imagination", providing them with role models and increasing their capacity to project themselves into leadership roles. Higher numbers of women on boards can therefore instigate cultural change and has a strong symbolic meaning, showing that women can be leaders¹².

and backgrounds which result in better decision-making¹⁴. Having more women on the board also tends to curb excessive risk-taking, decrease aggressive tax strategies and improve firm reputation, earnings quality and sustainability performance. These outcomes are not negligible for companies and their shareholders, especially in times of a global pandemic which will require companies to differentiate themselves from their industry peers.

The benefits of diversity apply not only at board level but throughout companies more broadly, and the question has therefore been raised whether better representation at board level improves overall diversity metrics of a company.

The impact on other diversity indicators

The development of women's "professional imagination", i.e. their career expectations and aspirations, within companies with more women on the board is difficult to measure and grasp through quantitative metrics, at least in the short term. Furthermore, the expected improvement in diversity metrics such as the percentage of women in leadership and management roles and the pay ratios has not translated into the data. Indeed, based on the analysis conducted on the data disclosed by companies within the Corporate Sustainability Assessment, the correlation between women on the board and other diversity indicators is low.

Companies with more women on the board have a slightly higher proportion of women on average at different levels of responsibility. However, it is unclear whether greater board diversity drives this trend or whether companies with a more diverse workforce appoint more women directors. These companies might be more aware of diversity and gender

Companies with more women on the board have a slightly higher proportion of women on average at different levels of responsibility.

Having more women on the board is also financially material. The McKinsey & Company Diversity Wins Report 2020¹³ found that "companies whose boards are in the top quartile of gender diversity are 28 percent more likely than their peers to outperform financially" and the correlations are statistically significant. This might be linked to the fact that more companies have appointed women directors and there is an overall rise in the universe of companies included in the study, making it more likely to find statistically significant correlations. However, more research has been conducted showing that gender diversity in the boardroom matters because it brings a broader collection of experience, viewpoints

¹¹ Deloitte (2019). Data-driven change: Women in the boardroom – A global perspective. Global Center for Corporate Governance, 6th Edition.

¹² Kowalewska, H. (2020) Bringing Women on Board: The Social Policy Implications of Gender Diversity in Top Jobs. *Journal of Social Policy*, 49 (4).

¹³ McKinsey & Company (2020). Diversity wins: How inclusion matters.

¹⁴ Zukis, B. (30 June 2020) How Women Will Save The Future, One Corporate Board At A Time. *Forbes*.

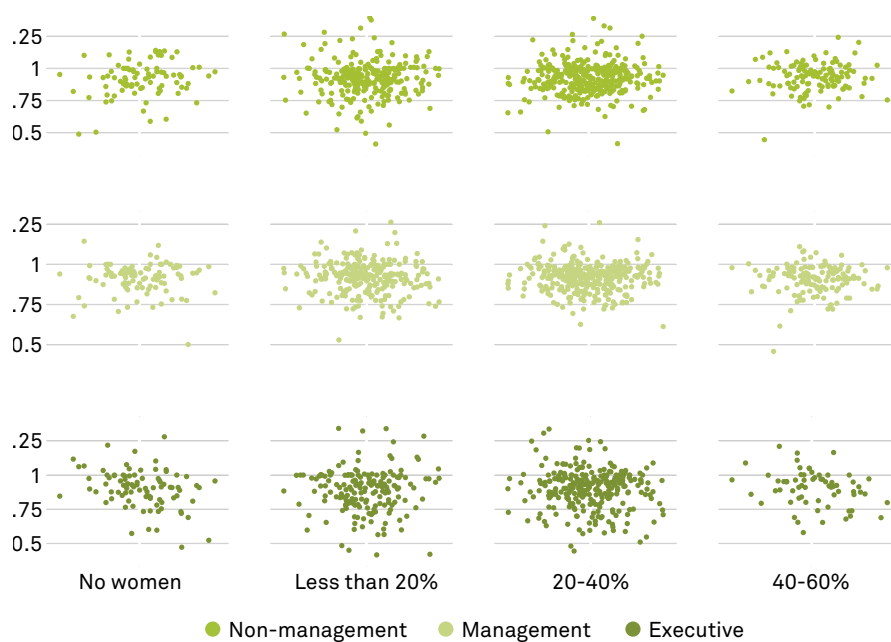
equality issues, or simply have more women in their talent pool who can be appointed as directors. It is therefore unsurprising that companies with more women in the workforce tend to have more women on the board, and as the correlation is not statistically significant, it is difficult to make a strong statement about the relationship between both indicators.

Women on board trend and percentage of women by level for year 2020



The correlation between women on the board and equal remuneration ratios is even less pronounced. The data collected in 2020 does not show a significant relationship between having more women on the board and improved equal remuneration ratios, and the same analysis over the years did not suggest any strong correlation between these indicators either.

Women on board trend and pay ratio for year 2020





Why don't the benefits trickle down?

Simply focusing on appointing more women on the board is not enough to achieve gender equality across companies. But why? Several factors are of relevance.

1. As women have been facing discrimination in entering the corporate workplace for decades, they tend to have lower levels of experience in the industry, which can hinder their legitimacy¹⁵.
2. Including women as non-executive or independent directors does not necessarily achieve the desired results, because executive members tend to have more say. This is especially relevant in the context of two-tier boards, where attention should be paid to have gender representation on both boards, and not just on the supervisory board¹⁶.
3. Women often face negative stereotypes in the workplace, which lead them to be perceived as less capable than their male counterparts and therefore to their views not being considered as equally important in the decision-making process¹⁷.
4. Simply because they are women does not mean that they have diversity and inclusion on the top of their agendas.
5. While we might observe an increasing percentage of women on boards, this does not necessarily mean that there are more women directors overall. In some countries, women simply hold more directorships than men on average, meaning that we see the same women increasing the board diversity numbers for multiple companies, rather than an increasing number of individual women taking up these positions¹⁸.

Therefore, we cannot rely solely on the percentage of women on the board to measure a company's gender equality performance. Looking at the broader representation of women within a company can provide us with an opportunity to identify gaps in a more meaningful way.

¹⁵ Smith, N. (2018) Gender quotas on boards of directors. IZA World of Labor.

¹⁶ Kowalewska, H. (2020) Bringing Women on Board: The Social Policy Implications of Gender Diversity in Top Jobs. *Journal of Social Policy*, 49 (4).

¹⁷ McKinsey & Company (2017). *Women Matter: Time to accelerate. Ten years of insight into gender diversity.*

¹⁸ Adams, R. B. (2015) *Myths and Facts about Female Directors.* IFC Corporate Governance Knowledge Publication 37.

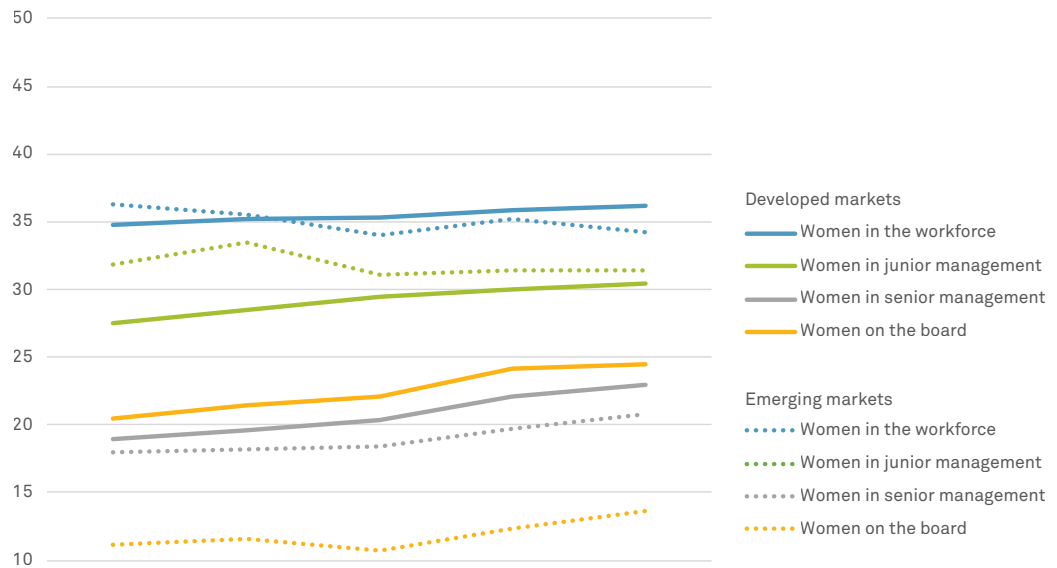
Moving up the ladder

How many steps left?

While the percentage of women on the board has improved over the years in both developed and emerging markets, it stays significantly below the percentage of women in the total workforce, showing that women remain underrepresented in the boardroom. The percentage of women in the total workforce in developed and emerging markets has stayed relatively stable, averaging around 35% over the past

five years. However, the proportion of women decreases as we move up the corporate ladder. Interestingly, in developed markets the percentage of women in senior management is even lower than the percentage of women on the board. This might hint to the fact that board quotas, mostly implemented in developed markets, have pushed companies to take action on their gender board representation faster than they have taken action on the representation of women within leadership positions across the company.

% of women at different levels of responsibility in developed and emerging markets



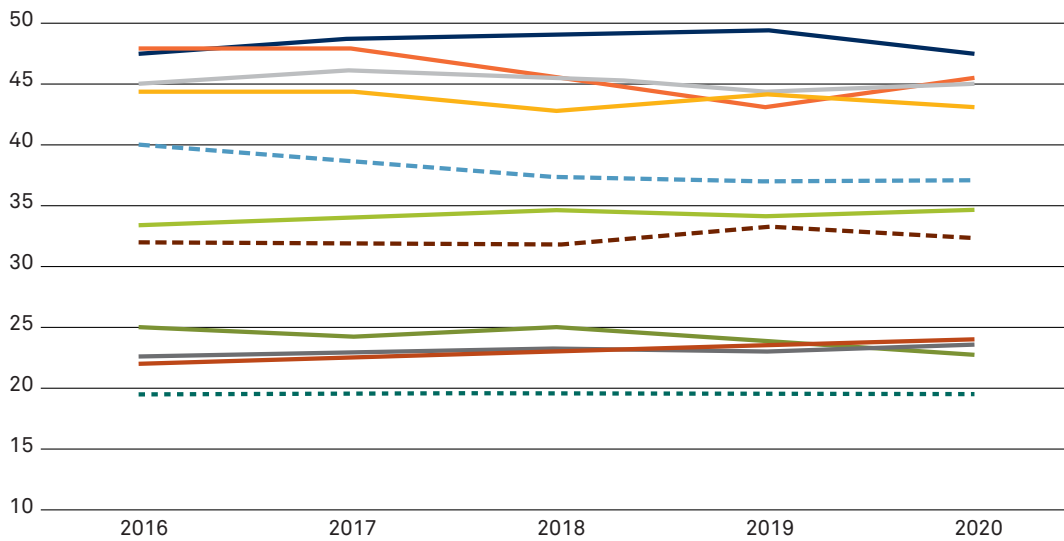
This suggests that companies will have to make more significant efforts to increase the representation of women, as the approaches taken so far have not led to notable developments over the years. EDGE Certification, the leading global assessment and business certification for gender equality, with which S&P Global has been collaborating over the years, determines 30% as the critical threshold for a group to achieve substantive representation. Companies will therefore have to adopt targeted strategies to build a more solid bridge between junior and senior management roles. Investors will also play a role in this transition and can influence this development by moving beyond the board of directors to also focus on the percentage of women in leadership positions.

Increasing the number of women in leadership positions is important for board diversity because it broadens the talent pool for board nominations, and ensures that the women appointed have the experience, skills and legitimacy required, which as mentioned earlier are essential to have a meaningful say in the decision-making process. Having more women in executives positions will therefore make it easier for companies to appoint women directors with the adequate skill set and this could in turn increase these directors' influence on the overall decision-making process, potentially improving the trickle-down effects on other women in the workforce.

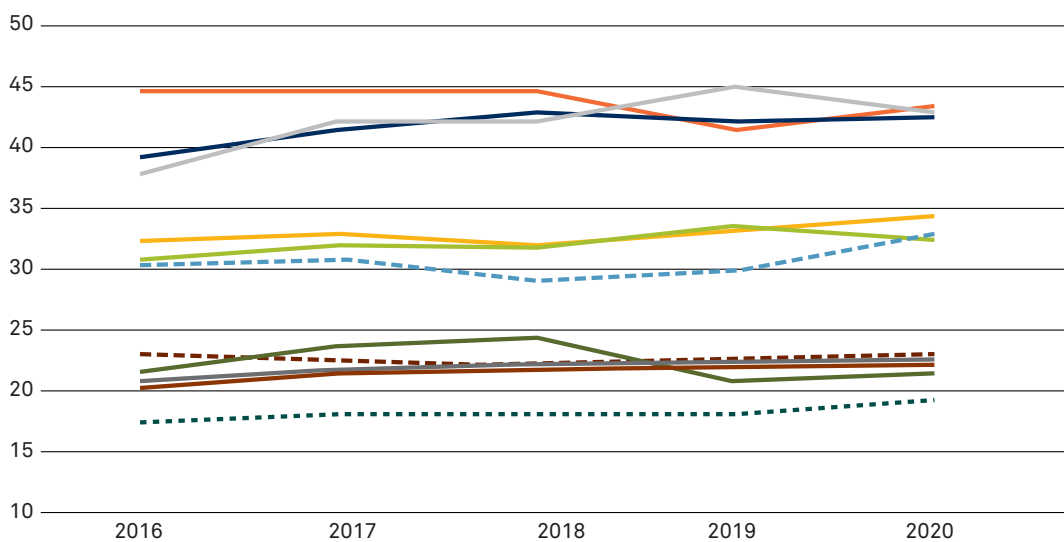
Industry perspective

Taking an industry-specific approach helps us to identify which sectors are leading positive trends and which ones are lagging behind. As expected, more client-facing industries tend to have better representation of women in their workforce and at junior management level. The trends for both indicators have however stayed alarmingly stable over the past 5 years, and the 11 industry groups mostly divide into three brackets: 20-25%, 30-35% and 40-50%. The best performers are the financials, healthcare and real estate sectors, while the laggards lie in the information technology, industrials, utilities, energy and material sectors.

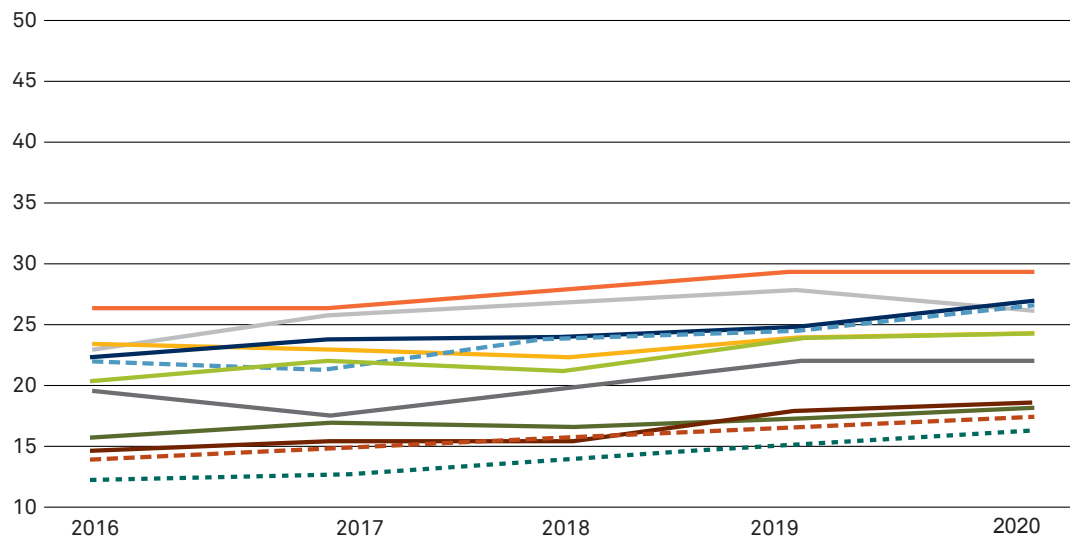
Share of women in the total workforce per industry



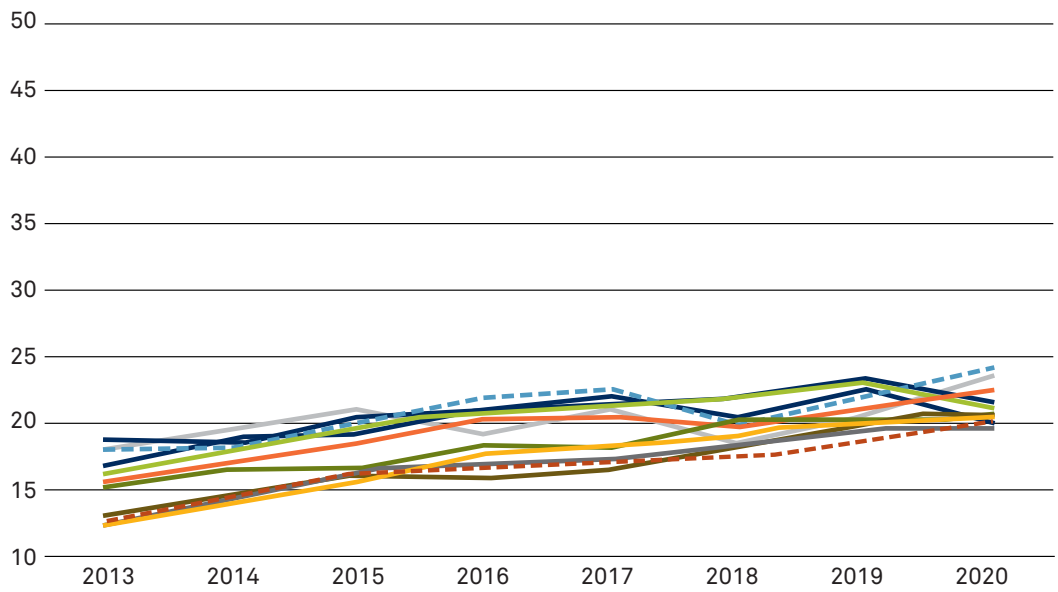
Share of women in junior management positions per industry



Share of women in senior management per industry



Share of women on the board per industry



- Financials
- Energy
- Industrials
- Materials
- Information technology
- Real estate
- Consumer discretionary
- Consumer staples
- Healthcare
- Utilities
- Communication services

Methodology: The list of sub-industries included in every GICS sector is available at <https://www.spglobal.com/spdji/en/documents/methodologies/methodology-gics.pdf>

While there is some degree of comparability between the percentages of women in the workforce and in junior management roles, the share of women in senior management positions drops significantly across industries. Nonetheless, the percentage of women in senior management positions has improved over the past few years. This improvement has been slow, with setbacks along the way, but considering that it takes time to build up the skills and experience and to fight through several layers of bias, this trend is encouraging.

Looking at the trends by industry group, we see that although improving, some sectors are still far from reaching the 30% threshold, and at this rate of progress, will take many more years to get there. This is for example the case for the Information Technology industry, which has gone from 14% to 17% of women in senior management roles between 2016 and 2020. In this context, the 2020-2025 EU Gender Equality Strategy's focus on gender issues in artificial intelligence and in the digital transition is extremely important to ensure that women will play a meaningful role in building and shaping the digital world of tomorrow¹⁹. As digitalisation will increasingly change our lives and that of future generations, companies and governments have the responsibility to ensure that all genders, combined with other identity markers such as race, age, ability, religion, sexuality, are represented in these developments.

How can companies ensure that they retain their women talent and close this gap between the proportion of women in junior management and in senior management? Family-care policies are one avenue to explore, as we know that women tend to take on more responsibility and workload in their private lives. This creates considerable challenges for their career development, when it does not lead them to drop out of the workforce completely. Therefore, companies need to focus on improving their work-life balance policies to ensure gender equality in the workplace. This is especially the case in the face of the Covid-19 pandemic, which has greatly impacted women in the workforce.

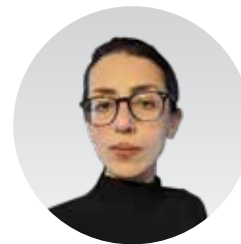
Care responsibilities in times of a pandemic

To understand women's advancement in the workforce, it is also necessary to consider flexible working policies and the impact they have on women employees in particular. That is especially true now, as the coronavirus crisis has caused a clash of professional and personal responsibilities, reshaping work and home life worldwide. Women still bear the brunt of childcare responsibilities and home care duties in much of the world. "Gender stereotypes that emphasize the role of women as the main caregivers and that of men as the main breadwinners remain deeply ingrained in some regions," the International Labour Organization's World Employment and Social Outlook Trends 2020 report found²⁰.

Working women facing a crisis

During the pandemic, those responsibilities in the home have only grown. Many employees transitioned to working from home full- or part-time. Daycare facilities and nursing homes closed and schooling moved online in many parts of the world, leaving many

Section contributors



Azadeh Nematzadeh
Senior Data Scientist
S&P Global Ratings



Nathan Stovall
Principal Analyst
S&P Global
Market Intelligence



Lindsey White
Senior Editor
S&P Global
Market Intelligence

¹⁹ European Commission (2020). A Union of Equality: Gender Equality Strategy 2020-2025.

²⁰ International Labour Organization (2020). World Employment and Social Outlook: Trends 2020..

²¹ Stovall, N.; Nematzadeh, A.; White, L. & Skufca, L. (2020). Something's Gotta Give: COVID-19 Could Rapidly Expand Family-Leave Policies; It Could Also Deal A Serious Blow To Women In The Workforce. S&P Global.



The threat of burnout is real and could have dire consequences for women’s advancement in the workforce in particular.

caregivers with fewer support options during the traditional workday. In a survey of U.S. parents and family caregivers that S&P Global conducted in partnership with AARP²¹, more than half of respondents said they are spending more hours at home taking care of children or caring for adults since the pandemic began.

Unsurprisingly, many parents and family caregivers are experiencing significant increases in stress with the changing work conditions and increased duties in the home. Since their commitments have grown, more than 30% of family caregivers in the S&P/AARP survey said they were experiencing a strong increase in stress due to the pandemic’s implications for their work-life responsibilities. Nearly 43% of all respondents reported a moderate increase in stress. The threat of burnout is real and could have dire consequences for women’s advancement

in the workforce in particular. McKinsey’s Women in the Workplace 2020 study²² found that more than one in four women are considering stepping back in their careers or leaving the workforce entirely — a situation that McKinsey called “an emergency for corporate America.” Many of those women are mothers who cite childcare responsibilities as a primary reason for considering downshifting or leaving the workforce. Some companies have responded to the stresses of the pandemic by providing flexible work arrangements, recognizing that a number of employees have found themselves balancing work with childcare or care for a loved one during the crisis. Close to 37% of respondents to the S&P Global/AARP survey said their companies have added flexible work hours to their policies since the pandemic began. In some instances, employers have moved quickly to adapt their policies for working parents. Tech giant Microsoft²³, for example, recently began offering a new “pandemic school closure” and childcare leave benefit that gives parents as many as 12 weeks of paid leave to care for their children at home. Other firms have provided employees with ad-hoc days off to allow them to recharge.

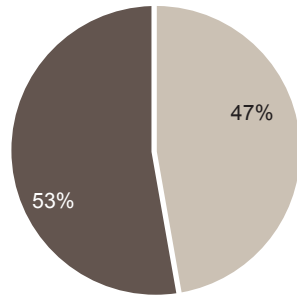
²² McKinsey & Company (2020). Women in the Workplace 2020.

²³ Stovall, N.; Nematzadeh, A.; White, L. & Skufca, L. (2020). Something’s Gotta Give: COVID-19 Could Rapidly Expand Family-Leave Policies; It Could Also Deal A Serious Blow To Women In The Workforce. S&P Global.

Women on the board and well-being policies

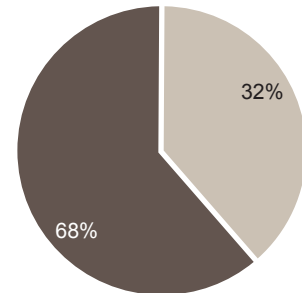
Globally, CSA data shows a positive correlation between women being represented on the board and the existence of work-from-home options and flexible working arrangements. Only a third of companies with a low representation of women on the board — defined here as less than 30% — offer work-from-home options. But nearly half of companies with more than 30% of women on the board offer some form of remote-work option.

Companies with more than 30% women on the board



■ Working-from-home policy
■ No working-from-home policy

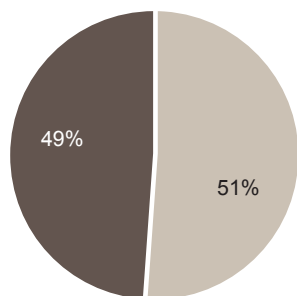
Companies with less than 30% women on the board



■ Working-from-home policy
■ No working-from-home policy

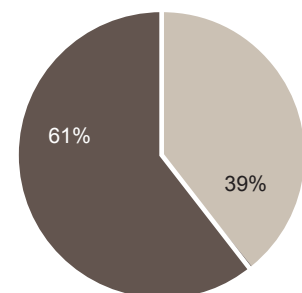
Similarly, companies with greater gender board diversity appear more likely to offer flexible working arrangements. Just 39% of companies with low proportions of women on the board offer flexible working arrangements, compared to 51% of companies with high proportions of women on the board. According to another analysis also integrating data from Equileap, a provider of gender-equality data and insights, greater representation of women on the board and in executive positions tends to be associated with flexible hours offered to employees.

Companies with more than 30% women on the board



■ Flexible work policy
■ No flexible work policy

Companies with less than 30% women on the board



■ Flexible work policy
■ No flexible work policy

“Because there is a gender pay gap, so often in a couple situation, the one with the higher-paying job is going to stay working. And it’s the women that are going to pull back, go to part-time, or stop working completely,” according to Natasha Lamb, Managing Partner and Director of Equity Research & Shareholder Engagement at Arjuna Capital

The benefits of flexibility

Flexibility can be an effective tool in recruiting and retaining women. S&P Global and AARP analyzed data from Equileap and found that 319 companies of the 1,389 in its sample offer flexible hours and ensure equal recruitment policies. Companies with equal recruitment strategies commit to ensure non-discrimination against any type of demographic group and equal opportunities to ensure gender parity. The research found that companies with equal recruitment policies and flexible hours tend to recruit more women.

Flexible work arrangements also appear to help with retention of employees. The research found that companies that offer flexible hours tend to see lower voluntary and total turnover rates, and the correlation was statistically significant. Turnover is also lower when companies have flexible location options, according to our analysis of data from Equileap and S&P Global’s CSA, and the correlation was statistically significant.

Women are more likely to use flexible work arrangements and in particular part-time work to balance their work and family commitments, according to an October 2020 report on flexible working from Gapsquare²⁴, a research firm that uses equality and diversity data to analyze pay disparities. Gapsquare’s research found that in the face of COVID-19, flexible working is now seen as “essential for any employee, instead of inherently gendered.”

However, “this does not mean that the gender aspect has been erased — mothers spend more time on domestic responsibilities than fathers during the lockdown,” GapSquare wrote. Still, the firm suggested the pandemic could mark the beginning of “real, long-term change.” If men were able to and made use of flexible hours and locations policies to take on more domestic and care responsibilities, women in the workforce would benefit greatly.

Long-term impacts of the pandemic

While the pandemic has greatly accelerated the discussion around more family-friendly policies, fears that current conditions will become permanent and significantly set back women’s participation and advancement in the workforce are crystalizing. The pandemic has increased the time required to meet family responsibilities and has brought more stress for many workers. As the investor community puts increasing emphasis on sustainability issues in general and treatment of employees in particular, companies cannot afford to ignore this issue.

The gender pay gap could also contribute to pushing women out of the workforce amid the pandemic. In the U.S., for example, American women earned about 81% of what men earned in 2018, according to the country’s Bureau of Labor Statistics²⁵. “Because there is a gender pay gap, so often in a couple situation, the one with the higher-paying job is going to stay working. And it’s the women

²⁴ Gapsquare (2020). Report not publicly available.

²⁵ TED: The Economics Daily (22 March 2019). Women’s had higher median earnings than men in relatively few occupations in 2018. U.S. Bureau of Labor Statistics.

that are going to pull back, go to part-time, or stop working completely,” according to Natasha Lamb, Managing Partner and Director of Equity Research & Shareholder Engagement at Arjuna Capital, a sustainable-investment firm she co-owns. When asked in an interview with S&P Global²⁶ how the pandemic will affect women’s advancement in the workforce and progress toward closing the gender pay gap, she was blunt: “I think it’s going to be a disaster.” Taking this risk into account, companies can decide to act now in order to decrease the probability and adverse effects of losing their women talent.

Having more women in leadership will also diminish the biases and negative stereotypes around women’s ability to lead, hopefully addressing issues around unequal pay and gender pay gaps.

In combination with family friendly policies, other practices can have a great impact on a company’s gender balance. Proactive management of pay equity, including conducting regular gender pay gap assessments, systematically eliminating identified gender pay gaps and communicating on these practices are key steps towards gender equality. Creating gender diverse recruitment teams and ensuring diverse candidate pools, as well as setting targets and objectives for the gender composition of management levels, are further practices that companies should adopt in order to improve their gender equality performance and counteract the potential setbacks caused by the pandemic.

Where are we going?

A key take-away from this article is that while increasing the proportion of women on the board is important, further steps are needed to improve gender equality in the workforce. Companies need to hire and promote more women into senior management positions. This presents opportunities for companies to access new talent pools and increase innovation and efficiency, as we know that diverse teams perform better. Having more women in senior management will in turn ensure that they have the adequate skill sets and required experience to be appointed as board members, enabling companies to reach their quotas and align with the increasing number of regulations around the percentage of women on corporate boards. Investing in women talent early on therefore diminishes regulatory risks down the line. Having more women in leadership will also diminish the biases and negative stereotypes around women’s ability to lead, hopefully addressing issues around unequal pay and gender pay gaps. Considering the growing regulatory frameworks and transparency expectations around remuneration practices, companies tackling these issues now will profit from lower compliance costs in the future. Furthermore, fair representation and compensation practices lead to better employee engagement, talent attraction and retention, and efficiency. The operational opportunities of gender equality in the workforce will therefore enable companies to differentiate themselves from their peers in a competitive environment.

²⁶ Stovall, N.; Nematzadeh, A.; White, L. & Skufca, L. (2020). Something’s Gotta Give: COVID-19 Could Rapidly Expand Family-Leave Policies; It Could Also Deal A Serious Blow To Women In The Workforce. S&P Global.



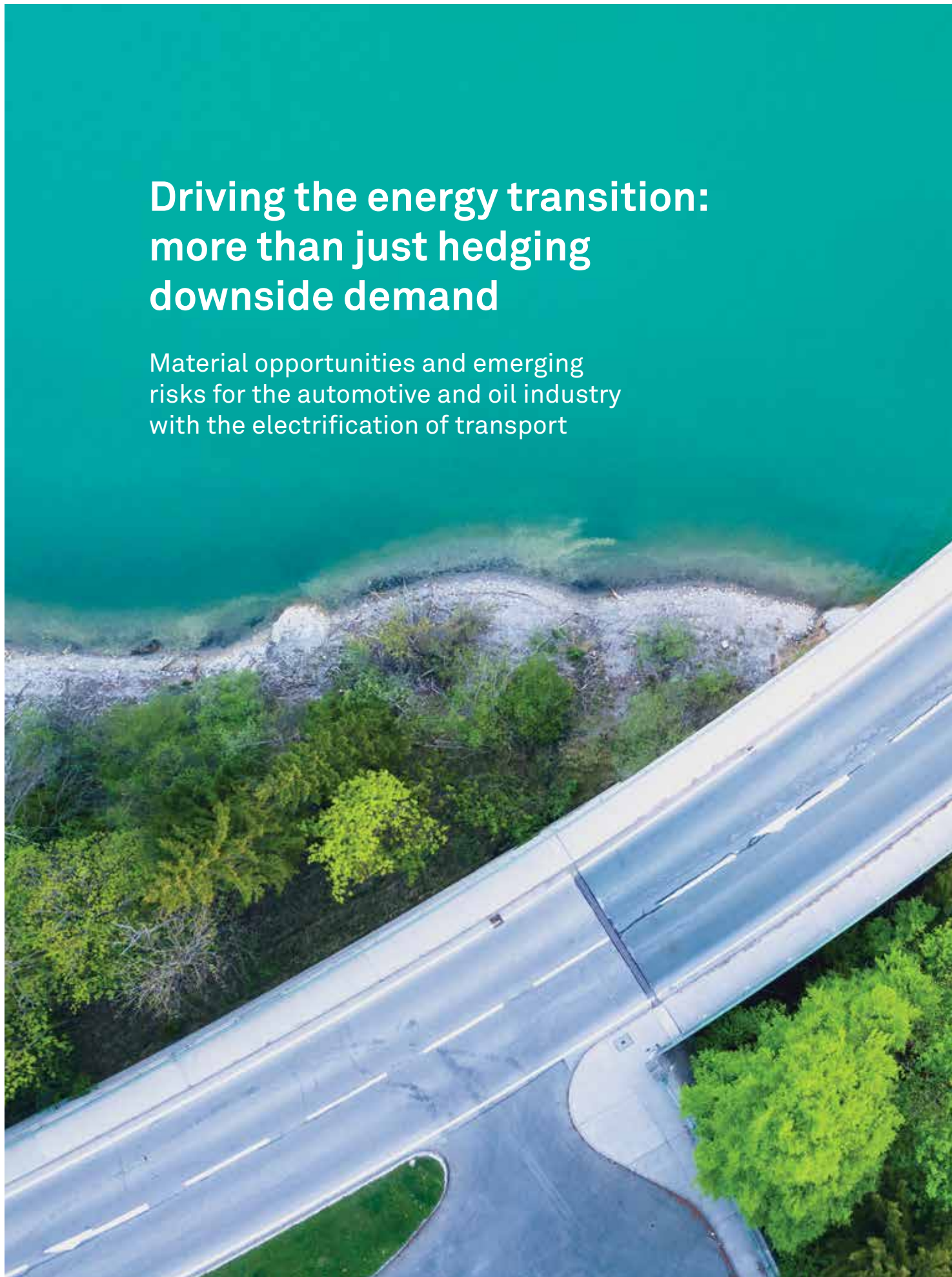
Shareholders have their role to play in this shift, as they can push companies to adopt better practices and improve their performance in terms of gender equality. They can act faster than governments by imposing their own quotas. This does not only ensure that their investment practices align with the UN Sustainable Development Goals, especially goal number 5 on gender equality, but also increases their opportunities for better returns, as gender-equal companies face lower regulatory and operational risks. Drawing from this research, investors can now adjust their focus to reflect the importance of diversity indicators beyond the percentage of women on the board.

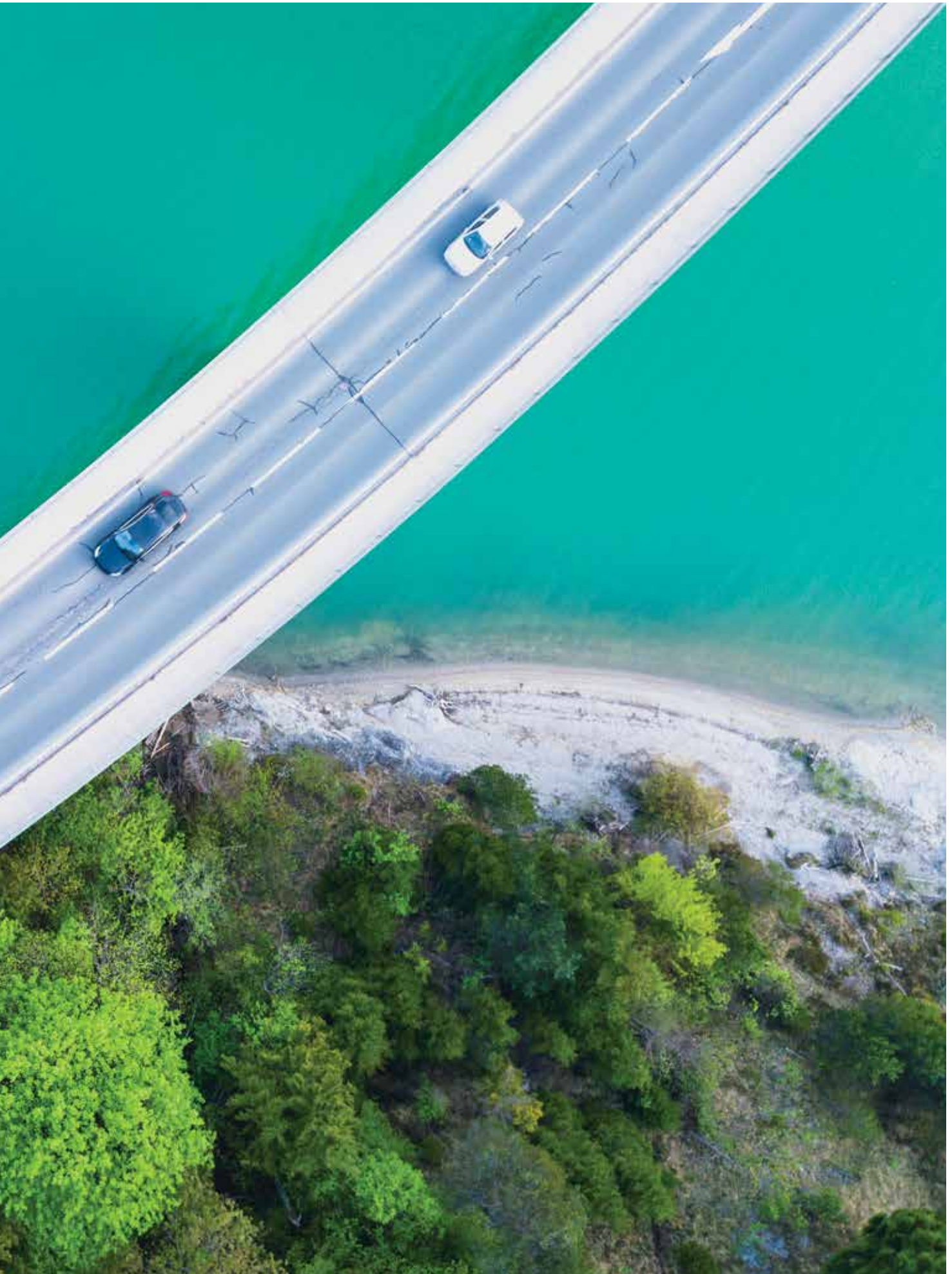
Diversity also needs to expand its scope to move away from addressing women as

one group and to instead recognise the heterogeneity of women's experiences in the workplace. More efforts need to be made to collect data on indicators such as race, ethnicity, caste, religion, disability, sexual orientation and other identity markers, in order to address the further inequalities that some women experience according to their intersecting identities. Eventually, the discourse should also shift to recognise women for their abilities, experience and skills rather than branding them as diversity trophies. Companies and investors can help the world to wake up to the possibility that women deserve a say in the decision-making process as legitimate leaders and fully-entitled human beings. ■

Driving the energy transition: more than just hedging downside demand

Material opportunities and emerging risks for the automotive and oil industry with the electrification of transport



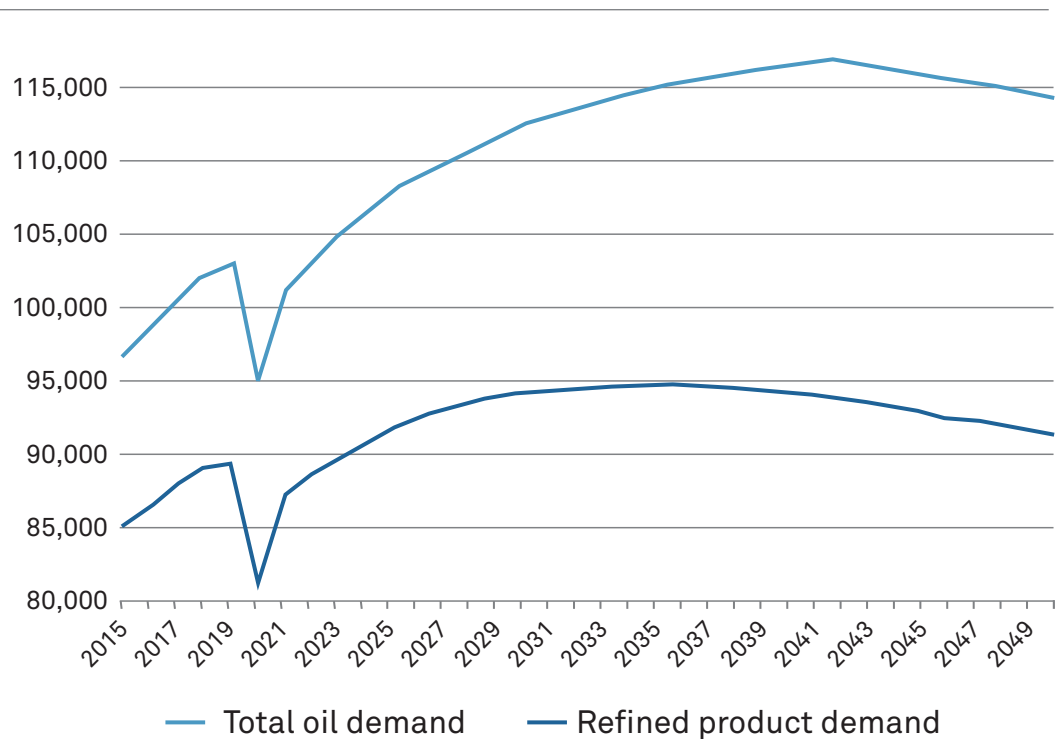


Electric vehicles role in the energy transition

The price of oil saw dramatic variability in 2020, driven by radical shifts in consumer behavior and significantly lower energy demand amidst the uncertainty of the COVID-19 pandemic. Though oil demand is anticipated to weather the storm in the short run, bigger waves are coming. As the energy transition proceeds, particularly the broader transformation of the transport sector to electric vehicles (EV) and more

regulated fuel-efficient internal combustion engines (ICE), global demand for refined oil products is forecasted to peak in mid-2030. At this point, aggregate demand for refined oil will reach its maximum and then start to decline (See Figure 1). Refined products for vehicle transportation only represent a portion of absolute oil demand. They are only one of the contributing components of the energy transition and the impending decline in oil demand. Nevertheless, this potential reduction of demand represents a significant material opportunity and emerging risk for both the oil and automotive industries.

Figure 1: Oil and Refined Product Demand Forecast



Note: CO2 figures reflect energy combustion emissions only. MMBOED – million barrels of oil equivalent per day. Source: Platts Analytics Future Energy Outlooks¹.

¹ Mozur, M., Watters, T., Redmond, S., Nietvelt, K., & Schiavo, M., (2020). The Energy Transition: COVID-19 And Peak Oil Demand. S&P Global Platts and S&P Global Ratings, divisions of S&P Global Inc



Kieran Dobson
PhD, ESG Specialist
S&P Global



Manjit Jus
Global Head of
ESG Research and Data
S&P Global



The energy transition encompasses many different angles. These include, but are not limited to, oil and gas diversification, automotive and transport transformation, alternative drive train adoption at the commercial versus consumer level, and renewable energy opportunities. In this article, we will narrow our focus and assess how the electrification of transport within the broader energy transition, and more specifically the adoption of EVs for both consumer and commercial operations represents material risks and opportunities as reported by companies in the S&P Global Corporate Sustainability Assessment (CSA) and scenario forecasts for automotive and energy companies.

We will begin by introducing the electrification of transport and how automotive companies are addressing the associated risks and opportunities. Next, we will discuss how this fits into the energy transition more holistically and how traditional oil companies are preparing (or not) for the anticipated peak in motor oil demand as reported in the CSA. Lastly, we will conclude by summarizing the main points and introducing two new themes intended to be launched in the CSA surrounding EV range and efficiency.

The electrification of the transport sector

The automotive industry is undergoing a transition towards electrification. This is driven in part by environmental concerns, inhibitive regulation on CO₂, particulate and nitrogen oxide (NO_x) emissions, and consumer interest. Extrinsic motivation for EV adoption and portfolio re-allocation of automotive manufacturers towards EVs resonates in part from the stringent public policy on emissions (see Figure 2 below for major markets emissions targets). Taking the EU as a specific example, transportation as a whole (commercial and consumer transport) is responsible for approximately 30% of the EU's total CO₂ emissions. Out of this, 72% come specifically from road transportation, including heavy-duty trucks, light-duty trucks, motorcycles, and cars². Delving into greater granularity, cars alone represent 60.7% of the EU's transportation emissions³. To curb these emissions, European policymakers have committed to an aggressive stance on emissions reduction, with an ambition to reduce emissions from transport as a whole by 60% from its 1990 levels by 2050. Globally, in China the government is targeting 20% EV penetration by 2025, California has committed to requiring all vehicles sold by 2035 to be zero-emission⁴ and 17 other countries have announced plans to transition to zero-emission vehicles or phase-out ICE vehicles by 2050⁵. Many major cities, including Paris, London, Los Angeles and Tokyo, have pledged fossil-fuel-free streets by 2030 and only zero-emission buses from 2025⁶.

² <https://www.europarl.europa.eu/news/en/headlines/society/20190313ST031218/co2-emissions-from-cars-facts-and-figures-infographics>

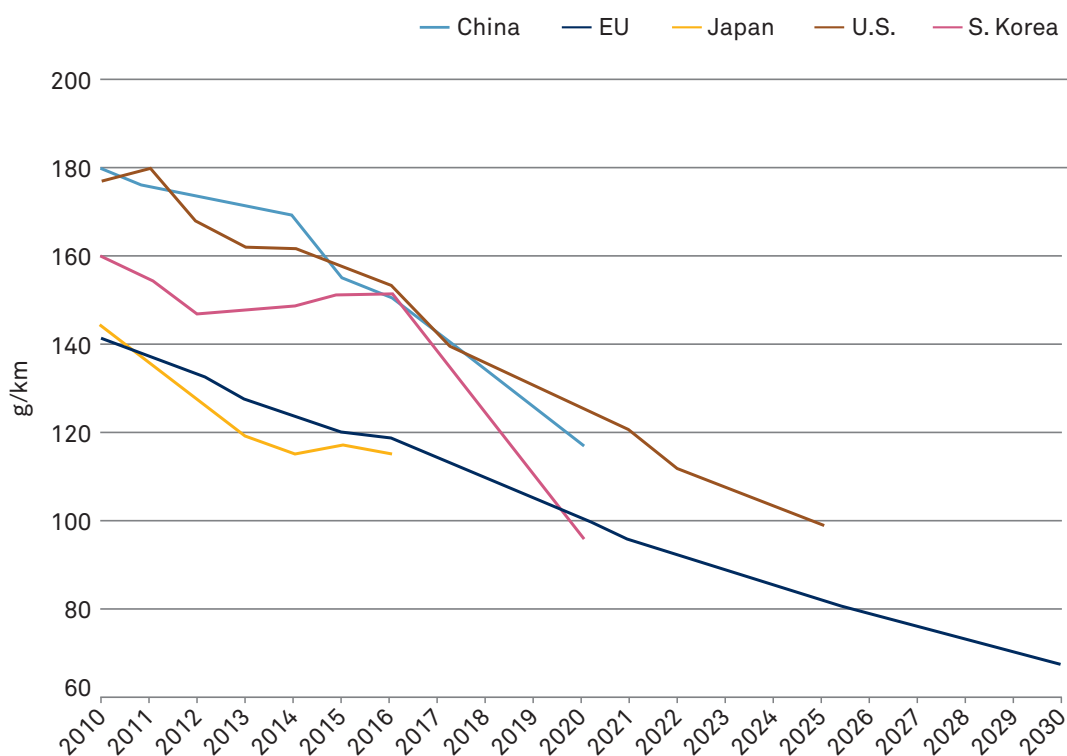
³ Ibid

⁴ <https://www.gov.ca.gov/2020/09/23/governor-newsom-announces-california-will-phase-out-gasoline-powered-cars-dramatically-reduce-demand-for-fossil-fuel-in-californias-fight-against-climate-change/>

⁵ <https://www.weforum.org/agenda/2020/09/heres-how-electric-vehicles-can-keep-us-on-the-road-to-paris/>

⁶ <https://www.c40.org/other/green-and-healthy-streets>

Figure 2: Historical, enacted, and proposed CO2 emissions targets for passenger cars.



Source: S&P Global Ratings a division of S&P Global Inc.⁷

According to the CSA, leading automotive companies have reported that EVs represented on average 1% (or less) of new cars sold in 2019 (excluding Tesla Motors). In the light-duty vehicle segment for the same year, they only amounted to less than 1% of the global car fleet⁸. EVs have become relatively less competitive due to unusually low oil prices.

On the upside, however, EVs – after hitting a minor road bump – are on track to achieve a record 3.3% market share in 2020⁹. Within the light-duty vehicle category, major automotive companies have taken firm stances on developing and innovating for EVs. For example, Volvo pledged that all of their new vehicles as from 2019 will be launched with an electric motor, diversifying their portfolio to fully electric, plug-in hybrid and mild hybrid vehicles. Further automotive manufacturers, including the Volkswagen Group, BMW, Honda and Toyota, have made commitments to diversify their

vehicle-portfolio extensively and increase their percentage of electric new cars sold, in some cases upwards of 50% of total new sales over the medium- and long-term.

Outside of the automotive industry, we observe many other businesses committing to facilitating this transition and reducing their own emissions by joining the EV100 Campaign¹⁰. These efforts often revolve around curbing their own emissions through electrification of their vehicle fleets for commercial transportation, including both passenger light-duty vehicles (PLDV) and medium and heavy-duty vehicles (MHDV), such as buses or heavy-duty trucks, and by investing in charging infrastructure for their customers, subsequently helping to facilitate further EV adoption.

While it is certain that ICEs and EVs will share the road, original equipment manufacturers (OEM) and tier-1 suppliers are faced with a significant material opportunity to

⁷ Orłowski, L., Stegert, A., Pery, M., Seiltgens, E., Amano, M., Hu, L., Chan, S., Ferraris, V., & Madlani, N., (2019). The Future is Electric: Auto Suppliers And The Emergence Of EVs

⁸ <https://www.iea.org/reports/global-ev-outlook-2020>

⁹ Klein, D., Mozur, M., McDonald, Z., & Kramarchuk R., (2020). Future Energy Outlooks Quarterly Update, November 2020. S&P Global Platts a division of S&P Global Inc.

¹⁰ <https://www.theclimategroup.org/about-ev100>

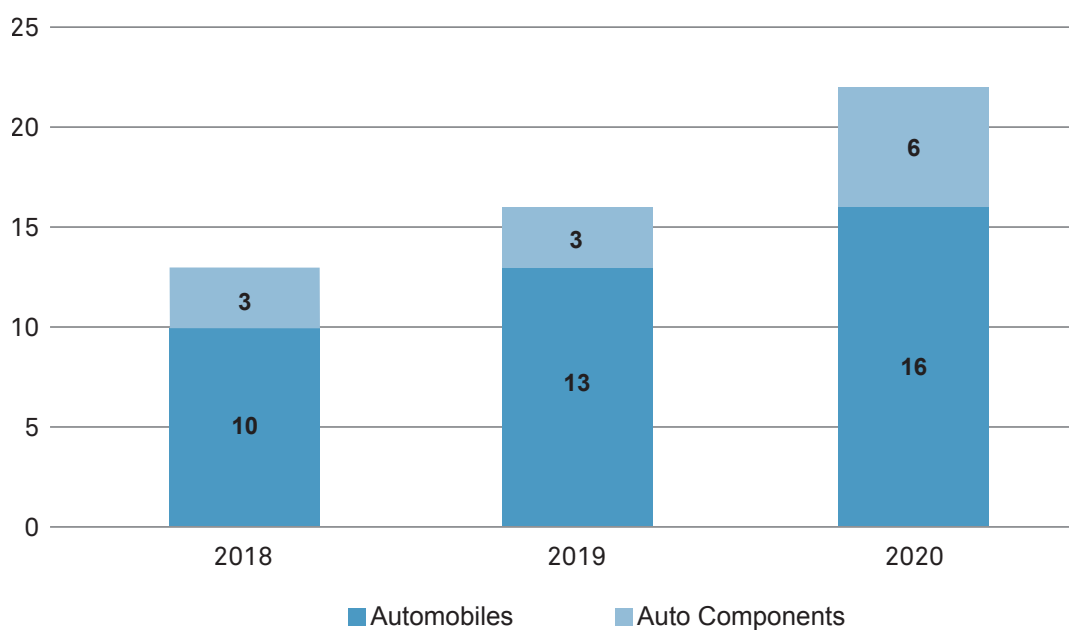
diversify their portfolios towards more fuel-efficient vehicles. In this way, they would be simultaneously addressing the demand from increasingly environmentally conscious consumers and adhering to regulations on stricter emissions standards. Particularly, manufacturers are likely to focus their near-term electrification strategy on the EU in order to adhere to the strict EU fleet-wide average emission target for new cars of 95g CO₂/km, 2021, phased in from 2020. This is a lower, more aggressive target, compared to the 2015-2019 one of 130g CO₂/km, considering that the average emission of new cars registered in 2019 in the EU28, Iceland, and Norway was 122.4g CO₂/km¹¹. Combined with expanded EV purchase subsidy programs since 2020 in France, Germany, Poland, Spain, Austria, Greece, Italy, Croatia, the UK, and the European Commission, the EU-27 and the UK will continue to lead the world in EV adoption¹².

BloombergNEF's Electric Vehicle Outlook 2020¹³ suggests that, by 2022, consumers will be able to choose amongst over 500 different

EV models globally and that, by 2040, 58% of all passenger vehicles sold will be electric. This would be a significant increase from the anticipated 28% forecasted to be sold in 2030. Overall, this would represent 31% of the global passenger vehicle fleet on the road in 2040 and 8% in 2030¹⁴. Platts Analytics Long-Term EV Outlook further suggests pure electric vehicles will become cost-competitive with traditional ICE by the mid-2020s¹⁵. Furthermore, consumers will be more inclined to adopt EVs as battery prices continue to fall and extended possible driving ranges ease the anxiety of potential EV customers. Such comparable costs and performance levels, combined with a plethora of choices will be key drivers in attracting buyers.

Not surprisingly, there has been an increasing number and percentage of CSA respondents in the automotive sectors (automobile and auto component companies) reporting that EVs or alternative drive trains rank as one of their top three material topics and business strategies that drive their long-term value creation –

Figure 3: Number of automotive companies and component manufacturers reporting on EVs and Alternative Drive Trains as a material issue.



Source: S&P Global, data compiled from companies' annual and sustainability reports.

¹¹ https://ec.europa.eu/clima/policies/transport/vehicles/cars_en

¹² Klein, D., Mozur, M., McDonald, Z., & Kramarchuk, R., (2020). Future Energy Outlooks Quarterly Update, November 2020. S&P Global Platts a division of S&P Global Inc.

¹³ <https://about.bnef.com/electric-vehicle-outlook/>

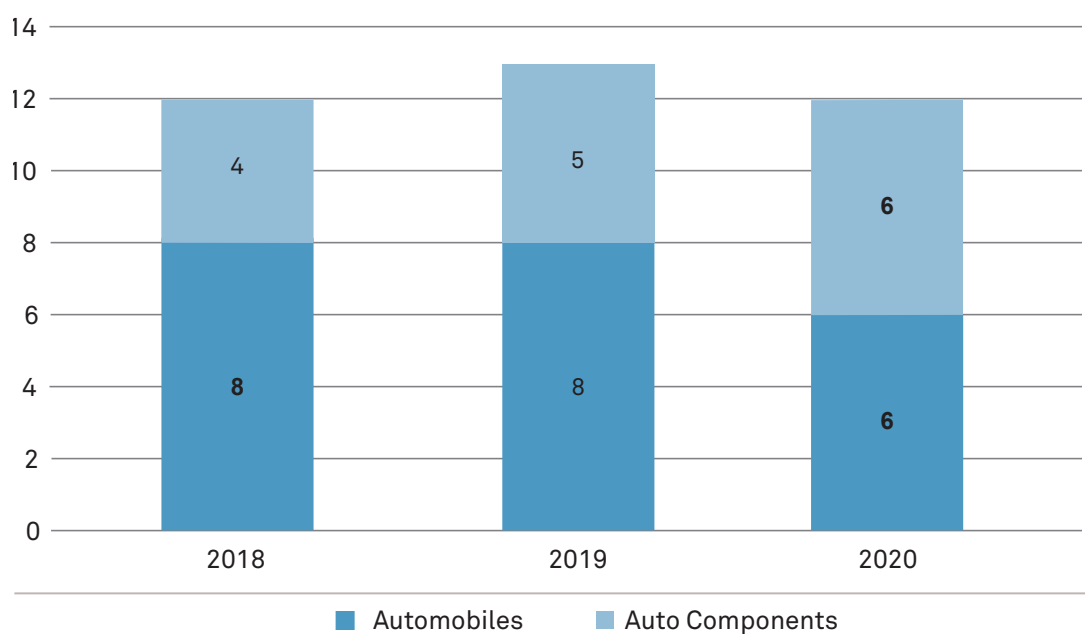
¹⁴ Ibid.

¹⁵ McDonald, Z., Mozur, M., & Kramarchuk, R., (2019). Long-Term Electric Vehicle Outlook. Drivers & Implications of Transport Electrification. S&P Global Platts a division of S&P Global Inc.

also for shareholders – and competitive position (Figure 3). This represents 58% of CSA respondents within these sectors and almost one-third of automotive companies eligible for the Dow Jones Sustainability Indices (DJSI) in terms of free-float market capitalization. Looking more closely, when only comparing amongst their unique industry, auto components companies (32%) are following automobile companies (84%) in reporting this as a top material issue; an increasing trend in both industries as the electrification of transport becomes ever more prevalent. This does not come as a surprise with the clear complementary nature of these industries and we anticipate further prevalence of such reporting for both automobile and auto components companies in the immediate future. Companies that are positioning themselves to meet or exceed future regulatory standards will improve their competitive advantage, not only by reducing the risk of costly penalties, but preparing themselves to capture the ever-increasing market for EVs and transitioning away from products that are at risk of reduced demand.

We see a decline in the number of automobile companies reporting the electrification of transport as a long-term emerging risk (Figure 4). Automobile companies have rather reported their recognition of the immediate significant impact that electrification has on their operations (Figure 3). On the other hand, a growing number of auto components companies are reporting that electrification is a long-term emerging risk to their operations within the next 3-5 years (Figure 4), but not amongst the most material issues today. Compatibly, this represents 32% of auto component companies and 32% of automobile companies that actively responded to the CSA in 2020. However, as suppliers' competitive positions will likely depend on their ability to provide environmentally and socially sustainable innovative products and technology (whether radical or incremental to their existing offering), we anticipate greater numbers of auto component companies reporting on this risk/opportunity hand-in-hand with the automobile companies. Further common emerging risks reported within the automotive

Figure 4: Number of automotive companies and component manufacturers reporting on EVs and Alternative Drive Trains as a long-term emerging risk.



Source: S&P Global, data compiled from companies' annual and sustainability reports.

industry revolve around the sharing economy and mobility services: While some companies report mitigating actions, including developing and co-developing applications and marketplaces, we anticipate that the ownership model of vehicles in the future will also be reported on more frequently, both as a material issue and an emerging risk.

Companies must carefully plan their long-term decarbonization strategies with a holistic focus on product lifecycles, the embedded carbon of their materials, and end-of-life recycling.

In the meantime, manufacturers are already innovating to design their ICE vehicles with lighter-weight materials to improve fuel efficiency by reducing overall vehicle weight. This is primarily to adhere to increasingly stricter fuel-efficiency and emissions standards, but it also provides complementary spillovers that will benefit their EV offerings for range and efficiency. While this is a step in the right direction towards achieving emissions reductions, it is also important to highlight the other side of the coin: the companies that are *not* reporting on EVs and alternative drive trains as neither emerging risks nor current material issues. Today, EVs barely make up a fraction of major automakers new car sales. Although EVs constitute a massive business opportunity for many companies providing vehicles in the low-carbon economy, many CSA respondents are yet to prioritize this.

While it appears clear that consumer preferences and political regulations are favoring the adoption of alternative drive trains, there exist fundamental challenges holding back the accelerated adoption of EVs. On the consumer side, common factors – including price, value, quality and scarce charging infrastructure – make EV adoption less favorable to range-anxious consumers, typically outside the smaller pool of eager early adopters. On the supplier side, OEMs

and equipment suppliers may be faced with unsustainable supply chains as increased demand for EVs implies increased demand for battery metals and advanced electronic components, particularly conflict minerals and cobalt. Sustainable procurement policies and supply chain due diligence will become increasingly important for manufacturers, as they face significantly stricter compliance obligations for their minerals supply chain. More holistically, OEMs must also consider the entire lifecycle assessment (LCA) of the impact that these new products will have. This goes beyond the upstream procurement policy and encourages OEMs to examine both the type and the source of the inputs and the outputs of the materials together with the energy required in the production of the vehicles. Best practice also involves addressing environmental and social impacts directly attributable to the functioning of the EV throughout its life cycle. Companies must carefully plan their long-term decarbonization strategies with a holistic focus on product lifecycles, the embedded carbon of their materials, and end-of-life recycling. This is particularly pertinent for EVs and the reliance on battery metals and materials that tend to be sourced from otherwise emissions-intensive industries (i.e. mining). As demand for electric vehicles grows, so too will the awareness around these risks.

The electrification of transport not only represents a disruption to traditional oil players addressing motor-oil demand, but also a significant material opportunity. In this section, we will discuss the evolving impact of the electrification of the transport sector for oil companies and how companies are responding to this emerging risk/opportunity.

One of the most significant material ESG risks to oil companies stems from the pace at which the energy transition away from oil and carbon-based fuels is realized. Holistically, this includes government regulation promoting renewable energy and curbing pollution (including both hazardous waste and air pollution), reduced demand for plastics (largely derived from petrochemicals),

and the rate of the electrification of transport, amongst other factors.

While Platts Analytics' forecasts of EV adoption growth have been tempered by weaker oil price expectations in response to COVID-19, the steady shift in new-vehicle sales away from internal combustion vehicles to EVs will displace gasoline/diesel demand by approximately 8 million b/d by 2040. Platts Analytics Future Energy Outlooks estimate that, were it not for this demand displacement, global oil demand – even for refined products – would continue to increase well into the 2040s and likely the 2050s.

Companies are doing more than just hedging this impending downside demand, but instead investing in material opportunities that will seek to fill the vacuum that decreased demand for motor oil will create.

While the scenarios referenced here, corresponding with the anticipated tipping point for EV adoption and EV market saturation, are 10-15 years away, we are seeing oil and gas companies pre-empting their downside demand with accelerated investments into the electrification of transportation and its related infrastructure. In the past three years, we have seen a growing number of oil and gas companies reporting that the electrification of transport is already a pertinent material issue affecting their operations (Figure 5), while others are recognizing it as an emerging risk, anticipated to affect them in the medium and long term (3-5+ years) (Figure 6). This goes beyond decarbonizing their existing portfolio mix of production and reserves of total hydrocarbons and includes investing in substitutable – and sometimes complementary – opportunities in renewable energy, alternative biofuels, and facilitating expansive charging networks. Companies are doing more than just hedging

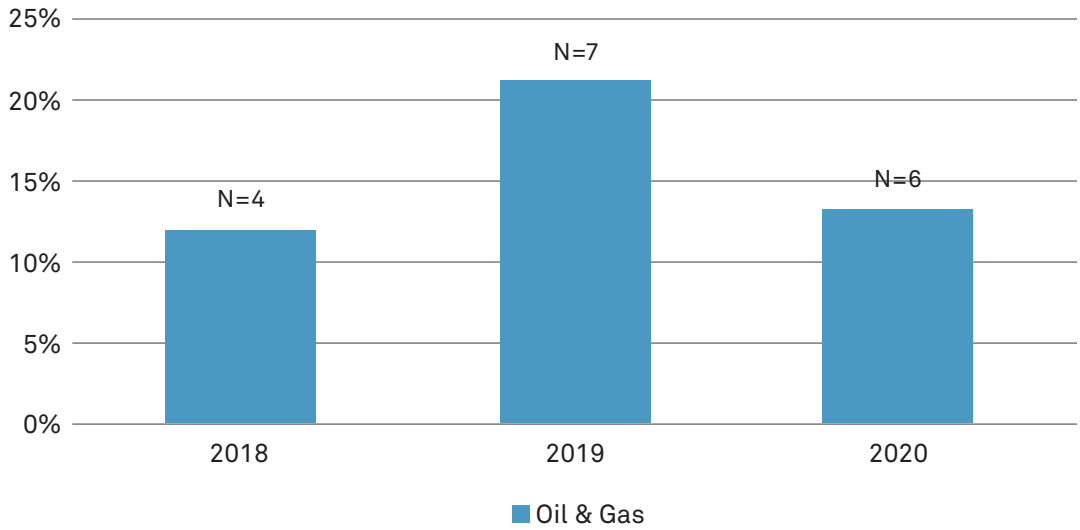
this impending downside demand, but instead investing in material opportunities that will seek to fill the vacuum that decreased demand for motor oil will create.

While there is a decrease in the percentage of overall CSA respondents declaring electrification of transport as an emerging risk from 2018 to 2020, there is an absolute increase in the number of companies reporting on this risk. However, expectedly and maybe more pertinently, in 2020 companies' reporting centered on the current historic state of the market and its anticipated ripple effects in the near and medium future. Notably, in 2020 the oil sector experienced extreme price volatility evidenced by historic lows resulting from a COVID-19 led demand destruction and the lack of cohesion in an oil deal that would have curbed oil production in an effort to stabilize the market. While the electrification of transportation will nevertheless have an impact on producers' and refiners' demand, more immediately, companies are responding to today's market situation.

Additional notable material ESG criteria at the fore of many companies' agendas and reporting include occupational health and safety, disaster avoidance, and risk mitigation. These range from low-probability events with devastating consequences to more frequent low-impact events, and energy portfolio allocation. All of which could represent significant material costs to the company if not ensured.

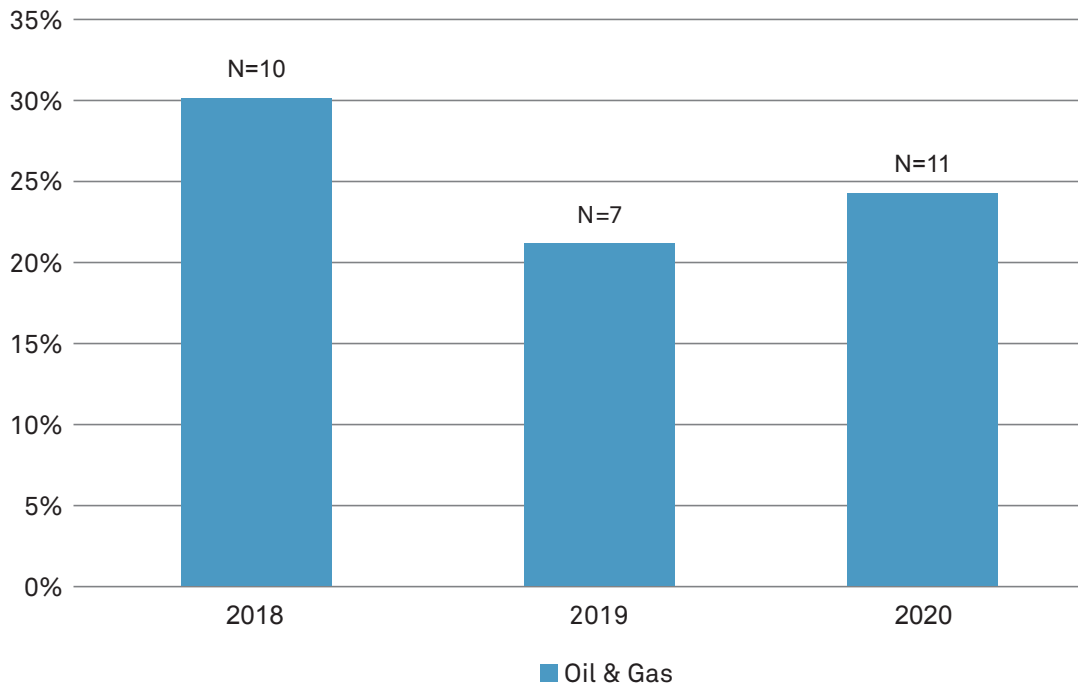
- Safety management remains one of the pre-eminent material issues for oil companies given the particularly risky nature of the operations and the likely harsh conditions or locations in which they operate.
- Prevention of accidents not only ensures the safety of their employees, but also protects the environment, safeguards continued operation and production, and contributes to their social license to operate.

Figure 5: Percentage of Oil & Gas companies reporting on EVs and Alternative Drive Trains as a material issue. (N = number of companies that have responded that EVs and alternative drive trains are a material issue)



Source: S&P Global, data compiled from companies' annual and sustainability reports.

Figure 6: Percentage of Oil & Gas companies reporting on EVs and Alternative Drive Trains as a long-term emerging risk. (N = number of companies that have responded that EVs and alternative drive trains are a material issue)



Source: S&P Global, data compiled from companies' annual and sustainability reports.



Oil majors are recognizing a material opportunity to protect and grow their shareholder value early in the wave of the electrification of transport, and they are well-positioned for it.

- While oil and gas production/refining and reserves are still the key drivers for value creation and future earnings in the sector, companies are faced with increasing pressures from investors, policymakers, and consumers to decarbonize their business model in the long run.

Over the next two decades decreased refined product demand due to vehicle electrification will not be the final blow for oil companies, particularly as overall oil demand is expected to continue to increase, until plateauing in the latter half of the 2030's. This stems in part from growing demand from emerging markets for transportation, and strength in petrochemicals (Figure 1). As such, the long lead time ahead of this tipping point should allow for major oil companies to decarbonize their portfolio stepwise and pursue alternative growth routes within

this anticipated new market. This will help overcome the downside demand in their traditional portfolio in favor of natural gas and renewables. More immediately, the existing environment – characterized by a near-term decreased demand, an oversupply of production combined with lower-than-usual prices, and anticipated opportunities in renewables – presents fruitful areas for strategy and restructuring. We anticipate this to more directly impact upstream oil and gas companies conducting exploration and production, yet the symbiotic relationship of the midstream sector to its upstream collaborators suggests that they too may face significant consequences.

Select oil majors have begun to increase their investment and ownership, thus facilitating the electrification of transport. Aggressive investment strategies into EVs, and more generally power, appear to be more than hedging their downside demand from the vacuum left over from decreased demand for traditional oil products. Oil majors are recognizing a material opportunity to protect and grow their shareholder value early in the wave of the electrification of transport, and they are well-positioned for it. Their experience in retail fuel and

power supply position them as natural and competitive contenders. Combined with the compatibility of their traditional business model with new models including power supply and generation through renewable power generation and investments, and their experience with costly and long-term specialized brick and mortar projects and R&D that have long payback periods, positions them as natural and competitive contenders.¹⁶

Total, BO and Shell have engaged in M&A and investments into E-mobility, battery storage, renewable energies, and energy supply, strengthening their position in renewable energy, while blurring the lines of the traditional oil and gas business model to more holistic energy companies. This is particularly pertinent for improving the environmental friendliness of EVs, as the share of energy supplying EVs from renewable sources is set to increase. Total has reinforced their position as a player in electric mobility with their acquisition of 'Blue Point London', which has added more than 1,600 on-street charge points, contributing to their ambition of operating more than 150,000 EV charge points by 2025. This, in addition to their investments

in Saft Groupe¹⁷, EREN Renewable Energy¹⁸, G2Mobility¹⁹, and Direct Energie²⁰, gives a strong market signal of their commitment to the energy transition and positions them as competitive players. BP's investments into Lightsource²¹, Chargemaster²², and StoreDot²³ – and their target of 70,000 EV charge points, a near 10-fold increase from current numbers – make significant inroads in the electrification of transport. Combined with their market signal to significantly reduce hydrocarbon production while increasing renewable power generation 20-fold from 2.5 GW in 2019, these steps highlight their commitment to the energy transition and to becoming a holistic energy company²⁴. Shell established its New Energies division in 2016 focusing on new fuels for transport (biofuels and hydrogen, amongst others) and the entire business process around power, including electricity generation, buying and selling, and direct to consumer supply. Shell's investment and acquisition strategy underlines their dedication to the energy transition, and the electrification of transport more specifically, with particular investments into New Motion²⁵, First Utility²⁶, Greenlots²⁷, Sonnen²⁸, and Green Star Energy & Hudson Energy²⁹.

¹⁶ Georges, P., Ferraris, V., & Vinot, E., (2019). European Utilities May Not Be Best Placed To Grab The Infrastructure Market For Electric Vehicles. S&P Global Ratings, a division of S&P Global Inc.

¹⁷ <https://www.total.com/media/news/press-releases/total-takes-control-saft-groupe-after-successful-tender-offer-which-will-be-re-opened-july-19-august>

¹⁸ <https://www.total.com/media/news/press-releases/total-partners-eren-renewable-energy-expand-its-renewable-business>

¹⁹ <https://www.total.com/media/news/press-releases/electric-vehicle-charging-solutions-total-acquires-g2mobility-and-forms-partnership-nexans>

²⁰ <https://www.total.com/media/news/press-releases/total-completes-acquisition-73-direct-energie-and-files-mandatory-tender-offer>

²¹ <https://www.bp.com/en/global/corporate/news-and-insights/press-releases/lightsource-bp-to-accelerate-global-solar-growth-with-further-investment-from-bp.html>

²² <https://www.bp.com/en/global/corporate/news-and-insights/press-releases/bp-to-acquire-uks-largest-electric-vehicle-charging-company.html>

²³ <https://www.bp.com/en/global/corporate/news-and-insights/reimagining-energy/bp-invests-in-ultra-fast-charging-battery-company-storedot.html>

²⁴ <https://www.bp.com/en/global/corporate/news-and-insights/press-releases/from-international-oil-company-to-integrated-energy-company-bp-sets-out-strategy-for-decade-of-delivery-towards-net-zero-ambition.html>

²⁵ <https://www.shell.co.uk/media/2017-media-releases/electric-vehicle-charging-offer.html>

²⁶ <https://www.shell.co.uk/media/2018-media-releases/shell-completes-acquisition-of-first-utility.html>

²⁷ <https://greenlots.com/greenlots-announces-acquisition-by-shell-one-of-the-worlds-leading-energy-providers/#:~:text=LOS%20ANGELES%2C%20Jan.,of%20Royal%20Dutch%20Shell%20plc.>

²⁸ <https://www.shell.com/media/news-and-media-releases/2019/smart-energy-storage-systems.html>

²⁹ <https://www.shellenergy.co.uk/blog/post/shell-energy-retail-to-acquire-green-star-energy-and-hudson-energy>

This strategy places them in a competitive position to offer a range of complementary services for the energy transition, including EV residential charging options and renewable energy to business and consumers.

Conclusion

Amidst the ongoing energy transition, the automotive industry is moving towards electrification and oil companies are blurring their traditional business models in favor of more holistic energy strategies. This transformation is challenging companies in both sectors to think about emerging topics around EVs and how these will materialize in the form of new risks and opportunities.

The electrification of the transport sector is well underway, and oil producers and automakers are preparing for tipping points in one to two decades.

While such electrification represents an emerging and material risk to oil companies' traditional revenue streams, we are seeing oil majors facilitating the transition and supporting the adoption of EVs and alternative drive trains instead. They are doing so by removing the barriers for consumer adoption and creating long-term shareholder value – filling the vacuum left over from decreased demand of fossil-fuel-based options – while simultaneously decarbonizing their portfolios, and thus appealing to environmentally-conscious investors.

Automotive companies will need to do more than just change their portfolio of cars, but also provide the additional services and products to foster the transition to EV. This may include power supply services such as residential charging stations,

renewable battery sources, or software, amongst others. Such services will likely be developed in collaboration with other energy companies, like the acquisition strategies mentioned above, and with less traditional partners such as software companies, mobility services, and electric utilities.

The energy transition also envelops additional industries, equally driven by the criteria above. The electrification of transport does not only apply to complementary products around the automotive and oil industries: taking a macro viewpoint, we anticipate a diversity of companies that will see opportunities to capture value from this trend. Charging stations do not require the same design as traditional fuel stations, but can instead be incorporated into individual parking locations, malls, and airports. Such ease of access to charging infrastructure and early adoption by businesses not only facilitates refueling at every-day locations but differentiates their offerings against competitors. Heathrow Airport, for example, has committed to install charging at the airport for customers and staff by 2030. Consumers evaluating substitutable products/services may provide a relative competitive advantage to those that offer such services. Electric utilities also have a natural opportunity to fill the vacuum of reduced demand for fossil-fuel-based products within the energy transition and are currently investing similarly to their new energy counterparts: They are partnering directly with automakers and investing in charging infrastructure.



The electrification of the transport sector is well underway, and oil producers and automakers are preparing for tipping points in one to two decades. However, it must also be noted that this may not be enough. The World Benchmarking Alliance recently published the Automotive benchmark³⁰, which analyzes the performance of the top 30 most influential automotive manufacturers and has found that:

- less than 20% of companies have vehicle in-use emission reduction targets sufficiently ambitious to meet the below-2-degree pathway; and
- existing low-carbon vehicle sales are well below the amount required to reach said pathway.

To hold automobile manufacturers accountable and capture this emerging material trend, we intend to launch two new questions within the CSA for automotive companies. In the future, companies will be required to report more extensively on their low carbon strategy, as we expand our coverage of companies' preparation and exposure to the alternative energy transition, particularly electric vehicles for the automotive industry. As forecasts project

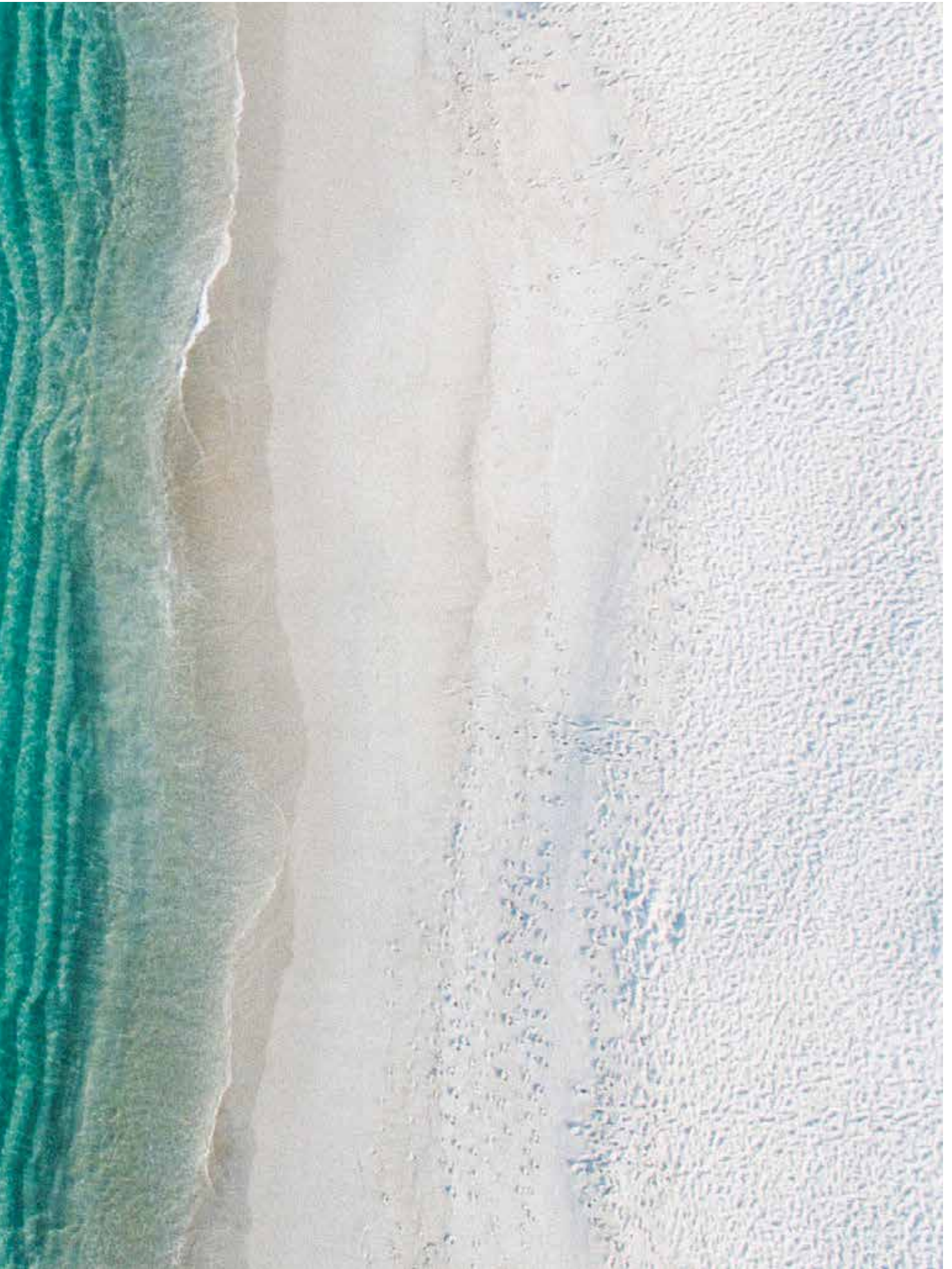
an ever-greater market share for electric vehicles and tighter regulation on tailpipe emissions, with significant material fines, these questions will address (1) battery range and (2) battery efficiency and life cycle. They will essentially capture who will be driving this transition, addressing the average 'fuel' economy and 'fuel' consumption for battery electric vehicles, while also implying reduced vehicle in-use emissions and reduced waste produced. Improved performance and extended driving ranges will ease the anxiety of potential EV customers leading to further adoption. While improved battery efficiency and life cycle will help to ensure more distance is able to be driven for each car before its end of life, hence spreading out the cars embedded emissions over a greater distance and reducing the frequency of waste being created. The questions in the CSA not only look at companies' strategies to reduce the carbon intensity of their car portfolio, but they also assess the exposure of their current portfolio to future regulatory risks and challenge companies on their product stewardship, namely their LCA and end of lifecycle responsibility. ■

Roman Kramarchuk, Head of Future Energy Analytics at S&P Global Platts contributed valuable insights to this report

³⁰ <https://www.worldbenchmarkingalliance.org/publication/automotive/>

Packaging the future

A material matter



Our global plastic consumption is set to double over the next 20 years and the flow of plastic into the ocean is projected to nearly triple within the same timeframe.

Packaging and plastics in a global context

Circular Economy, resource scarcity and conscious consumption; the last decade has borne witness to an exponential rise in the interest in circularity and closed-loop systems from companies, consumers, governments and investors. The topic of plastic use – particularly packaging – has been at the heart of this conversation, as our single-use consumer habits have been examined, and images of unmanaged waste exhibiting household brand names have garnered global attention. Circular principles have multi-trillion-dollar implications¹, and present growth opportunities which align with targets covered by multiple UN Sustainable Development Goals (SDGs), particularly sustainable consumption and production (SDG 12).

The Plastic Investor Working Group, created by the Principles for Responsible Investment (PRI), a UN-supported network of investors, carried out research which highlighted

how, “the plastic value chain is complex, touching most (if not all) business sectors globally, exposing investor portfolios to an array of risks.”² Throughout the last few years, we have seen regulatory, geo-political, and supply chain risks materialize. In October 2020, the WWF, the Ellen MacArthur Foundation and Boston Consulting Group called for a Global treaty on plastic pollution,³ which could harmonise and simplify reporting, and offer greater transparency to better manage these risks.

Our global plastic consumption is set to double over the next 20 years⁴ and the flow of plastic into the ocean is projected to nearly triple within the same timeframe.⁵ As plastic packaging represents a significant portion of our plastic use, and because of its short use-cycle and pervasive nature, efforts to increase circular plastic systems and reduce the impact of inappropriate disposal and environmental leakage have seen a strong focus on packaging.⁶

¹ Ellen MacArthur Foundation (2020), “Financing the circular economy”

² <https://www.unpri.org/sustainability-issues/environmental-social-and-governance-issues/environmental-issues/plastics>

³ WWF, The Ellen MacArthur Foundation & Boston Consulting Group (2020), “The business case for a UN treaty on plastic pollution”

⁴ World Economic Forum (2016), “The New Plastics Economy Rethinking the future of plastics”

⁵ The Pew Charitable Trusts and SYSTEMIQ (2020), “Breaking the Plastic Wave: A Comprehensive Assessment of Pathways Towards Stopping Ocean Plastic Pollution”

⁶ Martin C Heller et al (2020) “Environ. Res. Lett. 15 094034”

Contributors



Rosanna Brady
ESG Operations Specialist
S&P Global



Robert Dornau
Director
Corporate Engagement
S&P Global



Lotte Knuckles Griek
Head of Corporate
Sustainability Assessments
S&P Global



Addressing Plastic in the 2020 CSA

Within this context, all 2020 Corporate Sustainability Assessment (CSA) questions within the Packaging criterion were updated to more accurately reflect the financially material topics addressed above: A new question uniquely devoted to plastics was introduced, and disclosure metrics across all materials expanded to include targets, as well as production volumes and data coverage details.

A similar disclosure approach was adopted for the Use of Recycled and Sustainably Sourced Materials question within the Product Stewardship criterion.

Finally, the number of industries that the Packaging criterion is applied to has also been expanded, in line with the PRI plastic-related risk assessment.⁷

⁷ <https://www.unpri.org/plastics/plastics-the-challenges-and-possible-solutions/4773>. article

⁸ <https://www.unpri.org/plastics/risks-and-opportunities-along-the-plastics-value-chain/4774>. article

⁹ Greenpeace (2019), "Data from the global plastics waste trade 2016-2018 and the offshore impact of China's foreign waste import ban"

The Price of Plastic

Emerging financial materiality of the topic

How and why is this topic financially material?

The PRI Plastic Investor Working Group's report highlights that "the containers and packaging sector, as well as related sectors such as food and beverage and consumer goods, face increasing reputational and regulatory pressures to use alternative materials and recycled content at scale."⁸

Regulatory risks can be found in bans, taxes, levies or regulation: China's 2018 ban on impure recycled plastic scrap led to total plastics exports dropping globally by around 50% from 2016 to 2018 and former key plastic waste exporter countries were left dealing with a surplus of unprocessed or inadequately processed waste.⁹

The number of countries implementing regulations on single-use plastic items has more than doubled over the past five years¹⁰, and both European¹¹ and US¹² markets face upcoming packaging legislation such as 25% minimum recycled content thresholds, and a European plastic tax from January 2021¹³, closely followed by a similar initiative in the UK in 2022.¹⁴

Risks can also be found in access to recycled plastic feedstocks, and their associated costs: Lockdowns and social distancing lead to a drop in recycling rates in 2020 affecting recycled PET supply, and the fall in crude oil price at the beginning of the year meant during the height of the pandemic, post-consumer PET bottle bales became more expensive than virgin PET feedstocks.¹⁵

Continuing with a business as usual scenario, by 2040 businesses will face an annual financial risk of US\$ 100 billion.

This places an economic burden on companies already struggling to meet recycled content targets, as minimum recycled content legislation is enforced and companies may be forced to pay a premium for recycled content. Transition to other alternative materials aside from recycled content will likely also have cost implications for companies, not only at the research & development and sourcing stages, however also in operational costs. Companies that are introducing more aggressive internal targets ahead of legislation, adapting their supply chain and budgeting to absorb these costs, will find themselves ahead of those who don't.

Further risks identified by the group include the reputational risks from increased public scrutiny, the impact of using alternative materials for plastic producers, access to raw materials to produce recycled plastics (for producers), and scalability of new business models and market acceptance.¹⁶

The PRI's Plastic Investor Working Group consists of 29 global investors representing US\$5.9 trillion in assets; the interest towards addressing plastics in investment solutions from this volume of assets reinforces the financial materiality of this topic for companies.

Internalising externalities

As well as the risks and costs that we can currently quantify, we must consider the external costs of mismanaged packaging waste to society and the environment, and the financial risk that this would pose, should companies be forced to internalize these costs.

The Pew Charitable trusts estimates that by continuing with a business as usual scenario, by 2040 businesses will face an annual financial risk of US\$100 billion if governments require them to cover waste management costs at expected volumes and recyclability.¹⁷

¹⁰ Ibid, see 3

¹¹ Directive of the European Parliament and of the Council on the reduction of the Impact of Certain Plastic Products on the Environment (2019)

¹² <https://www.wastedive.com/news/tracking-the-future-of-us-recycling-policy-in-congress/570778/>

¹³ European Council (2020), <https://www.consilium.europa.eu/media/45109/210720-euco-final-conclusions-en.pdf>

¹⁴ <https://www.gov.uk/government/publications/introduction-of-plastic-packaging-tax/plastic-packaging-tax>

¹⁵ S&P Global Platts

¹⁶ Ibid, see 8

¹⁷ Ibid, see 5

The True Cost of Plastic Pollution

It has long been recognised that due to its durability, plastic pollution poses a significant threat to both marine and terrestrial ecosystems. However, with the exponential growth in plastic production and associated pollution, there has been increasing recognition of the negative impacts of plastic beyond just the environment.

While the direct impacts of plastic pollution on biodiversity such as entanglement and ingestion, are relatively well documented, with over 900 species known to be affected by plastic debris¹⁸, indirect impacts across the entire life cycle of plastic products from production to end-of-life tend to receive less attention. However, it is important to recognise that plastic also has significant climate impacts across both the production and waste management phases. With plastic production becoming one of the fastest growing uses of fossil fuels, based on current projections, production and incineration of plastics will account for 10 - 13% of the annual 1.5C carbon budget by 2050¹⁹.

It is clear that plastic pollution also represents a significant economic cost to society at large: This is seen both in terms of the direct impacts associated with the loss of tourism income, damage to fishing vessels and costs of increased waste management infrastructure, as well as the indirect impacts associated with the loss of ecosystem services. Although the full environmental impacts are often difficult to monetize, it is estimated that in 2011 alone there was a global loss of up to \$2.5trn in benefits derived from marine ecosystem services due to plastic pollution²⁰.

Lastly, it is also important to consider the human impacts of plastic pollution. While wealthier communities tend to generate higher volumes of waste, it is typically poorer communities who experience the biggest social impacts of plastic pollution. Communities with inadequate waste management are exposed to air pollution from spontaneous fires in dumps, disease and toxins from dump site contents and its decomposition, while waste pickers in the informal sector face dangerous work and living conditions. There are also significant flooding and associated disease-related risks from clogged drainage and sewage systems.



*John Duncan,
Initiative Lead,
No Plastics in Nature, WWF International*

¹⁸ IKuhn et al (2020), "Marine Pollution Bulletin: Quantitative overview of marine debris ingested by marine megafauna"

¹⁹ CIEL (2019), "Plastic & Climate: The Hidden Costs of a Plastic Planet"

²⁰ Beaumont et al (2019), "Marine Pollution Bulletin: Global ecological, social and economic impacts of marine plastic"

Producing packaging made from 100% recyclable material is not beneficial if the actual recycling is not taking place at scale.

Current proposed solutions and limitations

Stakeholders along the value chain need to work together to collectively stop the linear²¹ flow of packaging into our waste streams and our natural environment, while ensuring that we are preserving the value of the materials.

Multiple solutions and strategies are available to corporates and the most common solutions are discussed below:

Recyclable packaging

Creating packaging from material that is recyclable is currently a popular solution for many companies and, when practised correctly, this method has the strong advantage of keeping the value of a material within the economy.

For the 2020 CSA we aligned our definition of recyclable packaging with the Ellen MacArthur Foundation's definition: "A packaging or packaging component is recyclable if its successful post-

consumer collection, sorting, and recycling is proven to work in practice and at scale."²² This differentiates between what is technically recyclable, and what recycling infrastructure exists, in order to avoid classing packaging as recyclable in geographies where this recycling is not available.

Compostable packaging

Compostable packaging avoids landfill or incineration, supports a closed-loop system with nutrients being returned to the soil and offers a solution where packaging may contaminate organic waste streams.²³ However, as with recycling, the compostability of packaging relies on an appropriate infrastructure as well as cross-industry alignment to be in place to ensure that it is actually happening.

Again, for the CSA we have used the definition by the Ellen MacArthur Foundation: "A packaging or packaging component is compostable if it is in compliance with relevant international compostability standards and if its successful post-consumer collection, sorting, and composting is proven to work in practice and at scale."²⁴

Inclusion of post-consumer recycled content (over virgin content)

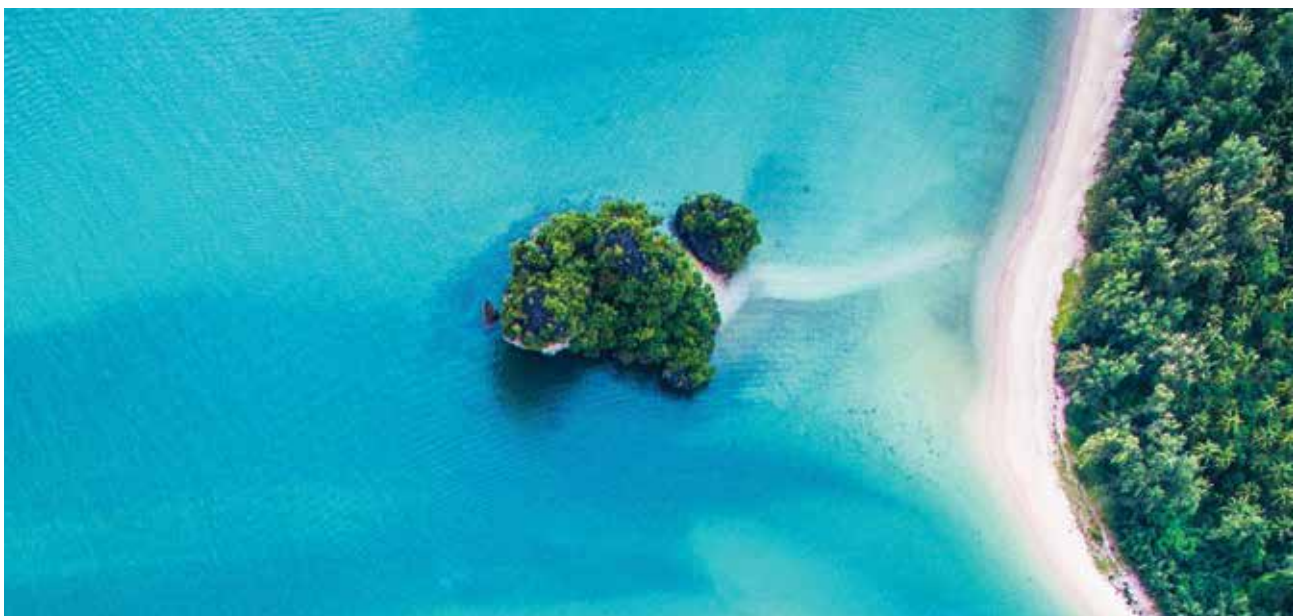
As stated above, producing packaging made from 100% recyclable material is not beneficial if the actual recycling is not taking

²¹ A linear model of resource consumption is one that follows a 'take-make-dispose' pattern, where products are discarded by the consumer once they no longer serve their purpose. The Ellen MacArthur Foundation (2013), "Towards The Circular Economy"

²² The Ellen MacArthur Foundation (2018), "New Plastics Economy Global Commitment"

²³ The Ellen MacArthur Foundation (2020), "Upstream Innovation: A guide to packaging solutions"

²⁴ Ibid, see 20



place at scale. In order to create a market for high quality recycled content – thus increasing investment in the collection, sorting and recycling industry – demand needs to be created by producers through the inclusion of high percentages of post-consumer recycled content²⁵ within their packaging. This equally reduces the reliance on virgin (fossil) feedstocks.

“Designing products for reuse is preferable to simple substitution with another single-use material.”

Bio-based plastic packaging

The term bio-based implies that the material or product is derived from biomass, or plants, which for bio-based plastics is typically corn, sugarcane, or cellulose.²⁶ The biggest advantage of the use of bio-based materials is the diversion from fossil feedstocks to a regenerative material. However, care must be taken, as bio-based does not automatically equal bio-degradable, nor compostable. In the 2020 CSA, companies were not requested to disclose data separately around their use of bio-based plastics.

Reusable packaging

For the 2020 CSA, we defined reusable packaging as “Packaging which has been designed to accomplish or proves its ability to accomplish a minimum number of trips or rotations in a system for reuse. The packaging needs to be refilled or used again for the same purpose for which it was conceived”, basing the definition on the recommendations of the Ellen MacArthur Foundation.²⁷

Reusable packaging can offer many benefits, not only to the consumer who can benefit from a more personalised and improved customer experience, but also to the company, who can benefit from cost savings and access to data on customer preferences and habits. The advantages of a re-use model will be discussed in more depth below in the section ‘Packaging commitments’.

Reduction or elimination

It is imperative that policies, innovations, consumer behaviour shifts and incentives are implemented that lead to reduced material demand or product redesign for avoidable plastic, which should not require a replacement.²⁸

In the 2020 CSA, companies were requested to report their total weight of all plastic packaging produced over the last four years and if they had a target for this figure for 2019.

Substitution for non-plastic materials

Substitution involves plastic packaging being replaced with an alternative material – for example paper or aluminium – for which effective recycling or composting is possible. However, the sustainability of sourcing raw materials, existing recycling infrastructure and the carbon footprint should all be included in a lifecycle analysis when considering substitution. The Pew Charitable Trusts’ report Breaking the Plastic Wave advises that “designing products for reuse is preferable to simple substitution with another single-use material.”²⁹

Within the Packaging Materials question, the CSA measures volumes of glass, metal and wood and paper fiber packaging.

²⁵ Ibid, see 22

²⁶ <https://www.european-bioplastics.org/bioplastics/> ”

²⁷ Ibid, see 20

²⁸ Ibid, see 5

²⁹ Ibid, see 5

Reporting landscape and availability of data

As the world has sought solutions to the plastics issue, the need for more and better data on plastics use and its fate after-use has become a priority. In response to increasing competitive, consumer and regulatory forces, businesses across the plastic value chain are starting to wrestle with the difficulties of collecting and using this data. As a result, the availability and quality of company-level data on plastics is undoubtedly improving.

Participation in voluntary initiatives with mandatory annual public reporting such as the *New Plastics Economy Global Commitment*³⁰ – whose signatories account for more than 20% of the global plastic packaging market – has led many businesses to assess the quantity and types of plastic packaging they use for the first time.³¹ This has driven substantial improvements in their internal data – increasingly being brought within scope of third-party verification processes – and thereby their understanding of their packaging portfolio and ability to drive progress. At the same time, new policy measures targeting plastic packaging are forcing businesses to track new data to ensure compliance. The investment community is in turn placing more emphasis on this data, increasingly using it to inform engagement with portfolio companies.

With businesses keen to communicate high ambitions and progress around plastics, inconsistencies and lack of clarity on certain terms and metrics can make it difficult to understand and compare different claims. To overcome this barrier to industry transparency, the adoption of common metrics and definitions by major reporting platforms has been an important step forward. Alignment is now being driven through a number of initiatives. Signatories to the New Plastics Economy Global Commitment now report annually against a common set of guidelines and metrics – these same definitions have been incorporated into the packaging criterion of the Corporate Sustainability Assessment, as well as the expanding New Plastics Economy Plastics Pact network and beyond.

Despite this progress, there remains huge scope to improve availability and quality of plastic packaging data. In particular, and as demonstrated by the insights shared in this publication, the vast majority of businesses outside the Global Commitment still do not collect and/or publicly disclose data related to their use of plastic packaging. Those failing to take action to track this data now risk falling far behind the rest of the industry in managing the risks – and exploiting opportunities – associated with their use of packaging.



Lily Shepherd
Programme Manager - Strategic Engagements,
New Plastics Economy
Ellen MacArthur Foundation

³⁰ <https://www.newplasticseconomy.org/projects/global-commitment>

³¹ Ellen MacArthur Foundation & UN Environment Programme (2020), "Global Commitment 2020 Progress Report" <https://www.ellenmacarthurfoundation.org/global-commitment>

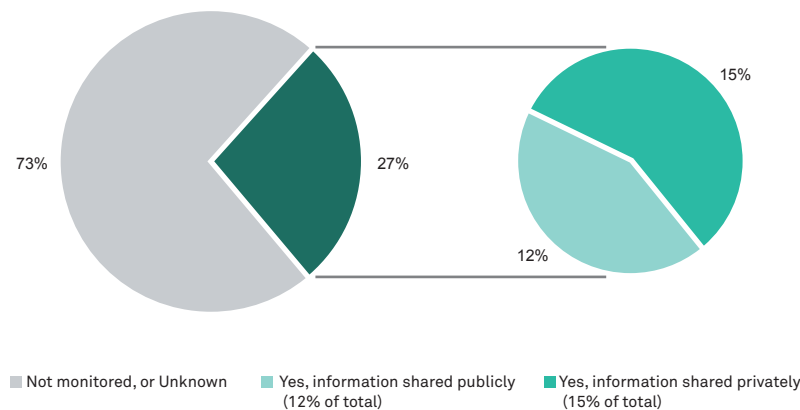
Non-Plastic Packaging Materials

To maintain a holistic overview of packaging trends across all materials commonly used, in 2020 we updated the CSA questions requiring disclosure of wood and paper fiber, metal and glass usage, and their respective recycled or certified content and targets. This affected companies in industries such as beverages, food products, retailing, etc however not in the containers and packaging industry.

Monitoring

The results highlight that there is significant progress to be made; both in terms of monitoring materials used and subsequent disclosure. Barely more than a quarter of respondents confirmed they are monitoring the amounts of packaging materials used and, among those, less than half are reporting their usage publicly:

Figure 1: Companies monitoring the amounts of packaging materials used



Source: SAM CSA 2020; performance based on 515 responses by companies actively participating in the CSA as well as those assessed on Publicly available information.

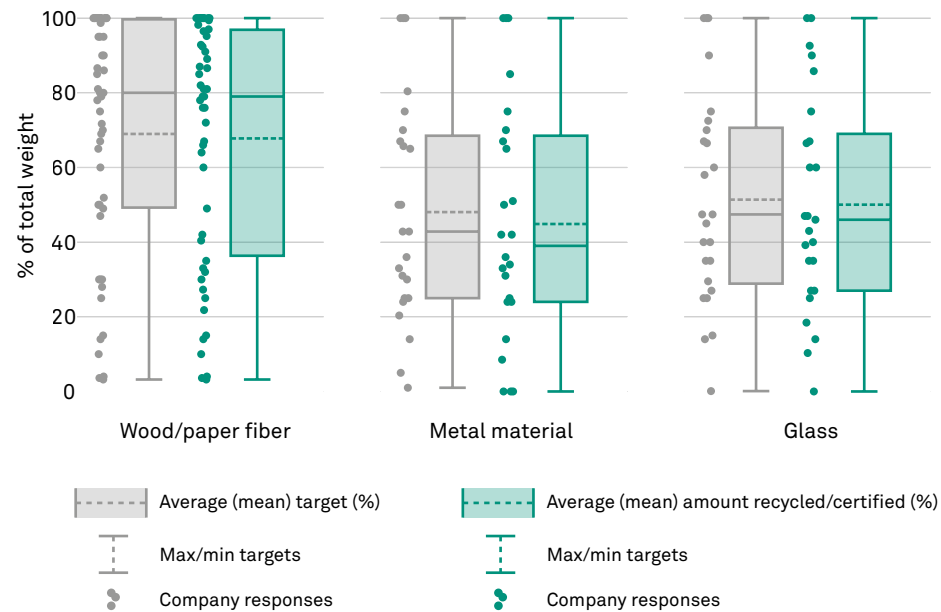
Amongst the 27% of companies who monitor the amount of packaging materials used, we observe that monitoring does not necessarily extend to target-setting: Only a quarter of companies are setting targets related to inclusion of recycled or certified glass content, and this drops to a fifth for metal. For wood or paper fiber, there is a slightly higher rate of target-setting at just under 40%, with a quarter of those having 100% recycled/certified content targets.

Considering packaging-composition-related commitments, we see that the use of recyclable packaging is the favoured commitment, stated by 30% of companies assessed.

Targets

If we consider the average recycled/certified content targets for 2019 among those who provided data, alongside the average actual achieved amounts of recycled content we see the below:

Figure 2: Average Achieved Recycled/Certified Content vs Average Target (2019)



Source: SAM CSA 2020; data considers 141 companies who are monitoring their packaging materials and their covered operations

For wood and paper fiber, we observe that companies set higher targets on average compared to metal and glass, and the average percentage realised is also noticeably higher. Among the data for metal and glass, we see average targets and average actual percentages achieved in 2019 hovering around 50%, however given the wide spread of responses, this is more a reflection that companies are all at very different stages of progress, and that there is currently not one uniform trend.

Considering that certifications such as Forest Management Certification (FSC) have been in place since the mid-90s,³² the spread of companies' realised percentages of recycled and/or certified material wood or paper fiber feedstocks seems lower than expected.

Equally, metals commonly used within packaging such as aluminium (used for

beverage and aerosol cans and food trays) are often touted as 'infinitely recyclable', and that the use of recycled aluminium saves up to 95% energy compared to virgin feedstocks.³³ Considering that the aluminium industry is known across Europe for its extremely high rates of capture and recycling, it is surprising that targets and attained percentages are not reported higher on the scale.

Containers and Packaging

When reviewing the performance of companies specifically within the containers and packaging industry, we see almost 75% are monitoring the amounts of packaging materials used in some form. However, in line with the industries discussed above, the percentage of companies setting targets for recycled content remains low, and the availability of data is too limited to draw out significant trends for 2019.

³² <https://www.fsc-uk.org/en-uk/about-fsc/who-is-fsc/our-history>

³³ <https://alupro.org.uk/consumers/why-is-recycling-aluminium-so-important/>

Aside from increasing the amount of recycled content within their own packaging, companies have a responsibility to ensure that packaging made with recyclable materials ends up in an appropriate recycling facility.

Corporate Plastic Practices

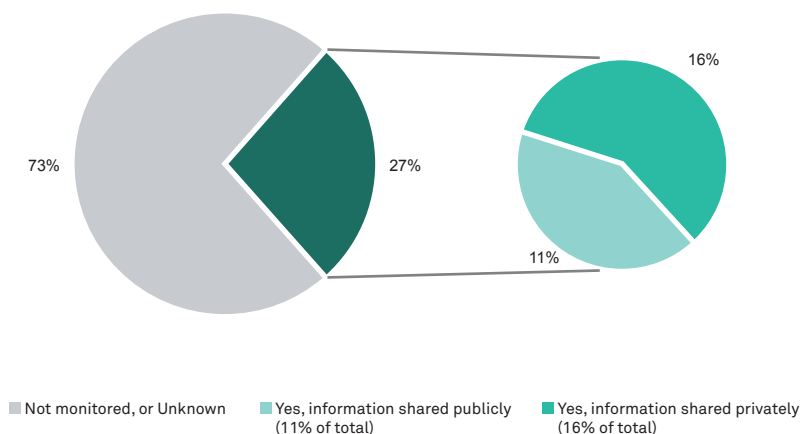
The *Plastic Packaging* question seeks insight into companies' levels of monitoring their plastic packaging volume and materials, as well as their targets for recyclable and compostable plastic packaging, and the percentage of recycled content included.

Monitoring and availability of data

Rates of monitoring

Similar to wood/paper fiber, metal and glass, we observe that just over a quarter of companies state they are monitoring their plastic packaging performance in terms of total weight of all plastic packaging and related shares of recyclable, compostable plastic packaging and the share of recycled content in their plastic packaging:

Figure 3: Companies monitoring their performance with regards to plastic packaging



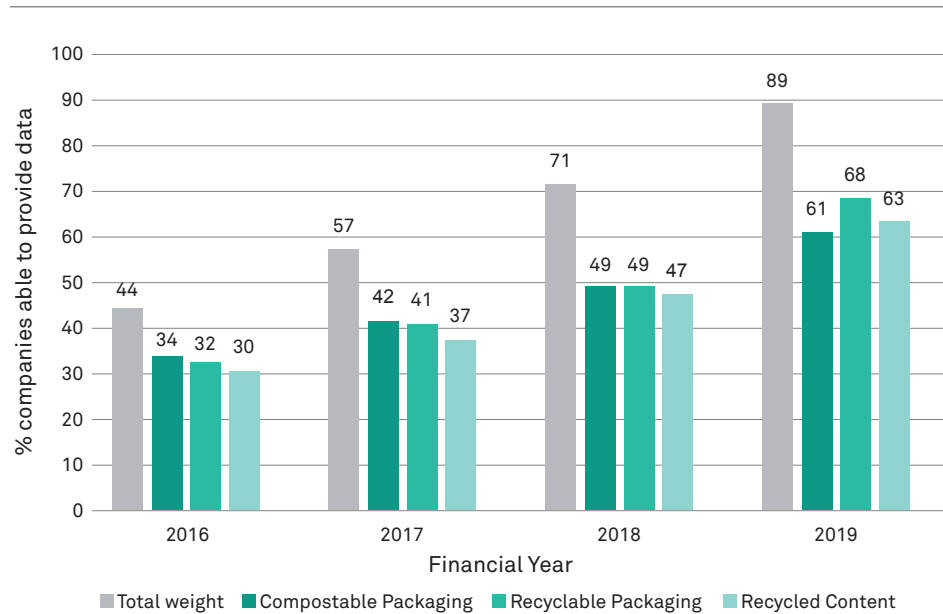
Source: SAM CSA 2020; based on 525 responses by companies actively participating in the CSA as well as those assessed on Publicly available information.

Data availability

In the 2020 CSA we asked companies to provide figures for their total weight of packaging produced, and the relevant shares of plastic type, in each of the last four years. The analysis below (figure 4) considers only this quarter of companies (figure 3) who actively monitor their performance.

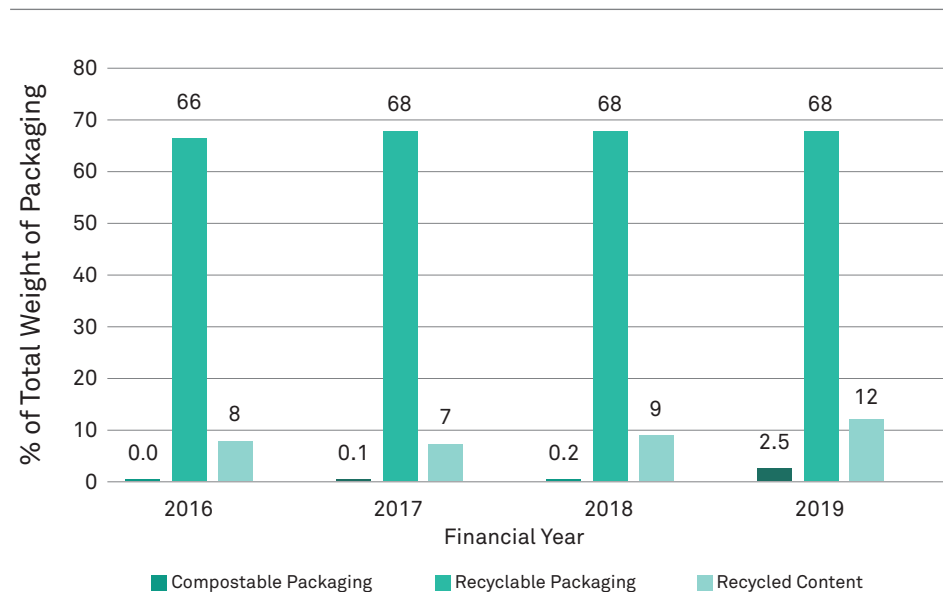
In general companies seem to improve their coverage of data-availability over the years: The number of companies that can provide data for 2019 is double the number who were able to provide data for 2016. Similarly, we see a two-fold increase in the percentage of companies monitoring their volumes of recyclable packaging and recycled content. However, while a larger share of companies has some data available for 2019, the average coverage as percentage of goods sold reduced from over 80% in 2018, to an average coverage of approximately 70% in 2019.

Figure 4: Packaging Data Availability



Source: SAM CSA 2020; Data for all years provided in 2020; Data based on 142 companies they are actively monitoring their performance.

Figure 5: Average Content % Achieved (of Total of all Plastic Packaging)



Source: SAM CSA 2020; Data for all years provided in 2020; Data based on 142 companies stating they are actively monitoring their performance and their covered operations.

Much stronger commitments to the removal of unnecessary packaging and overall packaging reduction are needed to stop our current flow of mismanaged plastic waste.

Transparency doesn't equal sustainability

Despite the positive trend of increasing data collection and monitoring, there remains significant progress to be made in terms of target-setting – both in the number of companies setting targets across these areas and how ambitious the set targets are – and performance in general.

General performance

Despite twice as many companies having recyclable packaging data available for 2019 compared to for 2016 (figure 4), when taking an average of the actual rates achieved, we see stability in this percentage across the last four years. This indicates that companies are yet to significantly embrace the opportunities of switching away from hard-to-recycle plastics in favour of those currently recycled at scale.

We observe average recycled content increasing by approximately a third from 2018-2019 from 9% to 12% and average compostable content 13 times larger in 2019 than 2018, albeit only to 3%.

2019 Target setting

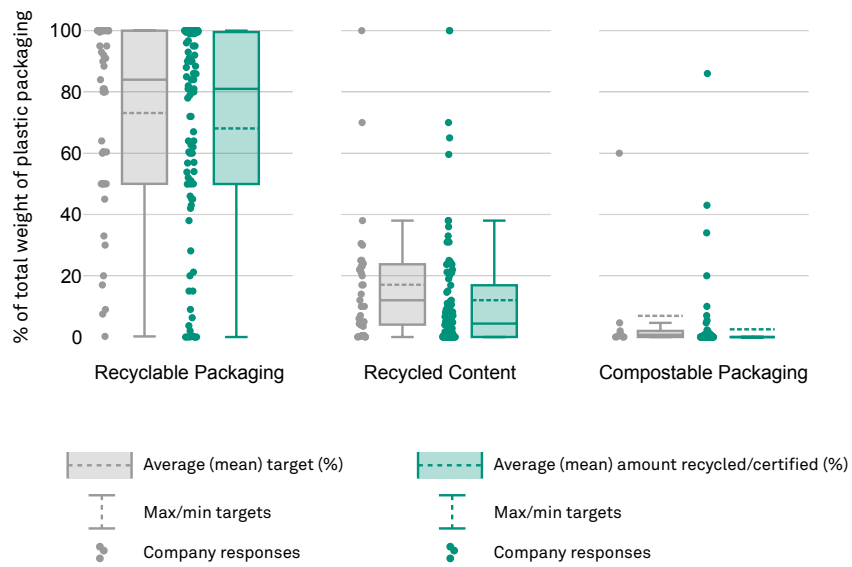
Among companies that have shared that they are monitoring some form of their plastic packaging usage (the 27% above), we see the most popular target being set by companies relates to use of recyclable material, with a third of companies doing so. This is followed by a recycled content target, shared by a quarter of companies. Only 7% of companies set a compostable target.

2019 Performance

When comparing the average 2019 targets set by companies against the average percentages achieved during 2019, we observe the following:

- Use of recyclable packaging stands out as the area where companies have focused their attention, both regarding the average target for recyclable packaging, which reaches almost 75%, and a general higher average performance.
- Although we see companies aiming for an average recycled content target of 17%, average current realisation rates cluster lower on the scale at 12%.
- Compostable packaging remains a topic with predominantly low target setting, and even lower average performance, despite a few companies reporting high percentages in this area.

Figure 6: Average Achieved Content Included vs Average Target Content (2019)

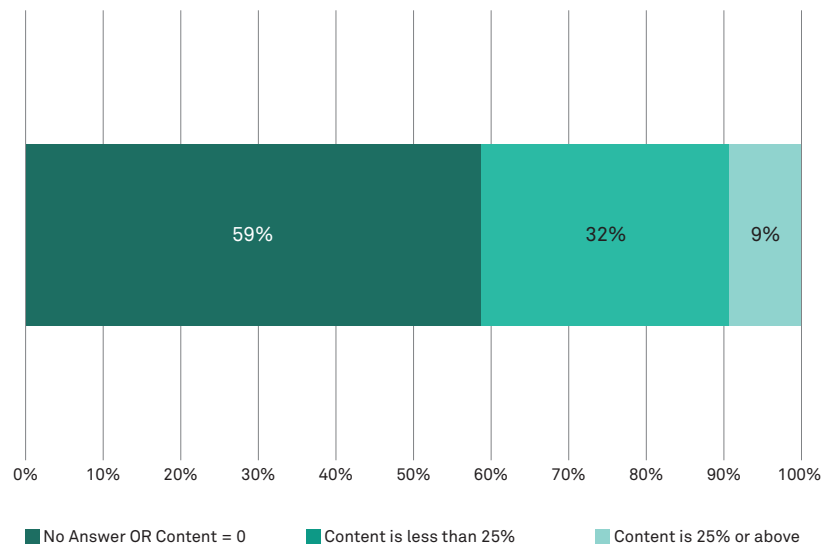


Source: SAM CSA 2020; data considers 142 companies who are monitoring their packaging materials and their covered operations.

Recycled content: Preparedness

When we consider company preparedness for the upcoming legislation, such as the 25% recycled content by 2025 that the EU and some US states have passed, we observe that in 2020, the percentage of companies currently above the 25% target inclusion rate is less than 10%, leaving nine out of ten companies seemingly unprepared:

Figure 7: Company Inclusion of Recycled Content (2019)



Source: SAM CSA 2020; Data based on 142 companies actively monitoring their performance and their covered operations.

However, if we refer back to Figure 6, between 2018 and 2019 we saw companies reporting an increase of 30% in recycled content included; if this rate of increase is maintained over the next five years by those currently monitoring, this would bring the proportion of companies who are prepared close to a third. However, this does not take into account the future performance of those who did not disclose data in 2019.

Packaging commitments

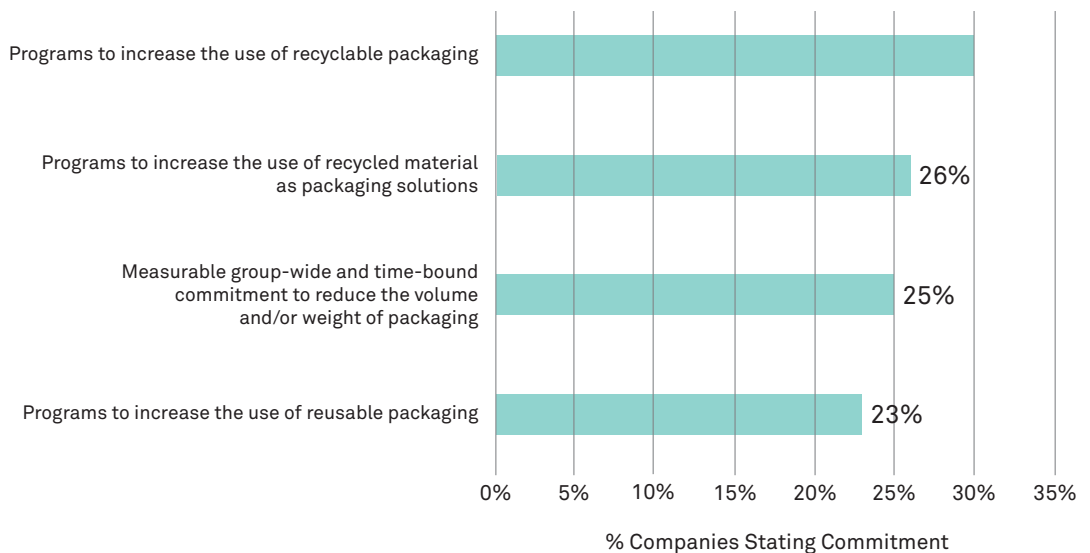
In 2020 we wanted to take a deeper look at what companies are publicly committing to regarding their packaging strategy and which solutions companies are favouring moving forward. The new Packaging Commitments question requests information on commitments across seven different areas, including single-use elimination, R&D spend and the use of recycled content.

We found that just over 50% of the 525 companies assessed are addressing at least one environmental aspect publicly in their strategy and giving examples of implementation of that commitment. Given the global consumer, government and investor focus on this topic, it seems surprising and risky that such a high number percentage of companies are choosing not to share their commitments and programs publicly.

Packaging Composition

Considering packaging-composition-related commitments, we see that the use of recyclable packaging is the favoured commitment, stated by 30% of companies assessed. Increased inclusion of recycled content and packaging reduction were chosen by approximately a quarter of respondents, with programs to increase the use of reusable packaging following closely behind:

Figure 8: Composition-related commitments (% companies stating this commitment)



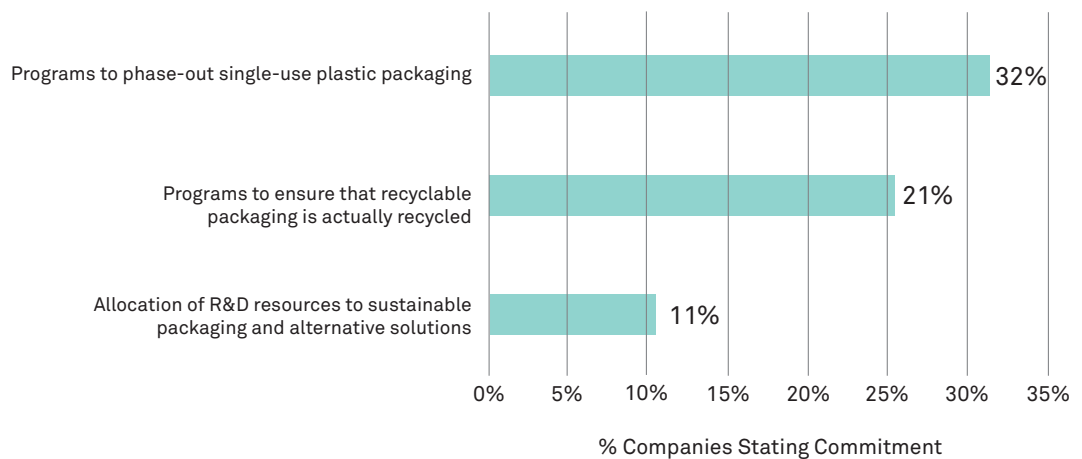
Source: SAM CSA 2020; Graph shows % of respondents, based on 525 responses by both companies actively participating in the CSA as well as those assessed on publicly-available information. Commitments must be public. Companies select all answers that apply.

- Considering the upcoming regulation on recycled plastic content quotas, it is surprising that only 26% of companies are publicly stating that this forms part of their packaging strategy and sharing details of programs they have in place. A lack of industry-wide adoption of this practice will expose companies to risks when faced with legislation such as the EU plastic packaging tax.
- Equally, much stronger commitments to the removal of unnecessary packaging and overall packaging reduction are needed from companies in order to stop our current flow of mismanaged plastic waste.
- The low number of companies stating their commitment to reusable packaging is a missed business opportunity, as laid out by the Ellen MacArthur Foundation below.

Packaging Strategy

Considering more strategic related packaging commitments, we see varied levels of adoption amongst companies assessed:

**Figure 9: Strategy-based packaging commitments
(% companies stating this commitment)**



Source: SAM CSA 2020; Graph shows % of respondents, based on 525 responses by both companies actively participating in the CSA as well as those assessed on publicly-available information. Commitments must be public. Companies select all answers that apply.

- It is not surprising that programs to phase out single-use plastic packaging are the most commonly stated commitment, not only due to the intense media attention that the topic of single use has received, but also as this area may offer common easy wins for companies (removal of single-use plastic bags, straws etc). However, once bans on these single-use items become more commonplace, we will see if companies translate this into a reduction of general unnecessary single-use packaging and an increase in reusable models.
- Aside from increasing the amount of recycled content within their own packaging, companies have a responsibility to ensure that packaging made with recyclable materials ends up in an appropriate recycling facility. Currently only a fifth of companies are committed to these programs, which highlights a need for more collaboration industry-wide and with governments and local authorities to ensure implementation of deposit return schemes (DRS) (currently popularly implemented in countries such as Germany, Norway and Sweden and planned for the UK).
- The least popular category among the commitments is the allocation of R&D resources to development in this area; only one in ten companies gave public examples of commitments, implying a general preference for existing – rather than development of new – solutions.

Reuse as a business opportunity

Reuse models have recently gained momentum in the world of packaging, driven by increasing recognition of their potential to both reduce plastic waste and pollution, and unlock significant business benefits.

The innovation opportunity around shifting to reusable packaging is estimated to be worth more than USD 10 billion.³⁴ By leveraging digital technologies and aligning with shifting user preferences, reuse can help to reduce costs of production and transport, adapt products to individual customer needs, optimise operations, build brand loyalty, improve user experience, and gather consumer intelligence.

The four business-to-consumer reuse models

Reusable packaging is designed to be used multiple times, for its originally intended purpose, as part of a dedicated system for reuse. There are four different business-to-consumer reuse models:³⁵

Refill at home: Users refill their reusable container at home – for example, with refills delivered through a subscription service.

Refill on the go: Users refill their reusable container away from home – for example, at an instore dispensing system.

Return from home: Packaging is picked up from home by a collection service –for example, by a logistics company.

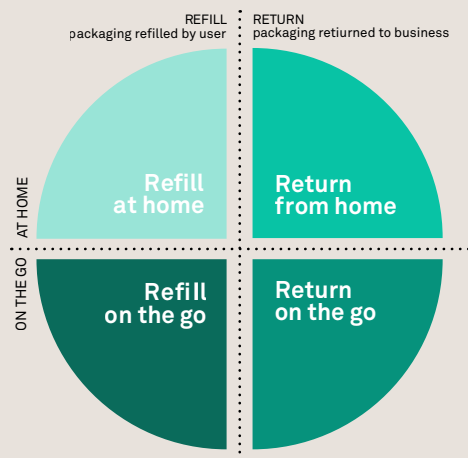
Return on the go: Users return the packaging at a store or drop-off point – for example, in a deposit return machine or a mailbox.

In addition to these business-to-consumer models, a variety of business-to-business reuse models exist. These range from individual companies reusing their own transport packaging to industry-wide reuse systems where reusable packaging is standardised.

Businesses' approach to reuse models

The growth in the number of reuse-focused pilots, commitments, research initiatives, and start-ups launched over the past two years is proof of the increasing interest in reusable packaging models.

The overall proportion of packaging designed to be reusable remains low – just 1.9% of plastic packaging put on the market by Global Commitment signatories in 2019 was reusable.³⁶ However, examples of substantial existing reuse-based businesses are provided by FMCG giants The Coca-Cola Company, which delivers 23% of its overall global sales volumes through reuse and packageless models, and Danone S.A., which delivers approximately 50% of its plain water business volume via reusable containers and jugs.³⁷



³⁴ Ellen MacArthur Foundation (2020), "Upstream Innovation: A guide to packaging solutions"

³⁵ Ibid, see 28

³⁶ Ibid, see 28

³⁷ Ibid, see 28

Many businesses are working to test and implement reuse models across their portfolios and markets. We are seeing a particular focus on refill models among businesses in the household, personal care, and cosmetics sectors – both refill on the go, through bulk dispensers, and refill at home, through concentrated and compact refills. SC Johnson, for example, now offers refillable cleaning products that account for 17% of its total packaging weight, while Natura Cosmetics is aiming to expand availability of refill options to cover 50% of all product lines by 2025 (up from 10% today). Food applications are also a growing area of focus, with 20% of businesses in the Global Commitment identifying this as an opportunity for future expansion of reuse efforts.³⁸

An increasing trend is the use of smart dispensers to improve safety and hygiene of refill systems. Start-ups such as EcoCarga, Algramo and MIWA are working with sensors that recognise when a package is in place, automatically dispense the required quantity, register product information, and facilitate cash-free payments.

Progress at scale on reuse requires fundamental changes to packaging and delivery models which take time to create, test, and scale. Looking ahead, the large number of businesses investing in piloting reuse solutions points to growth to come. 39% of signatories to the New Plastics Economy Global Commitment had reuse pilots in progress over the 2019 reporting year, with a further 17% reporting plans to deliver pilots going forward.³⁹ While this is positive, we will need to see businesses further increase their level of ambition, attention, and investment in reuse to trigger a significant shift over the next few years.

*Lily Shepherd,
Programme Manager - Strategic Engagements,
New Plastics Economy
Ellen MacArthur Foundation*

Conclusion

The topic of packaging will only continue to grow in importance, for companies, consumers, governments, and investors, presenting both risks and opportunities along the way. Risks remain highly regulatory and reputational, but opportunities exist for proactive companies to attract the attention of investors.

The 2020 CSA highlighted that currently only a quarter of companies are actively monitoring their performance regarding their plastic and other raw material packaging. Among those who are monitoring, not only do we see a low percentage of companies setting targets, but that those targets need to be more ambitious – particularly concerning recycled content – to face regulatory change and solve our current packaging dilemma.

The use of recyclable material is currently the most employed method of companies in ensuring circularity of systems, and one of the most common public commitments moving forward. However, companies will need to pay more attention to other solutions, to ensure that they can adapt to the optimum solution for each location and market, and reap the different benefits that each solution offers. ■

³⁸ Ibid, see 28

³⁹ Ibid, see 28

The way forward

With regulatory and public pressure around use of plastics continuing to mount and the approach of 2025 target deadlines, we expect progress towards a circular economy for plastic packaging to accelerate in the coming years.

Businesses representing more than 20% of global plastic packaging volumes are now aligned behind a common vision of a circular economy for plastics and working towards ambitious 2025 targets through the New Plastics Economy Global Commitment.⁴⁰ Among this leading group of businesses, we are already seeing strong growth in recycled content (increasing 22% between 2018 and 2019), alongside widespread phase out of a number of problematic materials and testing of reuse models.⁴¹ Growing adoption of overall plastic or virgin plastic packaging reduction targets should also drive a step change in efforts to design out the need for single-use packaging in the coming years.

However, progress is not universal, and a substantial acceleration will be needed in several areas in order to achieve 2025 targets. In particular, a significant proportion of businesses are yet to set – or demonstrate progress against – targets to increase recycled content and recyclability of packaging, while current investment by businesses in more innovative efforts to design out the need for packaging altogether and shift to reuse models is insufficient.

In light of this, the Ellen MacArthur Foundation and UN Environment Programme have called on industry to:⁴²

1. Take bold action on packaging types that are not recyclable today — either developing and executing a credible roadmap to make recycling work, or decisively innovating away from these packaging types.
2. Set ambitious plastic packaging reduction targets — aimed at helping to mobilise increased efforts to rapidly scale innovative new delivery models that deliver products to customers without packaging, or by using reusable packaging.

Industry cannot deliver the shift to a circular economy for plastics alone. It will need the support of policymakers putting in place the enabling conditions, incentives, and frameworks to create a circular economy for plastic,⁴³ both domestically and internationally through a Global Treaty on plastic pollution.⁴⁴

The Covid-19 pandemic has shone a new light on the drawbacks of our linear economy, emphasising the urgent need to rethink how we produce, use, and reuse plastics. We have seen, for example, rocketing demand for takeaway food containers and bubble wrap – most of it not recyclable – and the halting of policies aimed at reducing single-use plastic products. However, this crisis has also demonstrated the speed at which the world can mobilise change, and post-Covid-19 economic recovery plans present an opportunity to take this necessary action on plastic pollution.⁴⁵

*Lily Shepherd,
Programme Manager - Strategic Engagements,
New Plastics Economy
Ellen MacArthur Foundation*

⁴⁰ Ibid, see 28

⁴¹ Ibid, see 28

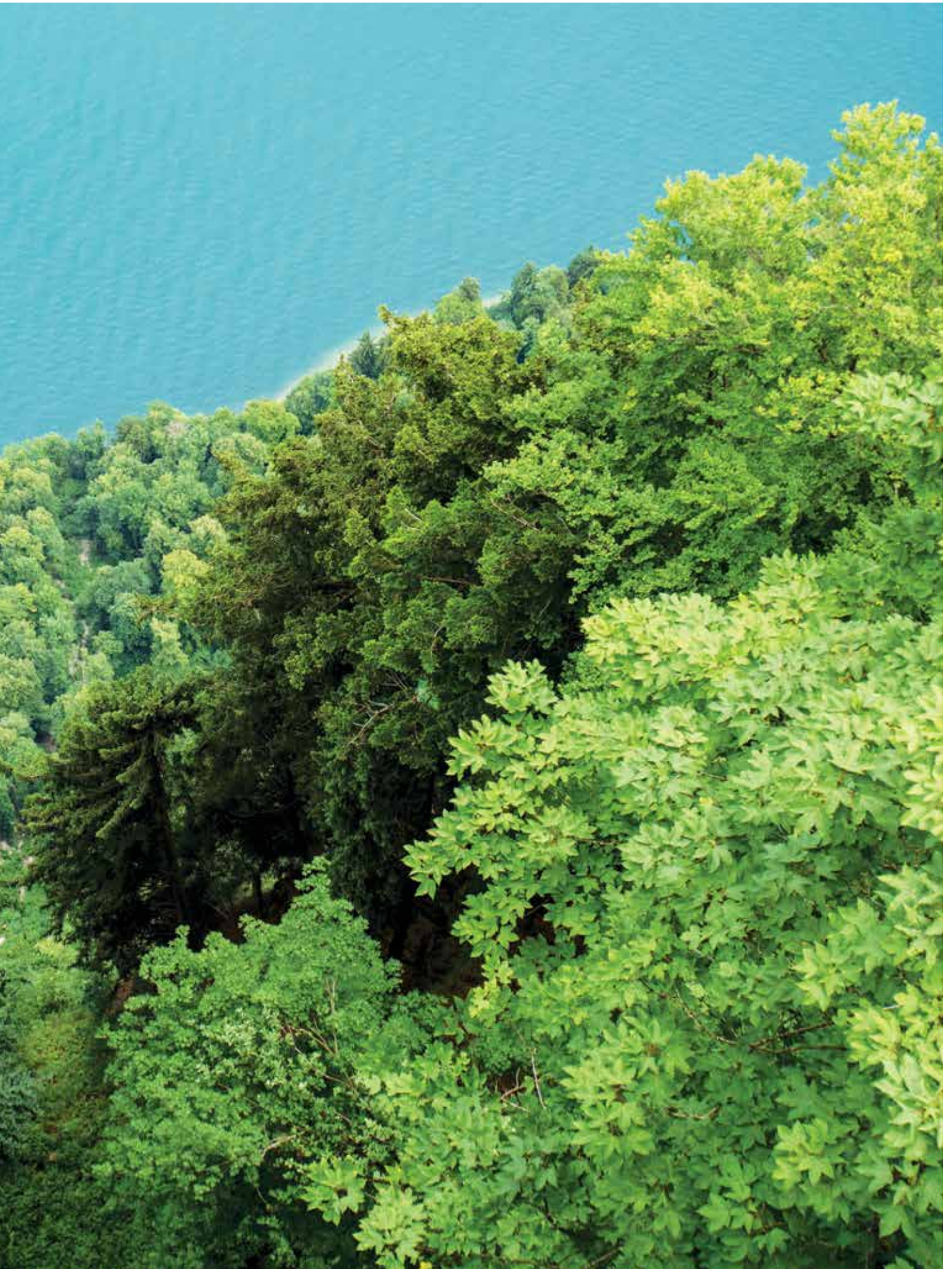
⁴² Ibid, see 28

⁴³ The Ellen MacArthur Foundation and UN Environment Programme have called on policymakers to: (1) Establish policies and mechanisms that provide dedicated and stable funding for collection and sorting, through fair industry contributions, such as extended producer responsibility; and (2) Set a global direction and create an international agreement and framework for action, through the UN Environment Assembly, building on the vision of a circular economy for plastics.

⁴⁴ Ibid, see 3

An aerial photograph showing a dense, vibrant green forest in the lower half of the frame, which meets a large, calm body of turquoise water in the upper half. The water's surface has subtle ripples, and the forest appears thick and healthy. The overall scene conveys a sense of natural beauty and environmental sustainability.

Sustainability Leaders 2021



S&P Global Sustainability Awards

Over
7,000

companies assessed in the 2021 Corporate Sustainability Assessment (CSA) were considered for The Sustainability Yearbook

Only
631

companies with top scores made it into the Yearbook

with
280

Yearbook distinctions:

70
Gold Class

74
Silver Class

98
Bronze Class

52
Industry Movers

Sustainability Award

Gold Class 2021

S&P Global

Companies achieving an S&P Global ESG Score within 1% of the industry's top-performing company's score, and a minimum score of 60, are awarded a Gold Class distinction.

Sustainability Award

Silver Class 2021

S&P Global

Companies achieving an S&P Global ESG Score within a range of 1% to 5% of the top-performing company's score in their industry, and a minimum score of 57, are awarded a Silver Class distinction.

Sustainability Award

Bronze Class 2021

S&P Global

Companies achieving an S&P Global ESG Score within a range of 5% to 10% of the top-performing company's score in their industry, and a minimum score of 54, are awarded a Bronze Class distinction.

Sustainability Award

Industry Mover 2021

S&P Global

Companies within the top 15% of each industry that participated in the CSA last year and this year, achieved an improvement in their S&P Global ESG Score of at least five percent, and achieved the strongest improvement in their industry, are awarded an Industry Mover distinction.

Sustainability Yearbook Member

Companies that have been included in the Yearbook, but that have not received a medal distinction, are listed as a Sustainability Yearbook Member.

Methodology

Universe

The selection of companies in the Sustainability Yearbook 2021 is based on The 2020 Corporate Sustainability Assessment (CSA). The underlying universe of companies was determined on January 22nd, 2020, covering all companies assessed in the 2020 CSA until that date. A first batch of 3,429 companies was assessed in November 2020, to select leading companies for inclusion in relevant Dow Jones Sustainability Indices. Additional 3,604 companies were assessed since for inclusion in The Sustainability Yearbook, as part of our continuous assessment process. This includes dozens of large private companies that contracted the CSA as a service. By April 2021, S&P Global will increase the number of assessed companies to over 10,000. As a result, the ranking of companies within an industry may also change. The most up to date S&P Global ESG Scores and ranks for all assessed companies are available on the S&P Global website www.spglobal.com/esg.

Selection

In order to be listed in the Yearbook, companies must be within the top 15% of their industry and must achieve an S&P Global ESG Score within 30% of their industry's top-performing company. The Sustainability Yearbook aims to distinguish those companies that have each demonstrated their strengths in the area of corporate sustainability. As sustainability performance accelerates, S&P Global increasingly sees value in rewarding groups of top-performing companies, rather than focusing on individual company ranks. The selection of companies into the different Yearbook award classes is explained on the previous page.

S&P Global ESG Scores

S&P Global ESG Scores are based on the assessment of corporate sustainability performance in the S&P Global Corporate Sustainability Assessment (CSA). Scores

are from 0 – 100 (best). As the CSA applies 61 industry-specific questionnaires, the scores should not be used to rank companies across industries and should be reviewed within the context of each CSA industry. All scores used for the Yearbook selection reflect the results of S&P Global's Media & Stakeholder Analysis (MSA) as of January 22nd, 2021 as well as the most recent decisions regarding company exclusions from the DJSI that have been taken by the Dow Jones Sustainability Index Committee.

Controversy Screening

As a prerequisite, a qualitative screen based on the MSA is applied to determine eligibility for inclusion in The Sustainability Yearbook regardless of the score derived from the CSA. The MSA is based on an examination of media coverage and publicly available stakeholder information provided by RepRisk ESG Business Intelligence and evaluates a company's response to critical sustainability issues that may arise during the year. This process aligns the Yearbook's methodology with any decision by the Dow Jones Sustainability Indices Committee to exclude a company from the DJSI, which is also based on the MSA.

Corporate Actions

S&P Global monitors corporate actions throughout the year. For merged companies, the surviving entity will be considered for the Yearbook based on the score of the company assessed which S&P Global deems to be the surviving entity. If a company is delisted as a result of a corporate action prior to the end of October, it will no longer be eligible for inclusion in the Sustainability Yearbook, given that the entity no longer exists. Company names and countries are reviewed periodically and updated to the best of S&P Global's knowledge at the time of publication. Changes occurring after this date may not be reflected in the printed version of the Yearbook, but may be updated on the S&P Global Sustainability Yearbook website.

Reading Instructions

The information below provides an explanation on how to interpret the various sections contained in each of the Industry Profiles on the following pages.

- 1 **Driving forces**
Highlights current and future challenges shaping the competitive landscape of each industry and impacting the sources of value creation for companies.
- 2 **Highlighted criteria**
Highlights selected industry-specific and general criteria that are applied in the 2021 Corporate Sustainability Assessment, including the weights of the three dimensions within the overall score.
- 3 **Industry statistics**
This section displays the research coverage in 2021 for the respective industry. Assessed companies include those that actively participated in the CSA and companies assessed by S&P Global based on publicly available information.

This is an example



Transportation and Transportation Infrastructure

1

Driving forces

The transportation industry consists of a number of sub-industries, each with distinctive dynamics, competitive landscapes, and sustainability issues. The sudden decline of global travel and trade due to the Covid-19 pandemic will have long-lasting impacts on the industry. A key challenge is to make sure that the core transportation and logistics systems that are driving global supply chains can continue to operate through restrictions and lockdown measures. Here, personnel and passenger safety remains the top priority, despite growing financial pressure on these companies and their fleets. Factors, such as fuel efficiency and operational eco-efficiency, will continue to remain key focus areas. Lower-carbon transportation options provide an opportunity to acquire new customers and retain existing ones, as more companies commit to reducing their carbon footprint. Meanwhile, offering a high-quality, reliable service requires companies to develop an engaged workforce through effective human capital development programs. Finally, corruption and bribery remain an inherent issue when dealing with governmental organizations that could result in material impacts in terms of monetary penalties or blacklisting.

2

Highlighted criteria & dimension weights

Environmental Dimension 27%
 - Climate Strategy
 - Fuel Efficiency
 - Operational Eco-Efficiency

Social Dimension 39%
 - Occupational Health and Safety
 - Stakeholder Engagement
 - Talent Attraction & Retention

Governance & Economic Dimension 34%
 - Codes of Business Conduct
 - Customer Relationship Management
 - Risk & Crisis Management

3

Sustainability leaders 2021

● S&P Global Gold Class	
BTS Group Holdings Public Company Limited	Thailand
● S&P Global Silver Class	
Royal Mail plc	United Kingdom
● S&P Global Bronze Class	
PostNL N.V.	Netherlands
Transurban Group	Australia
Sustainability Yearbook Members	
Canadian National	
Railway Company	Canada
Hyundai Glovis Co., Ltd.	Rep. of Korea
Sydney Airport Limited	Australia
Airports of Thailand Public Company Limited	Thailand
Deutsche Post AG	Germany
Aéroports de Paris SA	France
Nippon Yusen Kabushiki Kaisha	Japan
Canadian Pacific Railway Limited*	Canada
CSX Corporation	United States
Adani Ports and Special Economic Zone Limited	India
MTR Corporation Limited	Hong Kong
FirstGroup plc	United Kingdom

Industry statistics

Number of companies assessed	171
Market capitalization of assessed companies (in USD billion)	1799.2
Number of companies in Yearbook	16
Market capitalization of companies in Yearbook (in USD billion)	396.6

* S&P Global Industry Mover

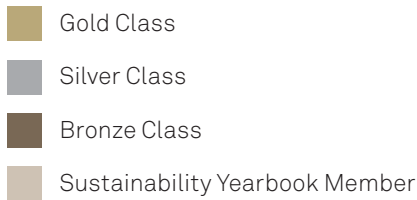
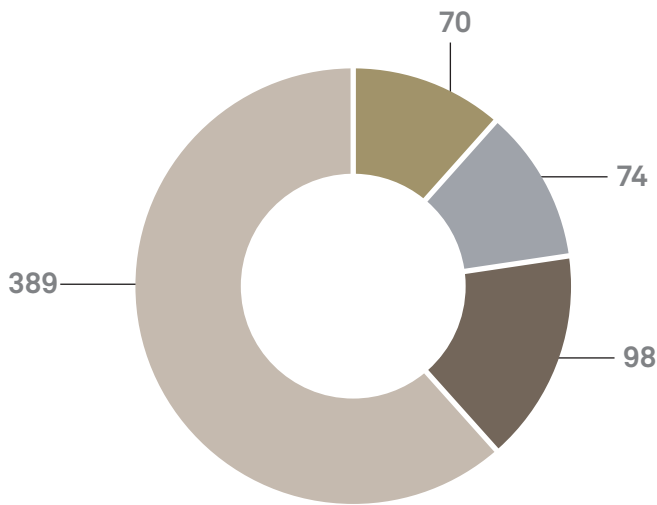
Where are the world's most sustainable companies located?

7,033

companies were assessed in the CSA in 2021*

*as of January 22nd 2021

633 companies from
40 countries qualified for the
Sustainability Yearbook 2021



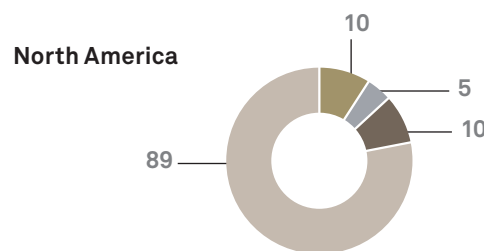
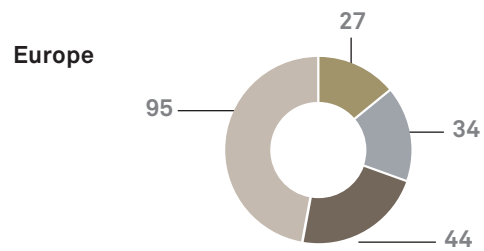
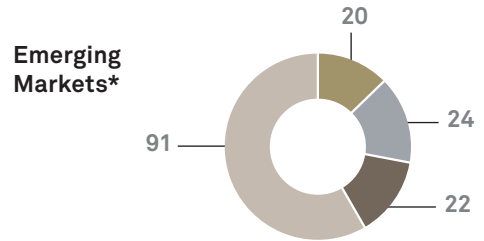
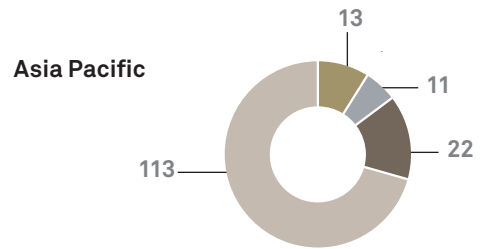
Market capitalization of assessed companies in USD trillion as of 30 Nov 2021:

Asia Pacific: 19.9

Emerging Markets: 17.8

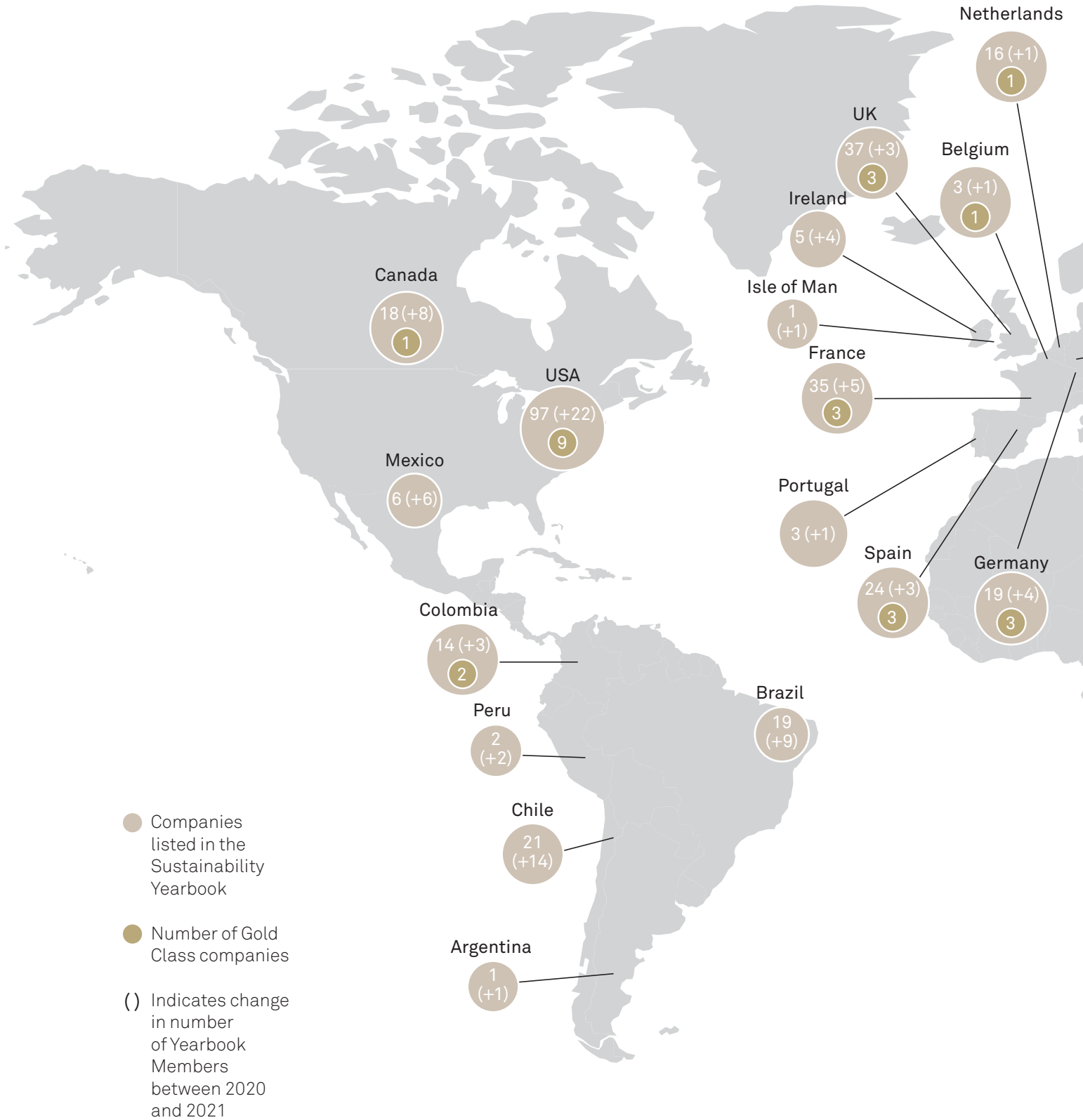
Europe: 14.8

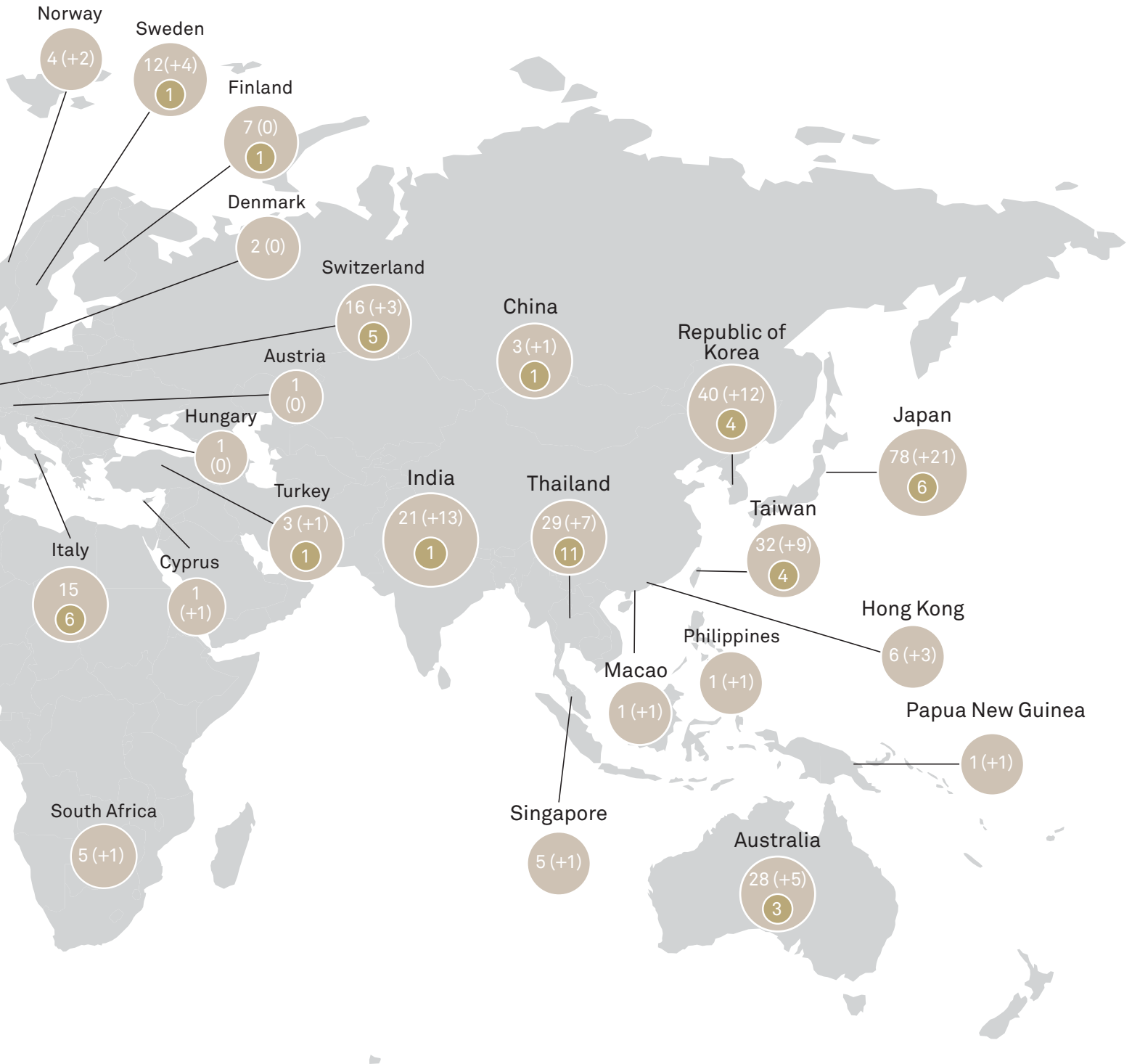
North America: 39



* Argentina, Brazil, Chile, China, Colombia, Czech Republic, Egypt, Greece, Hungary, India, Indonesia, Malaysia, Mexico, Morocco, Peru, Philippines, Poland, Qatar, Russia, South Africa, Taiwan, Thailand, Turkey, United Arab Emirates

Where are the world's most sustainable companies located?





Industry Profiles: 61 Industries at a Glance

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Health Care Equipment & Supplies	129	Tobacco	161
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Aerospace & Defense

Driving forces

Aerospace and defense is heavily reliant on product innovation to develop safer and more efficient modes of transportation, space exploration technologies, and military and defense systems. Operational eco-efficiency is an important focus of R&D initiatives, due to increasing demand for cleaner and quieter aircraft. While technological advancement improves performance, it also deepens the complexity of aircraft systems. At the same time, original equipment manufacturers are facing continuous cost pressures from both competitors and customers. The confluence of these factors has pushed manufacturers towards outsourcing practices, potentially increasing the risks to product quality and safety (e.g., through third-party programmers not as familiar with a company or counterfeit parts). Aerospace and defense companies have also come under increased scrutiny for involvement in certain weaponry and the potential harm to civilians. Corruption, bribery, and anti-competitive practices also remain primary areas of concern across the industry. Therefore, performing thorough governance and social due diligence will be of utmost importance in the years to come.

Highlighted criteria & dimension weights

- Environmental Dimension ... 27%
 - Climate Strategy
 - Operational Eco-Efficiency
 - Product Stewardship
- Social Dimension 33%
 - Human Capital Development
 - Human Rights
 - Occupational Health and Safety
- Governance & Economic Dimension 40%
 - Codes of Business Conduct
 - Compliance with Applicable Export Control Regimes
 - Supply Chain Management

Sustainability leaders 2021

S&P Global Gold Class	
Leonardo SpA	Italy
Sustainability Yearbook Members	
BAE Systems plc	United Kingdom
Lockheed Martin Corporation	United States
Northrop Grumman Corporation	United States
Rolls-Royce Holdings PLC	United Kingdom
Thales S. A	France

Industry statistics

Number of companies assessed	72
Market capitalization of assessed companies (in USD billion)	956.3
Number of companies in Yearbook	6
Market capitalization of companies in Yearbook (in USD billion)	209.7



Airlines

Driving forces

The COVID-19 crisis has had a significant effect on airlines, with countries across the globe closing borders and limiting travel. Lower demand from leisure and business travelers will lead to longer-term disruptions. It will, therefore, be imperative for companies to better understand their customers and adapt their service offerings accordingly. In addition to the usual customer expectations linked to reliability, affordability, safety, and comfort, customers are increasingly gravitating towards eco-friendly transport modes. Enhancing operational eco-efficiency, therefore, remains a priority, as it helps drive resource efficiency, lower air pollution, and a reduction in the risks of being impacted by future environmental regulations. Reducing plastic packaging will also be a key priority for the coming years. On the social side, passenger safety will remain a critical issue to prevent reputational risks. The importance of labor practices will also persist given the highly-unionized workforce and the risk of strikes, which can result in operational disruptions and lower customer satisfaction, while impacting revenue generation.

Highlighted criteria & dimension weights

- Environmental Dimension .. 24%
 - Climate Strategy
 - Environmental Policy & Management Systems
 - Operational Eco-Efficiency
- Social Dimension 33%
 - Labor Practice Indicators
 - Passenger Safety
 - Talent Attraction & Retention
- Governance & Economic Dimension 43%
 - Efficiency
 - Fleet Management
 - Risk & Crisis Management

Sustainability leaders 2021

S&P Global Gold Class	
ANA Holdings Inc.	Japan
S&P Global Silver Class	
Air France-KLM SA	France
China Airlines Ltd	Taiwan
LATAM Airlines Group S.A.	Chile

Industry statistics

Number of companies assessed	40
Market capitalization of assessed companies (in USD billion)	248.5
Number of companies in Yearbook	6
Market capitalization of companies in Yearbook (in USD billion)	47

Sustainably Yearbook Members

Delta Air Lines, Inc.	United States
Japan Airlines Co., Ltd.*	Japan

* S&P Global Industry Mover



Aluminum

Driving forces

The aluminum industry has an important role to play in the circular economy of the future. It can contribute to lower waste and energy savings in the products it produces, but company operations still have significant environmental impacts. Aluminum products can contribute to energy savings in the production process and use phase, as aluminum is light weight and its recycling consumes significantly less energy than most other materials. However, the primary production of aluminum continues to have a significant environmental impact due to the energy-intensive nature of processing, often relying on fossil-fuel sourced energy. Opportunities lie in improving energy efficiency and the significant energy costs involved in aluminum production, although there is the potential for climate regulation to reshape those costs in the future. The responsible management of air emissions, waste, and wastewater discharge are also important for maintaining a license to operate with both environmental regulators and local communities. Consequently, forward looking climate strategies are critical factors, as is the continued protection of employee health and safety.

Highlighted criteria & dimension weights

- Environmental Dimension..33%
 - Climate Strategy
 - Operational Eco-Efficiency
 - Water Related Risks
- Social Dimension 33%
 - Human Rights
 - Occupational Health and Safety
 - Social Impacts on Communities
- Governance & Economic Dimension 34%
 - Codes of Business Conduct
 - Corporate Governance
 - Supply Chain Management

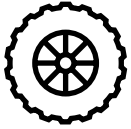
Sustainability leaders 2021

S&P Global Gold Class	
Hindalco Industries Limited*	India
S&P Global Bronze Class	
Alcoa Corporation	United States
Norsk Hydro ASA	Norway

* S&P Global Industry Mover

Industry statistics

Number of companies assessed	13
Market capitalization of assessed companies (in USD billion)	51.4
Number of companies in Yearbook	3
Market capitalization of companies in Yearbook (in USD billion)	18.8



Auto Components

Driving forces

Auto parts suppliers play a critical role in improving efficiency and safety, making innovation a key differentiating factor to provide a competitive advantage. The goal of adopting a circular economy approach that emphasizes recycling and the reuse of resources is vital because raw materials make up a significant portion of the cost of goods sold and comprise an important waste stream. As such, there is a need to increase recycling and to use product lifecycle assessments for selecting the most appropriate, cost-effective, and sustainable raw materials. Together with the growing use of conflict minerals and rare earth elements in alternative drivetrains, manufacturers are under pressure to identify responsible suppliers and increase transparency. Passenger safety is critical, since auto parts suppliers must detect and respond to any potential safety hazards to protect companies from legal actions or lawsuits. Assistance/autonomous driving technologies supplied by auto component manufacturers represents an emerging business opportunity, but also presents new challenges for quality standards.

Highlighted criteria & dimension weights

Environmental Dimension	35%
– Climate Strategy	
– Operational Eco-Efficiency	
– Product Stewardship	
Social Dimension	33%
– Human Capital Development	
– Occupational Health and Safety	
– Talent Attraction & Retention	
Governance & Economic Dimension	32%
– Corporate Governance	
– Innovation Management	
– Supply Chain Management	

Sustainability leaders 2021

S&P Global Gold Class	
Pirelli & C. S.p.A.	Italy
S&P Global Bronze Class	
Hankook Tire & Technology Co., Ltd.	Rep. of Korea
Hyundai Mobis Co.,Ltd*	Rep. of Korea
Nokian Renkaat Oyj	Finland
Valeo SA	France

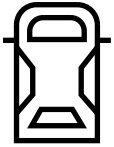
Sustainability Yearbook Members

Bridgestone Corporation	Japan
Gestamp Automoción, S.A.	Spain
NGK Spark Plug Co., Ltd.	Japan

* S&P Global Industry Mover

Industry statistics

Number of companies assessed	97
Market capitalization of assessed companies (in USD billion)	466.8
Number of companies in Yearbook	8
Market capitalization of companies in Yearbook (in USD billion)	74.4



Automobiles

Driving forces

As stricter emission regulations on new vehicles are realized this decade, coupled with incentive programs tailored for electric vehicles and related infrastructure, automobile companies are at the cusp of opportunity in both the passenger and commercial vehicle segments. Those diversifying their portfolios for alternative drivetrains will be best situated to address growing consumer demand and emissions compliance requirements. Innovation is essential to a company's long-term success, requiring a movement away from simple engine enhancements or hybrid vehicles to fully-electric drivetrains. This will lead to changes in the supply chain, so automobile manufacturers must carefully assess risks (e.g., dependency on critical suppliers and the use of rare earth elements), while also taking advantage of new opportunities (e.g., material innovation and recycling) across the entire value chain. A comprehensive understanding of embedded environmental costs in the production of combustion engines and electric vehicles will help support adequate cradle to grave assessments. Finally, robust corporate governance structures and compliance practices are critical to check compliance with environmental standards and help avoid reputational and legal issues.

Highlighted criteria & dimension weights

- Environmental Dimension .31%
 - Climate Strategy
 - Low Carbon Strategy
 - Operational Eco-Efficiency
- Social Dimension31%
 - Human Capital Development
 - Occupational Health and Safety
 - Talent Attraction & Retention
- Governance & Economic Dimension 38%
 - Corporate Governance
 - Innovation Management
 - Supply Chain Management

Sustainability leaders 2021

S&P Global Gold Class	
Bayerische Motoren Werke Aktiengesellschaft	Germany
S&P Global Silver Class	
General Motors Company	United States
Honda Motor Co., Ltd.	United States
S&P Global Bronze Class	
Peugeot S.A.	France

Sustainability Yearbook Members

Mazda Motor Corporation	United States
Volvo Car Corporation	Sweden
Yamaha Motor Co., Ltd.	Japan

Industry statistics

Number of companies assessed	51
Market capitalization of assessed companies (in USD billion)	1761
Number of companies in Yearbook	7
Market capitalization of companies in Yearbook (in USD billion)	198



Banks

Driving forces

In response to more regulatory scrutiny, many banks have transitioned to simplified business models and focused increasingly on the core principles of ethics and customer trust. Corporate governance and banking culture remain significant items on board agendas, and establishing effective incentive schemes are increasingly viewed as a way of aligning investment professionals' attitudes and behaviors with the long-term interests of shareholders and society. To execute the business strategy, leading banks are using well-designed human capital schemes to promote appropriate skill sets and help improve talent attraction and retention, which is of utmost importance given the sector's digital transition. Confidential and customer data is increasingly managed and protected, minimizing cyber risk. Additionally, in efforts to support the transition to more sustainable business models and adherence to regulatory developments on sustainable finance, banks are becoming increasingly proactive and transparent, enabling financial market participants to better identify sustainable activities and investments.

Sustainability leaders 2021

S&P Global Gold Class			
Bancolombia S.A.	Colombia	National Australia Bank Limited	Australia
S&P Global Silver Class		Shinhan Financial Group Co., Ltd.	Rep. of Korea
Australia and New Zealand		Swedbank AB (publ)	Sweden
Banking Group Limited	Australia	Taishin Financial Holding Co., Ltd.	Taiwan
Banco Bilbao Vizcaya		Sustainability Yearbook Members	
Argentaria, S.A.	Spain	Banco Comercial Português, S.A.	Portugal
Banco Bradesco S.A.	Brazil	Banco Davivienda S.A.	Colombia
CaixaBank, S.A.	Spain	Banco de Bogotá S.A.	Colombia
E.SUN Financial		Banco de Crédito	
Holding Company, Ltd.	Taiwan	e Inversiones	Chile
Kasikornbank Public		Banco del Estado de Chile	Chile
Company Limited	Thailand	Banco Santander México, S.A., Institución	
KB Financial Group Inc.	Rep. of Korea	de Banca Múltiple, Grupo Financiero	
The Siam Commercial		Santander México*	Mexico
Bank Public Company Limited	Thailand	Banco Santander-Chile	Chile
S&P Global Bronze Class		Bangkok Bank Public	
ABN AMRO Bank N.V.	Netherlands	Company Limited	Thailand
Banco do Brasil S.A.	Brazil	Bank of America Corporation	United States
Banco Santander, S.A.	Spain	Bank of Montreal	Canada
Bankinter, S.A.	Spain	Bankia, S.A.	Spain
BNP Paribas SA	France	Barclays PLC	United Kingdom
CTBC Financial Holding Co., Ltd.	Taiwan	Canadian Imperial Bank	
First Financial Holding Co., Ltd.	Taiwan	of Commerce	Canada
Intesa Sanpaolo S.p.A.	Italy	Citigroup Inc.	United States

Highlighted criteria & dimension weights

Environmental Dimension..13%

– Climate Strategy

Social Dimension 32%

– Financial Inclusion

– Human Capital Development

– Talent Attraction & Retention

Governance & Economic

Dimension 55%

– Anti-crime Policy & Measures

– Codes of Business Conduct

– Corporate Governance

– Risk & Crisis Management

– Sustainable Finance

Sustainability leaders 2021

Commonwealth Bank of Australia	Australia
DBS Group Holdings Ltd	Singapore
Hana Financial Group Inc.	Rep. of Korea
Hang Seng Bank Limited	Hong Kong
IndusInd Bank Limited	India
Itaú Corpbanca	Chile
Itaú Unibanco Holding S.A.	Brazil
Itaúsa - Investimentos Itaú S.A.	Brazil
KBC Group NV	Belgium
Mizuho Financial Group, Inc.	Japan
Nedbank Group Limited	South Africa
Royal Bank of Canada	Canada
SinoPac Financial Holdings Company Limited	Taiwan
Société Générale	
Société anonyme	France
Standard Chartered PLC	United Kingdom
Svenska Handelsbanken	
AB (publ)	Sweden
The Bank of Nova Scotia	Canada
The Toronto-Dominion Bank	Canada
Turkiye Garanti Bankasi A.S.	Turkey
Westpac Banking Corporation	Australia

Industry statistics

Number of companies assessed	499
Market capitalization of assessed companies (in USD billion)	6474.4
Number of companies in Yearbook	55
Market capitalization of companies in Yearbook (in USD billion)	1731

* S&P Global Industry Mover



Beverages

Driving forces

The global beverage industry has been significantly disrupted by COVID-19, with impacts felt across the entire value chain having potential long-term implications on sourcing strategies and distribution networks. The focus on health and nutrition continues to drive changes both in the market and in companies' strategies. The demand for carbonated soft drinks has been in decline, particularly in developed markets, with preferences shifting towards more natural ingredients, healthier alternatives, and lower-calorie substitutes. Producers of alcoholic beverages have long faced legal barriers in developed markets, but must also maintain effective and responsible marketing strategies in emerging markets with fewer regulations. Packaging represents a significant sustainability challenge, with companies expected to develop alternative packaging solutions and improve reusability, collection, and recycling rates. Water stewardship is an ongoing concern for producers and local governments, making the management of water-related risks key to supporting a sustainable, long-term production base.

Highlighted criteria & dimension weights

Environmental Dimension	26%
– Packaging	
– Raw Material Sourcing	
– Water Related Risks	
Social Dimension	26%
– Human Capital Development	
– Talent Attraction & Retention	
Governance & Economic Dimension	48%
– Corporate Governance	
– Health & Nutrition	
– Innovation Management	
– Supply Chain Management	

Sustainability leaders 2021

S&P Global Gold Class	
Coca-Cola HBC AG	Switzerland
Thai Beverage Public Company Limited	Thailand
S&P Global Silver Class	
Coca-Cola European Partners plc	United Kingdom
Diageo plc	United Kingdom

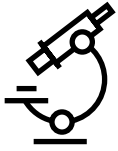
Industry statistics

Number of companies assessed	66
Market capitalization of assessed companies (in USD billion)	1976.8
Number of companies in Yearbook	9
Market capitalization of companies in Yearbook (in USD billion)	234.6

Sustainability Yearbook Members

Coca-Cola FEMSA, S.A.B. de C.V.	Mexico
Embotelladora Andina S.A.	Chile
Heineken Holding N.V.*	Netherlands
Heineken N.V.	Netherlands
Viña Concha y Toro S.A.	Chile

* S&P Global Industry Mover



Biotechnology

Driving forces

Biotechnology companies are facing scrutiny related to the pricing and reimbursement of their products, as governments seek to contain the rise in health care costs. With the COVID – 19 pandemic, companies must demonstrate the value of their products and make sure that their corresponding pricing is economically and medically justified and sustainable for those who must pay. The biotechnology industry relies heavily on human capital for innovation and the continuous development of novel medicines. The industry is characterized by extensive R&D and a high risk of failure in product development, which makes attracting and retaining the most talented researchers and scientists essential. This also means that intellectual property management is critical. Finally, business ethics, competitive practices, and product quality and safety remain important issues. Violations have the potential to cause significant reputational and financial damage, the impact of which has grown due to the fast flow of information resulting from social media and tighter regulatory oversight.

Highlighted criteria & dimension weights

- Environmental Dimension ..9%
 - Climate Strategy
 - Operational Eco-Efficiency
- Social Dimension41%
 - Addressing Cost Burden
 - Health Outcome Contribution
 - Strategy to Improve Access to Drugs or Products
 - Talent Attraction & Retention
- Governance & Economic Dimension 50%
 - Codes of Business Conduct
 - Innovation Management
 - Product Quality and Recall Management

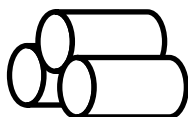
Sustainability leaders 2021

S&P Global Gold Class	
Biogen Inc	United States
S&P Global Bronze Class	
AbbVie Inc	United States
Sustainability Yearbook Members	
Regeneron Pharmaceuticals, Inc.*	United States

* S&P Global Industry Mover

Industry statistics

Number of companies assessed	120
Market capitalization of assessed companies (in USD billion)	1237.3
Number of companies in Yearbook	3
Market capitalization of companies in Yearbook (in USD billion)	276.1



Building Products

Driving forces

The manufacturing of building products and fixtures requires significant energy inputs. As a result, optimizing operational eco-efficiency is a high priority, alongside climate strategy and occupational health and safety. Over their lifetime, buildings are responsible for approximately 40% of global energy consumption and 33% of greenhouse gas emissions, as reported by the UN Environmental Program. Companies that integrate lifecycle environmental impacts into their product design and manufacturing will be better positioned to benefit from the demand for more eco-friendly, energy-efficient buildings and greener construction products. Continued areas of focus include: responsibly sourcing raw materials, such as wood and metal; the greater use of recycled materials in production; reducing the use of hazardous substances, such as volatile organic compounds; and, a greater emphasis on end-of-life management. Taking such an integrated approach can also help reduce risks of potential product liabilities.

Highlighted criteria & dimension weights

- Environmental Dimension..35%
 - Climate Strategy
 - Operational Eco-Efficiency
 - Product Stewardship
- Social Dimension31%
 - Human Capital Development
 - Occupational Health and Safety
 - Talent Attraction & Retention
- Governance & Economic Dimension 34%
 - Codes of Business Conduct
 - Risk & Crisis Management
 - Supply Chain Management

Sustainability leaders 2021

S&P Global Gold Class	
Owens Corning	United States
S&P Global Bronze Class	
LIXIL Group Corporation	Japan
Toto Ltd.	Japan
Sustainability Yearbook Members	
Daikin Industries,Ltd.	Chile
Johnson Controls	
International plc	Ireland
LG Hausys, Ltd.*	Rep. of Korea
Trane Technologies plc	Ireland

* S&P Global Industry Mover

Industry statistics

Number of companies assessed	63
Market capitalization of assessed companies (in USD billion)	448.1
Number of companies in Yearbook	7
Market capitalization of companies in Yearbook (in USD billion)	159.9



Casinos & Gaming

Driving forces

The COVID-19 pandemic has had an extreme impact on the industry, forcing gambling venues to shut down or operate in a reduced capacity. Responsible reopening will require rethinking the gaming experience to address customer safety. Casinos and the gaming industry consistently remain under intense public and regulatory scrutiny. Companies must address concerns, such as money laundering, through robust compliance systems and sound governance. Social issues, such as gambling addiction and its societal repercussions, are managed inconsistently and often limited to regional legislation or voluntary standards. The rapid growth of online gaming poses significant opportunities for operators, but also threats. These include the proliferation of online platforms that have highlighted the need for effective monitoring. However, companies in this space are increasingly going beyond the minimum legal requirements and taking a proactive stance in addressing these issues. On the environmental side, companies are increasing their efforts to curb energy consumption, while reducing operating costs.

Highlighted criteria & dimension weights

- Environmental Dimension. 17%
 - Environmental Policy & Management Systems
 - Operational Eco-Efficiency
- Social Dimension 37%
 - Human Capital Development
 - Stakeholder Engagement
 - Talent Attraction & Retention
- Governance & Economic Dimension 46%
 - Anti-crime Policy & Measures
 - Codes of Business Conduct
 - Corporate Governance
 - Customer Relationship Management

Sustainability leaders 2021

S&P Global Gold Class	
Tabcorp Holdings Limited	Australia
S&P Global Bronze Class	
Las Vegas Sands Corp.	United States
The Star Entertainment Group Limited	Australia

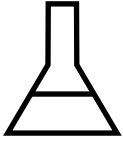
Industry statistics

Number of companies assessed	40
Market capitalization of assessed companies (in USD billion)	320.4
Number of companies in Yearbook	6
Market capitalization of companies in Yearbook (in USD billion)	96.8

Sustainability Yearbook Members

GVC Holdings PLC	Isle of Man
Kangwon Land, Inc.	Rep. of Korea
Sands China Ltd.*	Macao

* S&P Global Industry Mover



Chemicals

Driving forces

The chemicals industry includes companies that manufacture commodity chemicals, industrial gases, agricultural chemicals, and specialty chemicals. These products serve as key inputs to critical industries, such as petroleum refining, food production and processing, automotive, pharmaceuticals, and electronics. How chemical companies contribute to sustainability is, therefore, crucial and can have major spillover effects into the production processes and end products produced around the world. The industry can contribute to sustainability by supplying products that can help make production processes more efficient, with less negative impacts on human health and the environment. This requires that companies invest in innovation, product stewardship, operational eco-efficiency, health and safety, and customer relationship management. Chemical companies must conduct assessments to measure and monitor the risks of hazardous substances in their products, both in terms of upcoming regulations and legacy products that have long-lasting negative impacts on human health and the environment. Companies managing this successfully can potentially reap benefits from providing higher margin, eco-labeled products that can contribute to a more effective circular economy and help reduce the risks of litigation.

Highlighted criteria & dimension weights

- Environmental Dimension 33%
 - Climate Strategy
 - Operational Eco-Efficiency
 - Product Stewardship
 - Water Related Risks
- Social Dimension 32%
 - Human Capital Development
 - Occupational Health and Safety
- Governance & Economic Dimension 35%
 - Codes of Business Conduct
 - Customer Relationship Management
 - Innovation Management

Sustainability leaders 2021

●	S&P Global Gold Class		Johnson Matthey Plc	United Kingdom
	LANXESS Aktiengesellschaft	Germany	Koninklijke DSM N.V.	Netherlands
	PTT Global Chemical Public Company Limited	Thailand	LG Chem, Ltd.	Rep. of Korea
●	S&P Global Silver Class		Mitsui Chemicals, Inc.	Japan
	Indorama Ventures Public Company Limited	Thailand	Nissan Chemical Corporation	Japan
			Nutrien Ltd.	Canada
●	S&P Global Bronze Class		OCI Company Ltd.	Rep. of Korea
	Arkema S.A.	France	Orbia Advance Corporation, S.A.B. de C.V.	Mexico
	Linde plc	United Kingdom	Solvay SA	Belgium
	Mitsubishi Chemical Holdings Corporation	Japan	Toray Industries, Inc.	Japan
			UPL Limited	India

Sustainability Yearbook Members

Air Products and Chemicals, Inc.	United States
Braskem S.A.	Brazil
China Petrochemical Development Corporation*	Taiwan
Clariant AG	Switzerland
DIC Corporation	Japan
Dow Inc.	United States
Ecolab Inc.	United States
Enaex S.A.	Chile
Incitec Pivot Limited	Australia
International Flavors & Fragrances Inc.	United States

* S&P Global Industry Mover

Industry statistics

Number of companies assessed	243
Market capitalization of assessed companies (in USD billion)	2035.6
Number of companies in Yearbook	27
Market capitalization of companies in Yearbook (in USD billion)	524.9



Coal & Consumable Fuels

Driving forces

Coal producers remain central to the debate about energy access and climate change. As power-generating utilities come under pressure to cut their carbon emissions, the increased use of natural gas and renewables is substantially reducing demand for thermal coal. For uranium producers, higher demand for low-carbon energy is tempered by safety concerns about nuclear power generation. Operationally, both coal and uranium producers face ongoing challenges to minimize their environmental impacts, including the release of pollutants and their effects on biodiversity and water quality. Moreover, incidents involving mineral waste or wastewater can quickly become contentious issues for community relations. Where new mining projects are being considered, it is necessary to have a clear understanding and management of environmental impacts, land rights issues, and community engagement. Responsible management of human capital is also a key operational issue, exemplified by occupational health and safety trends and labor practices.

Highlighted criteria & dimension weights

- Environmental Dimension...32%
 - Biodiversity
 - Climate Strategy
 - Mineral Waste Management
 - Operational Eco-Efficiency
 - Water Related Risks

- Social Dimension 35%
 - Occupational Health and Safety
 - Social Impacts on Communities

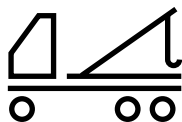
- Governance & Economic Dimension 33%
 - Codes of Business Conduct
 - Corporate Governance

Sustainability leaders 2021

S&P Global Gold Class	
Banpu PCL	Thailand

Industry statistics

Number of companies assessed	25
Market capitalization of assessed companies (in USD billion)	124
Number of companies in Yearbook	1
Market capitalization of companies in Yearbook (in USD billion)	1.4



Commercial Services & Supplies

Driving forces

Commercial service suppliers include companies providing products and services that are not part of the core business activities of their enterprise customers. Given the industry's sweeping scope, it encompasses both manually-intensive and knowledge-intensive skill sets, but consistently relies heavily on human capital. Fair labor practices combined with employee development programs, knowledge management, and adequate incentive schemes are important for creating successful, safe, and healthy working environments, thereby helping to enhance productivity, attract new talent, and retain employees. On the demand side, customer relationship management plays a crucial role, as long-lasting relationships are beneficial to both customers and providers. Corporate governance and management quality help industry leaders maintain diversified business models to leverage internal synergies and employ cutting-edge technologies. As B2B service partners, commercial service suppliers are ideally placed to spearhead sustainability innovations and promote them among their customer base.

Highlighted criteria & dimension weights

- Environmental Dimension...25%
 - Climate Strategy
 - Environmental Policy & Management Systems
 - Operational Eco-Efficiency
- Social Dimension 36%
 - Human Capital Development
 - Occupational Health and Safety
- Governance & Economic Dimension 39%
 - Codes of Business Conduct
 - Customer Relationship Management
 - Risk & Crisis Management
 - Supply Chain Management

Sustainability leaders 2021

S&P Global Gold Class	
Waste Management, Inc.	United States
S&P Global Bronze Class	
Brambles Limited	Australia
Sustainability Yearbook Members	
China Everbright	
Environment Group Limited	Hong Kong
Downer EDI Limited*	Australia
ISS A/S	Denmark
Rentokil Initial plc	United Kingdom
Republic Services, Inc.	United States
Toppan Printing Co., Ltd.	Japan

* S&P Global Industry Mover

Industry statistics

Number of companies assessed	87
Market capitalization of assessed companies (in USD billion)	417.9
Number of companies in Yearbook	8
Market capitalization of companies in Yearbook (in USD billion)	119.5



Communications Equipment

Driving forces

Responding to the demands of an increasingly interconnected world, the communications equipment industry delivers infrastructure solutions to meet growing data volume demands and improve network coverage and access, while lowering the costs of network operation. With wireless and mobile data traffic increasing twice as fast as fixed Internet, the deployment of 4G/5G networks will accelerate digital transformation across many industries, leading to new applications using the Internet of Things, automation, big data, and Artificial Intelligence. Products must be designed for low energy consumption and responsibly-sourced 3TG minerals. In addition, systems are shifting from predominantly hardware-only to software-defined networking and cloud-enabled solutions. Increased connectivity brings many benefits, but with the transmission of sensitive data via networks, security concerns are paramount. Communications equipment manufacturers are, therefore, tasked with helping to prevent cyber attacks by adopting a consistent approach to security across their infrastructure offerings.

Highlighted criteria & dimension weights

- Environmental Dimension .31%
 - Environmental Policy & Management Systems
 - Operational Eco-Efficiency
 - Product Stewardship
- Social Dimension 25%
 - Human Capital Development
 - Talent Attraction & Retention
- Governance & Economic Dimension 44%
 - Customer Relationship Management
 - Innovation Management
 - Privacy Protection
 - Supply Chain Management

Sustainability leaders 2021

S&P Global Gold Class

Cisco Systems, Inc. United States

Sustainability Yearbook Members

Telefonaktiebolaget LM* Ericsson (publ) Sweden

* S&P Global Industry Mover

Industry statistics

Number of companies assessed	51
Market capitalization of assessed companies (in USD billion)	421.4
Number of companies in Yearbook	2
Market capitalization of companies in Yearbook (in USD billion)	222.7



Computers & Peripherals and Office Electronics

Driving forces

This industry is characterized by disruptive innovations. Cybersecurity is an increasing strategic priority, requiring that products and systems be developed adhering to “security and privacy by design” principles and resilience to an ever-evolving threatening landscape. Effective innovation management requires the right people with the right skill mix. Successful implementation of environmental standards and the monitoring of supplier compliance in areas such as the use of hazardous materials and fair working conditions in emerging economies are particularly relevant. Shorter product lifecycles and the ubiquity of electronic devices around the world have resulted in increased overall energy consumption by IT hardware and high disposal volumes of equipment. To address both issues, it is important to consider the entire product lifecycle when designing new products. Furthermore, adoption of cloud-based solutions is creating new business opportunities, enabling customers to achieve operational efficiency gains, which help contribute to both cost savings and a reduction in environmental footprints.

Highlighted criteria & dimension weights

- Environmental Dimension..30%
 - Climate Strategy
 - Operational Eco-Efficiency
 - Product Stewardship
- Social Dimension 25%
 - Human Capital Development
 - Human Rights
- Governance & Economic Dimension 45%
 - Codes of Business Conduct
 - Innovation Management
 - Privacy Protection
 - Supply Chain Management

Sustainability leaders 2021

S&P Global Gold Class	
Hewlett Packard	
Enterprise Company	United States
S&P Global Silver Class	
Acer Incorporated	Taiwan
HP Inc.	United States
Konica Minolta, Inc.	Japan
Ricoh Company, Ltd.	Japan
S&P Global Bronze Class	
Lite-On Technology Corporation*	Taiwan

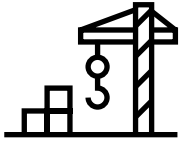
Sustainability Yearbook Members

ASUSTeK Computer Inc.	Taiwan
FUJIFILM Holdings Corporation	Japan
Seiko Epson Corporation	Japan

* S&P Global Industry Mover

Industry statistics

Number of companies assessed	64
Market capitalization of assessed companies (in USD billion)	2852.8
Number of companies in Yearbook	9
Market capitalization of companies in Yearbook (in USD billion)	90.3



Construction & Engineering

Driving forces

The construction and engineering industry consumes resources on a massive scale to create infrastructure and the built environment, a term used to describe the man-made structures supporting human life and activities. The choice of building materials (e.g., certified wood or recycled concrete), consideration of lifecycle impacts, and offering of energy-efficient buildings provide a competitive advantage through access to green building projects and increasingly strict global regulations. Physical risks associated with climate change are key considerations in the development and realization of projects. Along with resource efficiency, other important challenges for the industry include occupational health and safety, subcontractor management, and the attraction and retention of talent. With increasing infrastructure spending in emerging markets, a company's ability to achieve preferred contractor status depends on its ability to avoid reputational risks associated with antitrust and bribery cases. This makes the establishment and implementation of a rigorous code of conduct a key success factor.

Highlighted criteria & dimension weights

- Environmental Dimension..31%
 - Building Materials
 - Climate Strategy
 - Operational Eco-Efficiency
 - Resource Conservation and Resource Efficiency
- Social Dimension 34%
 - Labor Practice Indicators
 - Occupational Health and Safety
- Governance & Economic Dimension 35%
 - Codes of Business Conduct
 - Corporate Governance
 - Supply Chain Management

Sustainability leaders 2021

S&P Global Gold Class	
Hyundai Engineering & Construction Co., Ltd.	Rep. of Korea
S&P Global Silver Class	
CTCI Corporation	Taiwan
S&P Global Bronze Class	
ACS, Actividades de Construcción y Servicios, S.A.	Spain
Ferrovial, S.A.	Spain
GS Engineering & Construction Corporation*	Rep. of Korea
HOCHTIEF Aktiengesellschaft	Germany
Samsung Engineering Co., Ltd.	Rep. of Korea

Sustainability Yearbook Members

CIMIC Group Limited	Australia
VINCI SA	France

* S&P Global Industry Mover

Industry statistics

Number of companies assessed	139
Market capitalization of assessed companies (in USD billion)	483.3
Number of companies in Yearbook	9
Market capitalization of companies in Yearbook (in USD billion)	108.6



Construction Materials

Driving forces

The construction materials industry includes companies that produce cement, aggregates, concrete, and related materials. Since cement manufacturing accounts for approximately 5% of global man-made greenhouse gas emissions, a sound climate strategy to reduce overall environmental impacts remains a top priority for companies. One of the most powerful ways to control the environmental impact in cement manufacturing is to convert waste materials into fossil fuel alternatives and other raw materials needed in industrial production. Other important environmental issues include reducing water usage and minimizing air emissions. For companies with extraction sites, protecting biodiversity and effective water management are key to maintaining both the social and legal licenses to operate. Both in production and transportation, occupational health and safety remains a challenge for the industry. Companies that can deliver products that meet green building specifications and transform their business models to offer affordable housing and other sustainable construction solutions will hold a competitive advantage.

Highlighted criteria & dimension weights

- Environmental Dimension..33%
 - Climate Strategy
 - Operational Eco-Efficiency
 - Water Related Risks
- Social Dimension 34%
 - Human Rights
 - Occupational Health and Safety
 - Talent Attraction & Retention
- Governance & Economic Dimension 33%
 - Codes of Business Conduct
 - Customer Relationship Management
 - Risk & Crisis Management

Sustainability leaders 2021

S&P Global Gold Class	
The Siam Cement Public Company Limited	Thailand
S&P Global Silver Class	
Cementos Argos S.A.	Colombia
Grupo Argos S.A.	Colombia
S&P Global Bronze Class	
Ambuja Cements Limited	India
CRH plc	Ireland

Sustainability Yearbook Members

Cementos Pacasmayo S.A.A*	Peru
CEMEX, S.A.B. de C.V.	Mexico
HeidelbergCement AG	Germany
LafargeHolcim Ltd	Switzerland
Taiwan Cement Corp.	Taiwan

* S&P Global Industry Mover

Industry statistics

Number of companies assessed	69
Market capitalization of assessed companies (in USD billion)	386
Number of companies in Yearbook	10
Market capitalization of companies in Yearbook (in USD billion)	119.9



Containers & Packaging

Driving forces

Containers and packaging companies are critical to the global economy and supply virtually every sector with tools to effectively protect, transport, market, and preserve their products for sale and use. The importance of packaging has been especially highlighted in the face of the COVID-19 pandemic. Finding sustainable packaging alternatives, therefore, continues to be a major industry trend, driving product development and innovation. Attention should be given to the sourcing of more recycled, certified, and renewable raw materials, as well as reusable packaging. Companies have come under increased pressure from stakeholders to address the crisis of plastics, and the global move towards a circular economy will present new challenges, as well as opportunities. At the same time, markets in which these companies operate remain highly competitive, with substantial downward pressure on both prices and operating margins. Companies will need to innovate and deliver customized solutions, working collaboratively across the value chain to offer differentiated products.

Highlighted criteria & dimension weights

- Environmental Dimension..33%
 - Climate Strategy
 - Operational Eco-Efficiency
 - Product Stewardship
- Social Dimension 33%
 - Human Rights
 - Occupational Health and Safety
 - Talent Attraction & Retention
- Governance & Economic Dimension 34%
 - Corporate Governance
 - Customer Relationship Management
 - Supply Chain Management

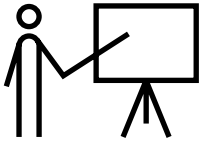
Sustainability leaders 2021

S&P Global Gold Class	
BillerudKorsnäs AB (publ)	Sweden
Sustainability Yearbook Members	
Amcor plc	Switzerland
Klabin S.A.	Brazil
WestRock Company*	United States

* S&P Global Industry Mover

Industry statistics

Number of companies assessed	33
Market capitalization of assessed companies (in USD billion)	223.8
Number of companies in Yearbook	4
Market capitalization of companies in Yearbook (in USD billion)	36.8



Diversified Consumer Services

Driving forces

The diversified consumer services industry comprises service providers with a range of business models, from education to human resources. Companies operating in this space have direct relationships with customers and, therefore, must develop strategies to retain and increase their customer base in existing and new markets. Technological innovations are transforming the industry at a rapid pace and offer both risks and opportunities. Companies can differentiate themselves by effectively integrating online tools and platforms that enhance the overall experience for target groups. One consequence of such a strategy, however, is that data security has become a key risk for companies in this sector. Strong risk management systems, particularly related to electronic billing, personal data privacy, and real-time services are critical to managing risk and offering further growth opportunities. Within service companies, strong employee development and training programs are fundamental to build sustainable businesses and help improve customer satisfaction.

Highlighted criteria & dimension weights

- Environmental Dimension..17%
 - Environmental Policy & Management Systems
 - Operational Eco-Efficiency
- Social Dimension 36%
 - Human Capital Development
 - Human Rights
 - Talent Attraction & Retention
- Governance & Economic Dimension 47%
 - Codes of Business Conduct
 - Customer Relationship Management
 - Privacy Protection
 - Risk & Crisis Management

Sustainability leaders 2021

Sustainability Yearbook Members	
AA plc	United Kingdom

Industry statistics

Number of companies assessed	39
Market capitalization of assessed companies (in USD billion)	199.1
Number of companies in Yearbook	1
Market capitalization of companies in Yearbook (in USD billion)	0.3



Diversified Financial Services and Capital Markets

Driving forces

The diversified financial services and capital markets industry consists of a heterogeneous group of holding companies, asset managers, credit rating agencies, stock exchanges, custody banks, investment banks, and brokerage companies. Sub-industry business models expose companies to different sustainability issues, although with common themes that include corporate governance, sustainable finance, risk management, and compliance. Recently, there has been more demand for transparency with regards to environmental, social, and governance (ESG) criteria and products offered. Financial institutions are also facing a digital transformation, ranging from evolving technologies to increasing digitalization of services and operations. With increased volumes of confidential data being handled by financial service providers, protecting customers' financial and personal data by minimizing cyber risk is crucial to maintaining customer trust. Ongoing regulatory pressure and publicized litigation have sensitized the industry to the very real threats posed by unethical business behavior. In turn, this is leading to greater scrutiny of questionable practices and a re-shaping of corporate culture and employee behavior to better align with customer needs and public interests.

Highlighted criteria & dimension weights

Environmental Dimension..13%
– Climate Strategy

Social Dimension 32%
– Financial Inclusion
– Human Capital Development
– Talent Attraction & Retention

Governance & Economic Dimension 55%
– Codes of Business Conduct
– Corporate Governance
– Customer Relationship Management
– Risk & Crisis Management
– Sustainable Finance

Sustainability leaders 2021

●	S&P Global Gold Class		S&P Global Inc.	United States
	UBS Group AG	Switzerland	Samsung Securities Co Ltd	Rep. of Korea
●	S&P Global Silver Class		State Street Corporation	United States
	Grupo de Inversiones Suramericana S.A.	Colombia	The Bank of New York Mellon Corporation	United States
●	S&P Global Bronze Class		Voya Financial, Inc.	United States
	Yuanta Financial Holding Co., Ltd	Taiwan	Wendel	France
Sustainability Yearbook Members			* S&P Global Industry Mover	
Chailease Holding Company Limited*				
		Taiwan		
		Switzerland		
		Japan		
		Germany		
		South Africa		
		United Kingdom		
Industry statistics				
			Number of companies assessed	306
			Market capitalization of assessed companies (in USD billion)	3439.3
			Number of companies in Yearbook	20
			Market capitalization of companies in Yearbook (in USD billion)	370.4
		India		
		Rep. of Korea		
		Japan		
		United Kingdom		
		United Kingdom		



Electric Utilities

Driving forces

Electric utilities are facing fundamental challenges, from the need to decarbonize generation to the decentralization of the grid to digitalization. Challenges also include changing regulations, as well as market and power grid dynamics due to the rise of cheap renewable electricity generation. One-time oligopolistic utility operators are now under threat from new market entrants that offer energy along with other conveniently bundled technologies and services. The increasing integration of renewable energies into the energy mix requires flexible power management and smart, integrated energy solutions. Significant efforts are also needed to develop and evolve the current grid to prepare for new requirements, such as expanding electric vehicle charging infrastructure. In emerging markets, industrialization and urbanization require large investments to create sustainable generation capacity. In addition, an uncertain and changing regulatory backdrop increases the risks inherent in some of the long-term financing approaches typical in the industry.

Highlighted criteria & dimension weights

Environmental Dimension..39%

- Climate Strategy
- Electricity Generation
- Operational Eco-Efficiency

Social Dimension 29%

- Occupational Health and Safety
- Stakeholder Engagement
- Talent Attraction & Retention

Governance & Economic Dimension 32%

- Codes of Business Conduct
- Corporate Governance
- Market Opportunities

Sustainability leaders 2021

S&P Global Gold Class		Sustainability Yearbook Members	
Acciona, S.A.	Spain	AES Gener S.A.	Chile
Terna - Rete Elettrica Nazionale		Avangrid, Inc.	United States
Società per Azioni	Italy	Colbún S.A.	Chile
S&P Global Silver Class		CLP Holdings Limited	Hong Kong
EDP - Energias de Portugal, S.A.	Portugal	Duke Energy Corporation	United States
Endesa, S.A.	Spain	EDP Renováveis, S.A.	Spain
Enel Chile S.A.	Chile	Exelon Corporation	United States
Enel SpA	Italy	Global Power Synergy	
Iberdrola, S.A.	Spain	Public Company Limited	Thailand
Red Eléctrica Corporación, S.A.	Spain	Gulf Energy Development	
S&P Global Bronze Class		Public Company Limited*	Thailand
CELSIA S.A. E.S.P.	Colombia	Korea Electric Power Corporation	Rep. of Korea
Centrais Elétricas		Neoenergia S.A.	Brazil
Brasileiras S.A. - Eletrobrás	Brazil		
Companhia Energética			
de Minas Gerais	Brazil		
Electricité de France S.A.	France		
Electricity Generating			
Public Company Limited	Thailand		
Enel Américas S.A.	Chile		
Entergy Corporation	United States		
Interconexión Eléctrica			
S.A. E.S.P.	Colombia		
The AES Corporation	United States		

* S&P Global Industry Mover

Industry statistics

Number of companies assessed	189
Market capitalization of assessed companies (in USD billion)	1861
Number of companies in Yearbook	28
Market capitalization of companies in Yearbook (in USD billion)	598.8



Electrical Components & Equipment

Driving forces

Companies in the electrical components and equipment industry support access to power distribution and renewable energy generation, plus provide innovative solutions for improving energy and resource efficiency in manufacturing and process industries. Companies that succeed in product development with short time-to-market, or by lowering costs, will be best positioned to capture and retain market share. Investments in smart power distribution and clean power generation will increase as developed markets update aging energy infrastructure and emerging markets expand their power grids. These companies play a significant role in helping customers achieve their energy efficiency and carbon reduction goals. High exposure to emerging markets and public sector projects can increase the risk of corruption and anti-competitive practices. As components become integrated into wider networks there will be increasing exposure to sophisticated digital security threats, so product technologies need to be increasingly secure. A highly complex value chain makes strong supply chain management essential. Monitoring issues, such as human rights, conflict minerals, and environmental compliance, will remain important.

Highlighted criteria & dimension weights

- Environmental Dimension..28%
 - Climate Strategy
 - Operational Eco-Efficiency
 - Product Stewardship
- Social Dimension 28%
 - Human Capital Development
 - Occupational Health and Safety
- Governance & Economic Dimension41%
 - Codes of Business Conduct
 - Corporate Governance
 - Innovation Management
 - Supply Chain Management

Sustainability leaders 2021

S&P Global Gold Class	
Schneider Electric S.E.	France
S&P Global Silver Class	
Prysmian S.p.A.	Italy
Signify N.V.	Netherlands
S&P Global Bronze Class	
OSRAM Licht AG	Germany

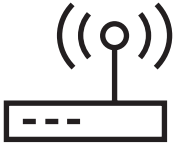
Sustainability Yearbook Members

Havells India Limited	India
Legrand SA	France
TECO Electric & Machinery Co., Ltd.*	Taiwan

* S&P Global Industry Mover

Industry statistics

Number of companies assessed	89
Market capitalization of assessed companies (in USD billion)	706.3
Number of companies in Yearbook	7
Market capitalization of companies in Yearbook (in USD billion)	125.9



Electronic Equipment, Instruments & Components

Driving forces

Technological innovations, such as 5G, the Internet of Things, Artificial Intelligence, and maximizing power usage and efficiency are increasing in importance in the electronic equipment, instruments, and components industry. Electronic components have complex global supply chains that can lead to issues with unfair labor practices, conflict mineral sourcing, and the use of harmful chemicals during manufacturing. The implementation and operation of a transparent, sustainable supply chain is required to address these issues. Superior product stewardship includes measures such as energy-saving features and energy-consumption management, as well as security features such as automatic software/firmware upgrades to harden devices against cyberattacks. Products must be designed with an end-of-life strategy (i.e., repair/reuse, downcycle, and recycle), and the use of robotics and automation can help improve the efficiency of resource-intensive production processes. Given the industry's oligopolistic market structure, compliance with antitrust regulations is also important.

Highlighted criteria & dimension weights

- Environmental Dimension . 30%
 - Climate Strategy
 - Operational Eco-Efficiency
 - Product Stewardship

- Social Dimension 29%
 - Occupational Health and Safety
 - Talent Attraction & Retention

- Governance & Economic Dimension41%
 - Codes of Business Conduct
 - Corporate Governance
 - Innovation Management
 - Supply Chain Management

Sustainability leaders 2021

S&P Global Gold Class	
Delta Electronics, Inc.	Taiwan
OMRON Corporation	Japan
S&P Global Silver Class	
Delta Electronics (Thailand) Public Company Limited	Thailand
S&P Global Bronze Class	
AU Optronics Corp.	Taiwan
Innolux Corporation	Taiwan
Yokogawa Electric Corporation	Japan

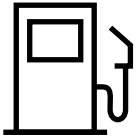
Industry statistics

Number of companies assessed	220
Market capitalization of assessed companies (in USD billion)	1332.2
Number of companies in Yearbook	15
Market capitalization of companies in Yearbook (in USD billion)	202.3

Sustainability Yearbook Members

Flex Ltd.	Singapore
Ibiden Co.,Ltd.	Japan
Kyocera Corporation	Japan
LG Display Co., Ltd.	Rep. of Korea
LG Innotek Co., Ltd.	Rep. of Korea
Samsung Electro-Mechanics Co., Ltd.	Rep. of Korea
Samsung SDI Co., Ltd.	Rep of Korea
TDK Corporation*	Japan
TE Connectivity Ltd.	Switzerland

* S&P Global Industry Mover



Energy Equipment & Services

Driving forces

The ability of energy equipment and services companies to attract new business is closely tied to their adherence to environmental, health and safety, and business conduct standards. In providing a variety of services to government-owned and national oil and gas suppliers, companies carry a measure of responsibility for the public perception of exploration and production activities and their customers' reputations. The need for companies to maintain their standing as safe, reliable partners is challenged when they operate in technically difficult areas, and where local jurisdictions provide weak legal and regulatory enforcement. Innovation and solutions to address customers' technological and cost challenges are a potential source of competitive advantage and can serve as tools to control risk. At the same time, the industry needs to attract and retain skilled staff and maintain expertise in technology research and development, while controlling production costs. Supporting high occupational and environmental health and safety standards also helps with talent attraction.

Highlighted criteria & dimension weights

- Environmental Dimension..25%
 - Climate Strategy
 - Operational Eco-Efficiency
- Social Dimension 37%
 - Human Capital Development
 - Occupational Health and Safety
 - Talent Attraction & Retention
- Governance & Economic Dimension 38%
 - Codes of Business Conduct
 - Corporate Governance
 - Innovation Management
 - Risk & Crisis Management

Sustainability leaders 2021

S&P Global Gold Class

Saipem SpA Italy

Sustainability Yearbook Members

SBM Offshore N.V.* Netherlands

Schlumberger Limited United States

Industry statistics

Number of companies assessed	53
Market capitalization of assessed companies (in USD billion)	136.5
Number of companies in Yearbook	3
Market capitalization of companies in Yearbook (in USD billion)	34.7

* S&P Global Industry Mover



Food & Staples Retailing

Driving forces

The industry continues to be influenced by IT advances that now shape entire business models and value chains. IT infrastructure remains critical to increase efficiency in operations and to improve communication with customers, particularly as COVID-19 continues to disrupt the industry. Phenomena, such as panic buying and growth in online grocery shopping, highlight the importance of customer relationship management. New technologies enable companies to align with another major industry driver, that is growing consumer demand for sustainable, healthy, and natural food choices. Food retailers need to enhance transparency in supply chains, integrate ESG thresholds in procurement policies, increase the share of local responsibly-produced foodstuffs, and reduce food loss and waste volumes. The expiration of drug patents will continue to generate revenue and growth, as drug retailers in the sector offer consumers generic alternatives to name-brand blockbusters. Drug retailers and consumers alike have already enjoyed significant cost savings with the availability of this wave of generic drugs.

Highlighted criteria & dimension weights

- Environmental Dimension..31%
 - Operational Eco-Efficiency
 - Packaging
 - Raw Material Sourcing
- Social Dimension 30%
 - Human Capital Development
 - Occupational Health and Safety
 - Talent Attraction & Retention
- Governance & Economic Dimension 39%
 - Customer Relationship Management
 - Health & Nutrition
 - Supply Chain Management

Sustainability leaders 2021

S&P Global Gold Class	
President Chain Store Corporation	Taiwan
S&P Global Silver Class	
CP ALL Public Company Limited	Thailand
Koninklijke Ahold Delhaize N.V.	Netherlands
S&P Global Bronze Class	
Metro AG	Germany

Industry statistics

Number of companies assessed	101
Market capitalization of assessed companies (in USD billion)	1378.4
Number of companies in Yearbook	12
Market capitalization of companies in Yearbook (in USD billion)	156.4

Sustainability Yearbook Members

Almacenes Éxito S.A.	Colombia
Berli Jucker Public Company Limited*	Thailand
Carrefour SA	France
Casino, Guichard-Perrachon Société Anonyme	France
Cencosud S.A.	Chile
Kesko Oyj	Finland
Seven & i Holdings Co., Ltd.	Japan
Tesco PLC	United Kingdom

* S&P Global Industry Mover



Food Products

Driving forces

Changes in the food products industry continue to be driven by a growing middle class in emerging economies. The shock caused by COVID-19 resulted in disruption to the entire value chain, and redefined key trends within the industry. Sustainable and natural ingredients, along with convenience and nutrition, remain key drivers. Reduced demand caused by closures of food outlets, as well as panic buying in retail, led to price spikes that are increasing the risk of a global crisis. To avoid this, food product producers must review existing supply chain strategies and address inefficiencies in their value chains, such as food loss and waste. Furthermore, occupational health and safety practices need to be reviewed, particularly as processing plants have shown increased rates of COVID-19 infections among the workforce. Alongside social pressures, food producers are expected to uphold commitments to eradicate the environmental impacts of their agricultural commodity supply chains, such as preventing destruction of natural habitats and promoting biodiversity in existing food systems.

Highlighted criteria & dimension weights

- Environmental Dimension...28%
 - Climate Strategy
 - Operational Eco-Efficiency
 - Packaging
 - Raw Material Sourcing
- Social Dimension 30%
 - Human Rights
 - Occupational Health and Safety
- Governance & Economic Dimension 42%
 - Health & Nutrition
 - Innovation Management
 - Supply Chain Management

Sustainability leaders 2021

●	S&P Global Gold Class		The Hershey Company	United States
	Grupo Nutresa S. A.	Colombia	The Kraft Heinz Company*	United States
	Thai Union Group Public Company Limited	Thailand	Ülker Bisküvi Sanayi A.S.	Turkey
	* S&P Global Industry Mover			
●	S&P Global Silver Class		Industry statistics	
	Charoen Pokphand Foods Public Company Limited	Thailand	Number of companies assessed	203
	Mitr Phol Sugar Corporation Limited	Thailand	Market capitalization of assessed companies (in USD billion)	1724.1
●	S&P Global Bronze Class		Number of companies in Yearbook	20
	Colombina S.A.	Colombia	Market capitalization of companies in Yearbook (in USD billion)	657.8
	Mondelez International, Inc.	United States		
Sustainability Yearbook Members				
	Ajinomoto Co., Inc.	Japan		
	Archer-Daniels-Midland Company	United States		
	Campbell Soup Company	United States		
	CJ Cheiljedang Corporation	Rep. of Korea		
	Danone S.A.	France		
	General Mills, Inc.	United States		
	Kellogg Company	United States		
	Nestlé S.A.	Switzerland		
	Nissin Foods Holdings Co.,Ltd.	Japan		
	Orkla ASA	Norway		
	Pulmuone Co., Ltd.	Rep. of Korea		



Gas Utilities

Driving forces

Although natural gas is a key contributor to greenhouse gas emissions worldwide, it is also the least carbon-intensive fossil fuel. As a substitute for coal power, or oil in the heating and transportation sectors, it can help reduce CO2 emissions, water consumption, and air pollution in the short and medium term. However, as a fossil fuel it still contributes to climate change and, therefore, is threatened by increased regulatory action. While gas supplies are increasingly readily available – driven by the development of unconventional resources that are reshaping the industry – long-term demand could be threatened by lower-cost alternatives resulting in an increased risk of stranded assets. Gas utilities must, therefore, explore new business models based on clean energies, such as biogas, wind, and solar, or power-to-gas technologies. Moreover, high-profile gas accidents have raised public awareness of aging gas infrastructure and leakage risks. As a result, building stakeholder trust and increasing the safety, reliability, and energy-efficiency of operations are key requirements for the industry.

Highlighted criteria & dimension weights

- Environmental Dimension...32%
 - Climate Strategy
 - Environmental Policy & Management Systems
 - Operational Eco-Efficiency
 - Transmission & Distribution
- Social Dimension 35%
 - Occupational Health and Safety
 - Stakeholder Engagement
- Governance & Economic Dimension 33%
 - Corporate Governance
 - Market Opportunities
 - Supply Chain Management

Sustainability leaders 2021

S&P Global Gold Class	
Enagás, S.A.	Spain
S&P Global Silver Class	
Naturgy Energy Group, S.A.	Spain
S&P Global Bronze Class	
Italgas S.p.A.*	Italy

Industry statistics

Number of companies assessed	45
Market capitalization of assessed companies (in USD billion)	275.3
Number of companies in Yearbook	6
Market capitalization of companies in Yearbook (in USD billion)	56.5

Sustainability Yearbook Members

Korea Gas Corporation	Rep of Korea
Promigas S.A. E.S.P.	Colombia
Snam S.p.A.	Italy

* S&P Global Industry Mover



Health Care Equipment & Supplies

Driving forces

The health care equipment and supplies industry develops medical products, such as orthopedic implants and cardiovascular devices, as well as medical supplies and instruments. Product quality and safety, as well as collaboration with stakeholders, are critical for supporting the successful marketing of products and maintaining a company's license to operate. While budget constraints and health care reforms have affected pricing, reimbursement, and utilization, the COVID – 19 pandemic, as well as the emergence of less invasive technologies and rising income levels, have created new growth opportunities. Sustainable companies in this sector focus on developing innovative and highly-differentiated products, lowering the skills barrier for care providers, expanding eligible patient populations, and demonstrating their products' clinical and economic benefits. Moreover, they adopt consistent, value- and stakeholder-oriented corporate strategies and governance systems based on effective human and intellectual capital management and transparent reporting frameworks.

Highlighted criteria & dimension weights

- Environmental Dimension.. 10%
 - Climate Strategy
- Social Dimension 37%
 - Health Outcome Contribution
 - Occupational Health and Safety
 - Strategy to Improve Access to Drugs or Products
- Governance & Economic Dimension 53%
 - Codes of Business Conduct
 - Innovation Management
 - Marketing Practices
 - Product Quality and Recall Management
 - Supply Chain Management

Sustainability leaders 2021

S&P Global Gold Class	
Abbott Laboratories	United States
S&P Global Bronze Class	
Koninklijke Philips N.V.	Netherlands
Sonova Holding AG	Switzerland

Sustainability Yearbook Members

Baxter International Inc.	United States
bioMérieux S.A.	France
Edwards Lifesciences Corporation	United States
Medtronic plc	Ireland
Olympus Corporation*	Japan
Smith & Nephew plc	United Kingdom
Systemex Corporation	Japan

* S&P Global Industry Mover

Industry statistics

Number of companies assessed	153
Market capitalization of assessed companies (in USD billion)	2200.8
Number of companies in Yearbook	10
Market capitalization of companies in Yearbook (in USD billion)	582.4



Health Care Providers & Services

Driving forces

The health care providers and services industry includes managed care, insurers, distributors, hospitals, and clinics. The COVID – 19 pandemic, as well as other trends – such as aging populations, the increasing prevalence of chronic diseases, and mounting pressure on health care budgets – are key factors affecting this industry. Rising health care costs and the growing divide in access are major societal challenges. Leading companies search for cost-effective, sustainable health care systems by engaging with stakeholders, including government payers, employers, providers, and patients. As the industry moves towards more patient-centric care, companies should focus on labor-saving technologies, human capital management, cost-effective health outcomes, early intervention, prevention over late-stage treatment, and ongoing disease management, rather than isolated, disconnected, and episodic care. This will help lead to an increase in the importance of customer-oriented services, integrative care, and strategic alliances across traditional business boundaries.

Highlighted criteria & dimension weights

- Environmental Dimension..11%
 - Operational Eco-Efficiency
- Social Dimension 42%
 - Human Rights
 - Occupational Health and Safety
 - Partnerships Towards Sustainable Healthcare
- Governance & Economic Dimension 47%
 - Codes of Business Conduct
 - Customer Relationship Management
 - Marketing Practices
 - Risk & Crisis Management
 - Supply Chain Management

Sustainability leaders 2021

S&P Global Gold Class	
Cigna Corporation	United States
S&P Global Silver Class	
CVS Health Corporation*	United States
Sustainability Yearbook Members	
Anthem, Inc.	United States
DaVita Inc.	United States
Fleury S.A.	Brazil
Humana Inc.	United States
Quest Diagnostics Incorporated	United States
UnitedHealth Group Incorporated	United States

* S&P Global Industry Mover

Industry statistics

Number of companies assessed	100
Market capitalization of assessed companies (in USD billion)	1190.1
Number of companies in Yearbook	8
Market capitalization of companies in Yearbook (in USD billion)	644.5



Homebuilding

Driving forces

Growth in the homebuilding industry is largely driven by external factors, such as interest rates and general economic conditions. It is also driven by highly-specific national and regional housing markets, where price pressures and tighter regulation remain constant challenges. Resource conservation and environmental efficiency are key industry drivers in both the building stage and use stage of the product lifecycle, pushed by increasing customer demand and stricter legal requirements. Companies that are able to respond to new technological developments – such as low-energy, passive, and plus-energy buildings – are likely to remain at the forefront of the industry. In addition, companies that are flexible in adapting to regulations regarding social integration (e.g., quotas for new developments designed for lower-income groups or disadvantaged individuals) can potentially gain a competitive advantage. With occupational health and safety risks high in this industry, there is a sustained need for strict management practices to minimize injuries among employees and external contractors.

Highlighted criteria & dimension weights

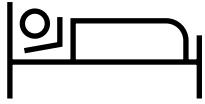
- Environmental Dimension...37%
 - Biodiversity
 - Building Materials
 - Climate Strategy
 - Operational Eco-Efficiency
 - Resource Conservation and Resource Efficiency
- Social Dimension 34%
 - Occupational Health and Safety
 - Social Integration & Regeneration
- Governance & Economic Dimension 29%
 - Codes of Business Conduct
 - Corporate Governance

Sustainability leaders 2021

S&P Global Gold Class	
Sekisui House, Ltd.	Japan
Sumitomo Forestry Co., Ltd.	Japan
S&P Global Bronze Class	
Sekisui Chemical Co., Ltd.	Japan
Sustainability Yearbook Members	
Taylor Wimpey plc	United Kingdom

Industry statistics

Number of companies assessed	54
Market capitalization of assessed companies (in USD billion)	203.9
Number of companies in Yearbook	4
Market capitalization of companies in Yearbook (in USD billion)	30.8



Hotels, Resorts & Cruise Lines

Driving forces

The COVID-19 pandemic has had an unprecedented impact on hotels, resorts, and cruise lines. With global travel halting due to restrictions, up to 120 million tourism jobs are at risk, according to the World Tourism Organization. Going forward, sustainability will be even more central to attract customers, enhance product offerings, and engage more actively with stakeholders. Environmental preservation and an increased interest in eco-tourism and volunteer tourism have created new business opportunities, while hotels, resorts, and cruise operators place greater emphasis on reducing their environmental impact. Human rights issues linked to local employment must continue to be addressed, and implementation of local monitoring systems is crucial. Industry-wide efforts to address issues such as human trafficking offer an opportunity for companies to consistently and effectively tackle both these concerns. Long-term risk management systems must address economic, geopolitical, and climate risks to support business continuity and adaptability to changing global conditions.

Highlighted criteria & dimension weights

- Environmental Dimension..24%
 - Climate Strategy
 - Environmental Policy & Management Systems
 - Operational Eco-Efficiency
- Social Dimension41%
 - Human Rights
 - Labor Practice Indicators
 - Occupational Health and Safety
- Governance & Economic Dimension 35%
 - Codes of Business Conduct
 - Customer Relationship Management
 - Risk & Crisis Management

Sustainability leaders 2021

S&P Global Gold Class	
Hilton Worldwide Holdings Inc.	United States
S&P Global Silver Class	
Meliá Hotels International, S.A.	Spain
S&P Global Bronze Class	
NH Hotel Group, S.A.*	Spain

Industry statistics

Number of companies assessed	46
Market capitalization of assessed companies (in USD billion)	233.1
Number of companies in Yearbook	6
Market capitalization of companies in Yearbook (in USD billion)	51.4

Sustainability Yearbook Members

InterContinental Hotels	
Group PLC	United Kingdom
Minor International Public	
Company Limited	Thailand
TUI AG	Germany

* S&P Global Industry Mover



Household Durables

Driving forces

The household durables industry includes home electronics, home furnishings, and household appliances. It is characterized by continuously evolving consumer preferences for customized products, advances in technology (e.g., The Internet of Things), and automation, plus increasing demand for eco-friendly products and smart homes. The industry faces opportunities and challenges related to global trends. This includes a growing world population, an expanding middle class, urbanization, and climate change. Successful companies in this industry stand out through brand management, innovation, product quality and safety, and customer service. Leading companies proactively integrate sustainability into their business models by focusing on product stewardship, operational eco-efficiency, responsible sourcing, enhanced transparency, and product labeling, as well as end-of-life solutions for customers. Increased connectivity of household appliances brings many benefits, but also increases the risks of data breaches, making cybersecurity a top priority.

Highlighted criteria & dimension weights

- Environmental Dimension..22%
 - Climate Strategy
 - Operational Eco-Efficiency
 - Product Stewardship
- Social Dimension 28%
 - Human Capital Development
 - Talent Attraction & Retention
- Governance & Economic Dimension 50%
 - Customer Relationship Management
 - Innovation Management
 - Product Quality and Recall Management
 - Supply Chain Management

Sustainability leaders 2021

S&P Global Gold Class	
Arçelik Anonim Sirketi*	Turkey
S&P Global Silver Class	
AB Electrolux (publ)	Sweden
Sustainability Yearbook Members	
COWAY Co., Ltd.	Rep. of Korea
Whirlpool Corporation	United States

* S&P Global Industry Mover

Industry statistics

Number of companies assessed	53
Market capitalization of assessed companies (in USD billion)	341.5
Number of companies in Yearbook	4
Market capitalization of companies in Yearbook (in USD billion)	26



Household Products

Driving forces

Producers of household products, such as cleaning and related paper-based products, operate in highly-competitive markets, where large buyers have the most bargaining power and consumers have low switching costs. Therefore, it is essential for industry participants to strengthen their brands and create products that meet consumer requirements regarding performance, quality, and functionality. Hence, product stewardship is a key success factor in the industry. In particular, the consideration of environmental and social criteria in product design processes is essential. Manufacturers of household products that phase out substances of concern, choose natural/organic ingredients, and develop responsible packaging solutions are better positioned to capitalize on the increasing demand for natural products. By improving social and environmental features in products, industry participants can not only accelerate top-line growth, but also help respond effectively to regulatory changes, improve margins, and enhance brand value.

Highlighted criteria & dimension weights

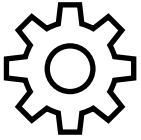
- Environmental Dimension..21%
 - Operational Eco-Efficiency
 - Packaging
 - Product Stewardship
- Social Dimension 26%
 - Human Capital Development
 - Occupational Health and Safety
- Governance & Economic Dimension 53%
 - Customer Relationship Management
 - Innovation Management
 - Product Quality and Recall Management
 - Supply Chain Management

Sustainability leaders 2021

● S&P Global Gold Class	
Colgate-Palmolive Company	United States
● S&P Global Silver Class	
Essity AB (publ).	Sweden
● S&P Global Bronze Class	
Reckitt Benckiser Group plc	United Kingdom

Industry statistics

Number of companies assessed	21
Market capitalization of assessed companies (in USD billion)	787.4
Number of companies in Yearbook	3
Market capitalization of companies in Yearbook (in USD billion)	158.2



Industrial Conglomerates

Driving forces

Industrial conglomerates are highly dispersed businesses working across globalized value chains. They rely on strong management and governance structures to achieve company synergies and economies of scale, and resource-efficient and lean manufacturing processes are important aspects of their business strategies. Within this framework, the development of new resource-efficient technologies through careful product stewardship is important to gaining market share and increasing growth and profitability. Supply chain management and supplier sustainability risk assessments are particularly important with respect to labor practices. Having strong business ethics throughout their operations is critical, as these companies typically have a global presence extending into emerging markets. Such conglomerates must, therefore, focus on promoting common corporate values that recognize the diversity brought about by multicultural backgrounds, while also developing policies and building compliance systems to prevent corruption and illegal market practices.

Highlighted criteria & dimension weights

- Environmental Dimension..29%
 - Climate Strategy
 - Operational Eco-Efficiency
 - Product Stewardship
- Social Dimension 28%
 - Human Capital Development
 - Occupational Health and Safety
 - Talent Attraction & Retention
- Governance & Economic Dimension 43%
 - Corporate Governance
 - Innovation Management
 - Supply Chain Management

Sustainability leaders 2021

S&P Global Gold Class	
SK Holdings Co., Ltd	Rep. of Korea
S&P Global Silver Class	
Siemens Aktiengesellschaft	Germany
Sustainability Yearbook Members	
AntarChile S.A.	Chile
Doosan Corporation	Rep. of Korea
Keppel Corporation Limited*	Singapore
Samsung C&T Corporation	Rep. of Korea

* S&P Global Industry Mover

Industry statistics

Number of companies assessed	66
Market capitalization of assessed companies (in USD billion)	859
Number of companies in Yearbook	6
Market capitalization of companies in Yearbook (in USD billion)	145.9



Insurance

Driving forces

The insurance industry has demonstrated leadership in integrating sustainability considerations into its core business. Most notably, leading insurers are increasingly considering long-term sustainability trends and factors in the development of new sustainable insurance solutions, as well as in their risk assessments and claims-management processes. This includes climate change risk and cybersecurity risk. At the same time, as the industry embraces digitalization, it faces both significant threats and opportunities. Digitalization has provided consumers with increased transparency and choice, while simultaneously providing insurers with new direct-to-consumer channels for delivering products and services. Leading insurers, particularly those in life insurance, are exploring ways to use developments in digital technology to offer innovative products customized to the needs of customers and incentivize healthier lifestyles through lower premiums. Negative impacts caused by the effects of the COVID-19 pandemic, however, may potentially lead to an industry-wide increase in claims and premiums.

Highlighted criteria & dimension weights

Environmental Dimension..13%
 – Climate Strategy

Social Dimension 33%
 – Financial Inclusion
 – Human Capital Development
 – Talent Attraction & Retention

Governance & Economic Dimension 54%
 – Codes of Business Conduct
 – Corporate Governance
 – Principles for Sustainable Insurance
 – Risk & Crisis Management
 – Sustainable Finance

Sustainability leaders 2021

S&P Global Gold Class			
Zurich Insurance Group AG	Switzerland	Ping An Insurance (Group) Company of China, Ltd.	China
S&P Global Silver Class		QBE Insurance Group Limited	Australia
Allianz SE	Germany	Samsung Fire & Marine Insurance Co., Ltd.	Rep. of Korea
AXA SA	France	Shin Kong Financial Holding Co., Ltd.	Taiwan
Cathay Financial Holding Co., Ltd.	Taiwan	Sompo Holdings, Inc.	Japan
China Development Financial Holding Corporation	Taiwan	Sul América S.A.	Brazil
Poste Italiane SpA	Italy	Sun Life Financial Inc.	Canada
Swiss Re AG	Switzerland	Suncorp Group Limited*	Australia
S&P Global Bronze Class		The Hartford Financial Services Group, Inc.	United States
ASR Nederland N.V.	Netherlands	Tokio Marine Holdings, Inc.	Japan
Assicurazioni Generali S.p.A.	Italy		
Fubon Financial Holding Co., Ltd.	Taiwan		
NN Group N.V.	Netherlands		
Storebrand ASA	Norway		

* S&P Global Industry Mover

Sustainability Yearbook Members

Dai-ichi Life Holdings, Inc.	Japan
Insurance Australia Group Limited	Australia
Mapfre, S.A.	Spain
MetLife, Inc.	United States
MS&AD Insurance Group Holdings, Inc.	Japan
Münchener Rückversicherungs-Gesellschaft Aktiengesellschaft in München	Germany

Industry statistics

Number of companies assessed	203
Market capitalization of assessed companies (in USD billion)	2549.2
Number of companies in Yearbook	28
Market capitalization of companies in Yearbook (in USD billion)	829.7



Interactive Media, Services & Home Entertainment

Driving forces

This industry includes companies producing and distributing digital content and generating revenues via advertising on social media, search engines, and review portals. A distinctive characteristic of the industry is the ability of audiences to simultaneously be the consumer, the product, and the content creator. Increasing regulation and customer demand for greater transparency on storage and utilization of personal information are bringing data privacy issues into the spotlight. Innovation around customer acquisition and experience demands a highly-technical and creative skill set, especially in the field of gaming applications. Visually-focused media is increasingly mobile based, with freemium business models emerging to combine entertainment, social media, and e-commerce in order to reach untapped audiences. Regulatory changes regarding consumer and data protection, content limitations, privacy, network security, encryption, antitrust, taxation, and payment laws will also continue to significantly challenge the industry, especially since different jurisdictions may choose to follow divergent paths.

Highlighted criteria & dimension weights

- Environmental Dimension..21%
 - Climate Strategy
 - Operational Eco-Efficiency
- Social Dimension 27%
 - Human Capital Development
 - Labor Practice Indicators
 - Talent Attraction & Retention
- Governance & Economic Dimension 52%
 - Customer Relationship Management
 - Information Security/ Cybersecurity & System Availability
 - Innovation Management
 - Privacy Protection

Sustainability leaders 2021

Sustainability Yearbook Members	
Adevinta ASA	Norway
Alphabet Inc.	United States
Modern Times Group Mtg AB	Sweden
REA Group Limited	Australia
Snap Inc.	United States
Z Holdings Corporation*	Japan

* S&P Global Industry Mover

Industry statistics

Number of companies assessed	88
Market capitalization of assessed companies (in USD billion)	3707.6
Number of companies in Yearbook	6
Market capitalization of companies in Yearbook (in USD billion)	1311.4



IT services

Driving forces

The IT services industry consists of companies offering services and infrastructure for the IT industry, including data centers, cloud storage solutions, and hosting services. It also covers companies delivering specialized IT functions, such as consulting and outsourced services, as well as online payments. IT services companies are undergoing shifts in their business models, enabled by the existence of cloud business models that are leading to easier procurement of IT services and integration from lower-cost locations. As a result, challengers are being launched at unprecedented speed, with a low-cost base to compete directly with established players. The industry is characterized by companies that place a heavy emphasis on innovation and depend on human and intellectual capital. Talent is, therefore, the most prominent driver of costs, with investment in skills being particularly important. Technological advancements, security vulnerabilities, and the increased regulatory landscape (e.g., GDPR compliance) are the main factors that will impact a company's future success.

Highlighted criteria & dimension weights

- Environmental Dimension..21%
 - Climate Strategy
 - Environmental Policy & Management Systems
 - Operational Eco-Efficiency
- Social Dimension 27%
 - Human Capital Development
 - Talent Attraction & Retention
- Governance & Economic Dimension 52%
 - Customer Relationship Management
 - Information Security/ Cybersecurity & System Availability
 - Innovation Management
 - Privacy Protection

Sustainability leaders 2021

S&P Global Gold Class	
Atos SE	France
Indra Sistemas, S.A.	Spain
S&P Global Silver Class	
Amadeus IT Group, S.A.	Spain
Nomura Research Institute, Ltd.	Japan
NTT DATA Corporation	Japan
Wipro Limited	Japan
S&P Global Bronze Class	
NEC Corporation	Japan
Tech Mahindra Limited	India

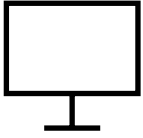
Industry statistics

Number of companies assessed	203
Market capitalization of assessed companies (in USD billion)	2549.2
Number of companies in Yearbook	28
Market capitalization of companies in Yearbook (in USD billion)	829.7

Sustainability Yearbook Members

Capgemini SE*	France
Cielo S.A.	Brazil
Fujitsu Limited	Japan
Infosys Limited	India
Mastercard Incorporated	United States
Nexi S.p.A.	Italy
Samsung SDS Co.,Ltd.	Rep. of Korea
Tata Consultancy Services Limited	India
Vakrangee Limited	India
Visa Inc.	United States
Worldline S.A.	France

* S&P Global Industry Mover



Leisure Equipment & Products and Consumer Electronics

Driving forces

The leisure equipment and consumer electronics industry is highly competitive. Key industry drivers include product quality, time to market, and brand management. Since new products become commoditized quickly, companies need to focus on innovation, particularly R&D, to maintain their competitive advantage and brand perception. Similarly, many companies in the industry must manage the cyclical nature of new product releases. Given labor intensity in manufacturing, companies should closely monitor working conditions along their supply chains, particularly in developing countries. In addition, firms must manage environmental challenges throughout the product lifecycle, including product modularity, the use of toxic substances in the manufacturing process and within products, operational eco-efficiency, and recycling through effective take-back programs for the proper disposal of used and obsolete products. Increased connectivity of leisure equipment and consumer electronics brings many benefits, but also increases the risks of data breaches, making cybersecurity a top priority.

Highlighted criteria & dimension weights

- Environmental Dimension..28%
 - Climate Strategy
 - Operational Eco-Efficiency
 - Product Stewardship

- Social Dimension 29%
 - Human Rights
 - Occupational Health and Safety
 - Talent Attraction & Retention

- Governance & Economic Dimension 43%
 - Customer Relationship Management
 - Innovation Management
 - Supply Chain Management

Sustainability leaders 2021

S&P Global Gold Class	
LG Electronics Inc.	Rep. of Korea
Sustainability Yearbook Members	
Casio Computer Co.,Ltd.	Japan
Nikon Corporation	Japan

Industry statistics

Number of companies assessed	52
Market capitalization of assessed companies (in USD billion)	333.5
Number of companies in Yearbook	3
Market capitalization of companies in Yearbook (in USD billion)	19.7



Life Sciences Tools & Services

Driving forces

Life sciences tools and services companies can play a leading role in the global efforts underway to diagnose, treat, and prevent infections from the COVID-19 pandemic. The industry includes companies developing technologies, instruments, and tests that enable scientific and medical progress through research, the development of new medical products, and diagnostic testing and analysis. These companies rely on government spending and academic or private sector R&D budgets, making them sensitive to economic cycles. As a knowledge-intensive industry, these companies depend on a skilled workforce to drive innovation, making human capital management and talent attraction and retention important success factors. Effective customer relationship management is also crucial to gain customer loyalty for established products and technologies, and to facilitate the adoption of innovative new technologies. Comprehensive supply chain management strategies that consider environmental and social factors help enable companies to minimize the economic, social, and reputational risks associated with their supply chain.

Highlighted criteria & dimension weights

- Environmental Dimension..10%
 - Climate Strategy
 - Environmental Reporting
 - Operational Eco-Efficiency
- Social Dimension 36%
 - Human Capital Development
 - Talent Attraction & Retention
- Governance & Economic Dimension 54%
 - Codes of Business Conduct
 - Corporate Governance
 - Innovation Management
 - Supply Chain Management

Sustainability leaders 2021

Sustainability Yearbook Members	
Agilent Technologies, Inc.	United States
Illumina, Inc.*	United States

* S&P Global Industry Mover

Industry statistics

Number of companies assessed	43
Market capitalization of assessed companies (in USD billion)	729.2
Number of companies in Yearbook	2
Market capitalization of companies in Yearbook (in USD billion)	82.8



Machinery and Electrical Equipment

Driving forces

The ability of industrial machinery and equipment companies to innovate through product development is an important determinant of their competitiveness, and helps improve their customers' manufacturing productivity through the equipment itself, as well as value-added services. While improved resource efficiency, particularly with respect to energy and water, is already a well-established goal both in their operations and product design, manufacturers are also shifting from being "equipment suppliers" to "solution providers" (e.g., automation and connected solutions). This includes delivering integrated systems and supplementing their hardware offering with software to optimize the use of the asset (e.g., performance monitoring and predictive solutions to mitigate downtime). Increasing customer demand for remote communication and asset management is in line with the blueprint of the industry 4.0 revolution, the importance of which has been further highlighted by the COVID-19 pandemic. This industry shift opens up opportunities for companies to evolve into high-tech players, but also poses new challenges, such as attracting the right talent.

Highlighted criteria & dimension weights

- Environmental Dimension..28%
 - Climate Strategy
 - Operational Eco-Efficiency
 - Product Stewardship
- Social Dimension 28%
 - Human Capital Development
 - Occupational Health and Safety
 - Talent Attraction & Retention
- Governance & Economic Dimension 44%
 - Corporate Governance
 - Innovation Management
 - Supply Chain Management

Sustainability leaders 2021

S&P Global Gold Class	
CNH Industrial N.V.	United Kingdom
S&P Global Silver Class	
Stanley Black & Decker, Inc.	United States
S&P Global Bronze Class	
Valmet Oyj	Finland

Industry statistics

Number of companies assessed	307
Market capitalization of assessed companies (in USD billion)	1937.2
Number of companies in Yearbook	16
Market capitalization of companies in Yearbook (in USD billion)	334.3

Sustainability Yearbook Members

Alstom SA	France
Caterpillar Inc.	United States
Cummins Inc.	United States
Doosan Heavy Industries & Construction Co., Ltd.	Rep. of Korea
Kawasaki Heavy Industries, Ltd.	Japan
Komatsu Ltd.	Japan
Mitsubishi Heavy Industries, Ltd.	Japan
Nabtesco Corporation	Japan
Oshkosh Corporation	United States
Sandvik AB	Sweden
Siemens Gamesa Renewable Energy, S.A*	Spain
Vestas Wind Systems A/S	Finland
Wärtsilä Oyj Abp	Finland

* S&P Global Industry Mover



Media, Movies & Entertainment

Driving forces

The highly-competitive media industry has seen a major shift towards digitalization. Publishing companies that have embraced this trend and have increased their revenue from online market segments are industry leaders. The use of innovative technologies, tailored content, and channel management are important in creating new business opportunities. In order to produce unique, valuable content or services, companies must invest in retaining a talented and digitally-skilled workforce. Digitalization has, however, significantly increased the risk of cyberattacks. The ability of companies to implement a cybersecurity strategy that prevents, detects, and remediates those risks is essential to protecting customer information and company data. Meanwhile, increasing connectivity in developing countries is set to be a growth driver over the coming years. Given media companies power to shape public opinion, it is freedom of expression, accountability, and the adherence to ethical standards in advertising that will be important determinants of long-term success.

Highlighted criteria & dimension weights

- Environmental Dimension..17%
 - Climate Strategy
 - Operational Eco-Efficiency
- Social Dimension 39%
 - Human Capital Development
 - Human Rights
 - Labor Practice Indicators
 - Talent Attraction & Retention
- Governance & Economic Dimension 44%
 - Customer Relationship Management
 - Information Security/ Cybersecurity & System Availability
 - Privacy Protection

Sustainability leaders 2021

S&P Global Gold Class	
Telenet Group Holding NV	Belgium
S&P Global Bronze Class	
Informa plc*	United Kingdom
Sustainability Yearbook Members	
Lagardère SCA	France
Liberty Global plc	United Kingdom
Nordic Entertainment	
Group AB (publ)	Sweden
Pearson plc	United Kingdom
Télévision Française 1	
Société anonyme	France

* S&P Global Industry Mover

Industry statistics

Number of companies assessed	147
Market capitalization of assessed companies (in USD billion)	1605.8
Number of companies in Yearbook	7
Market capitalization of companies in Yearbook (in USD billion)	42.6



Metals & Mining

Driving forces

With increasing regulatory and stakeholder pressure, mining companies have to solve key environmental and social issues inherent to their industry. The mining industry's environmental issues center on land use, mineral waste, and tailing management, as well as water management. All these issues have the potential to expand beyond the confines of the mine, severely impacting natural ecosystems, biodiversity, and relations with local communities, potentially resulting in social conflicts and jeopardizing operating licenses. These are significant risks that can result in high remediation costs and operational stoppages. Mining companies must continuously focus on their environmental risks and impacts, as well as the safety of their workers and communities. Proactive stakeholder engagement through adequate, inclusive consultation processes and grievance mechanisms are prerequisites. Long-term challenges faced by companies are accentuated by an increasing demand for resources set against a backdrop of more complicated resource extraction, declining ore grades, and the growing volume of waste rock and process tailings. Regional water scarcity and higher water use in processing ores are increasing the potential for water conflicts with other users.

Highlighted criteria & dimension weights

Environmental Dimension	32%
– Climate Strategy	
– Mineral Waste Management	
– Operational Eco-Efficiency	
– Water Related Risks	
Social Dimension	35%
– Occupational Health and Safety	
– Social Impacts on Communities	
Governance & Economic Dimension	33%
– Codes of Business Conduct	
– Corporate Governance	
– Risk & Crisis Management	

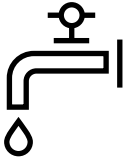
Sustainability leaders 2021

S&P Global Gold Class	
Teck Resources Limited	Canada
S&P Global Bronze Class	
Newmont Corporation	United States
Sustainability Yearbook Members	
Anglo American plc	United Kingdom
Anglo American Platinum Limited	South Africa
AngloGold Ashanti Limited	South Africa
Antofagasta plc	United Kingdom
Barrick Gold Corporation	Canada
Gold Fields Limited	South Africa
Hindustan Zinc Limited	India
IGO Limited	Australia
Kinross Gold Corporation	Canada
Newcrest Mining Limited	Australia
Polymetal International plc	Cyprus
Rio Tinto Group	United Kingdom
Vedanta Limited*	India

* S&P Global Industry Mover

Industry statistics

Number of companies assessed	105
Market capitalization of assessed companies (in USD billion)	1109.2
Number of companies in Yearbook	15
Market capitalization of companies in Yearbook (in USD billion)	343.8



Multi and Water Utilities

Driving forces

The multi and water utilities industry is being transformed on numerous fronts. As the electricity market continues to undergo major transformation caused by the decarbonization and decentralization of power generation, utilities need to develop innovative business models that can adapt to the new political, economic, and technical constraints and demands. Gas markets are being reshaped by the development of unconventional resources and the fact that natural gas is a cleaner and more flexible alternative to coal in power generation. Yet, these markets remain exposed to the risk of the long-term phasing out of all fossil fuels. For water utilities, aging distribution and collection networks, along with the opposition to privatization, are key challenges in developed countries. In emerging markets, increasing water stress and deteriorating water quality represent challenges, while increasing consumption and rapid infrastructure expansion are driving market growth. Well-positioned companies in this industry are active in resource management, foster demand-side efficiency, and proactively engage with stakeholders.

Highlighted criteria & dimension weights

- Environmental Dimension..42%
 - Climate Strategy
 - Electricity Generation
 - Operational Eco-Efficiency
 - Water Related Risks
- Social Dimension 26%
 - Occupational Health and Safety
 - Stakeholder Engagement
- Governance & Economic Dimension 32%
 - Codes of Business Conduct
 - Corporate Governance
 - Market Opportunities

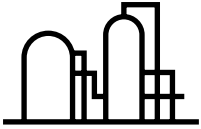
Sustainability leaders 2021

S&P Global Gold Class	
Hera S.p.A.*	Italy
S&P Global Bronze Class	
ENGIE SA	France
Sempra Energy	United States
United Utilities Group PLC	United Kingdom
Veolia Environnement S.A.	France
Sustainability Yearbook Members	
Aguas Andinas S.A.	Chile
Inversiones Aguas Metropolitanas S.A.	Chile
Public Service Enterprise Group Incorporated	United States
Suez SA	France

* S&P Global Industry Mover

Industry statistics

Number of companies assessed	62
Market capitalization of assessed companies (in USD billion)	607.6
Number of companies in Yearbook	9
Market capitalization of companies in Yearbook (in USD billion)	142.8



Oil & Gas Refining & Marketing

Driving forces

Refiners have experienced an inordinate number of permanent closures and record downtime this year. Such portfolio restructuring aims to generate cash flows to cover existing operations and future capital expenditure, and weather significant near-term demand fluctuations as consumer behavior adjusts to COVID-19. Good environmental management of operations includes a reduction of emissions and accidents, which are closely linked to cost competitiveness. This includes maximizing operating availability of refineries and checking compliance with operating permits. Vigilant management of environmental and social issues in the supply chain, as well as contractor health and safety, will help reduce reputational risks. Increasingly, refiners are facing the need for a sustainable climate strategy due to the required long-term phase out of fossil fuels. Companies need to increase their exposure to sustainable mobility trends, such as electric and hybrid vehicles or advanced biofuels, and strengthen their refinery portfolios through acquisitions and diversification of feedstocks.

Highlighted criteria & dimension weights

- Environmental Dimension..31%
 - Climate Strategy
 - Environmental Policy & Management Systems
 - Operational Eco-Efficiency
 - Water Related Risks
- Social Dimension 35%
 - Human Capital Development
 - Occupational Health and Safety
- Governance & Economic Dimension 34%
 - Codes of Business Conduct
 - Risk & Crisis Management
 - Supply Chain Management

Sustainability leaders 2021

S&P Global Gold Class	
IRPC Public Company Limited	Thailand
Thai Oil Public Company Limited	Thailand
S&P Global Silver Class	
Neste Oyj	Finland
S&P Global Bronze Class	
Bangchak Corporation Public Company Limited	Thailand
SK Innovation Co., Ltd.	Rep. of Korea
S-Oil Corporation	Rep. of Korea

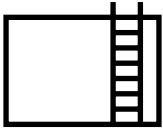
Industry statistics

Number of companies assessed	49
Market capitalization of assessed companies (in USD billion)	469.5
Number of companies in Yearbook	7
Market capitalization of companies in Yearbook (in USD billion)	88

Sustainability Yearbook Members

Empresas Copec S.A.*	Chile
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* S&P Global Industry Mover



Oil & Gas Storage & Transportation

Driving forces

For the oil and gas storage and transportation industry, the ability to meet the growing demand for the transportation of crude oil and natural gas to demand-intensive urbanized centers is a key value driver. At the same time, lengthening supply chains increase the industry's challenges, adding upward pressure on costs. Maintaining the integrity of pipeline and storage systems is vital to minimize environmental impacts, meet compliance with industry and environmental regulations, and support community relations. The cost of failure can be significant for operating permits and for obtaining licenses to operate new infrastructure projects. Another significant factor in planning and developing new infrastructure is adequate stakeholder engagement during land acquisition and any physical or economic resettlement. Companies leading in this industry are able to manage the twin demands of maximizing capacity utilization in their networks and minimizing impacts through effective environmental management systems, supported by modern risk and crisis management frameworks.

Highlighted criteria & dimension weights

- Environmental Dimension..25%
 - Climate Strategy
 - Operational Eco-Efficiency
- Social Dimension 43%
 - Human Capital Development
 - Human Rights
 - Occupational Health and Safety
 - Social Impacts on Communities
- Governance & Economic Dimension 32%
 - Codes of Business Conduct
 - Corporate Governance
 - Risk & Crisis Management

Sustainability leaders 2021

Sustainability Yearbook Members	
Enbridge Inc.	Canada
ONEOK, Inc.*	United States
TC Energy Corporation	Canada
The Williams Companies, Inc.	United States

* S&P Global Industry Mover

Industry statistics

Number of companies assessed	27
Market capitalization of assessed companies (in USD billion)	275.3
Number of companies in Yearbook	4
Market capitalization of companies in Yearbook (in USD billion)	146



Oil & Gas Upstream & Integrated

Driving forces

Among upstream and integrated oil and gas companies, there is a need to develop corporate strategies that consider the transition to low-carbon economies. Climate strategy and its link to corporate governance is, thus, increasing in importance for investors in this sector. At the same time, companies need to make sure that their current businesses can generate cash flows to cover investment and dividend requirements, and weather significant near-term demand fluctuations as consumer behavior adjusts to COVID-19. In the upstream segment, this requires diversifying to new growth opportunities in natural gas and renewable energies, such as wind and solar. In downstream operations, cost competitiveness is closely linked to environmental and health and safety excellence. In this context, the industry's top performers are those able to manage a broad set of environmental, health and safety, ethical conduct, and stakeholder risks. Taking these risks into account also goes hand-in-hand with diversifying the fuel mix and discerning the pathway to a low-carbon future.

Highlighted criteria & dimension weights

Environmental Dimension..26%
– Climate Strategy
– Operational Eco-Efficiency
– Water Related Risks
Social Dimension 32%
– Human Rights
– Occupational Health and Safety
– Social Impacts on Communities
Governance & Economic Dimension 42%
– Corporate Governance
– Energy Mix
– Risk & Crisis Management

Sustainability leaders 2021

S&P Global Gold Class	
PTT Exploration and Production Public Company Limited	Thailand
PTT Public Company Limited	Thailand
S&P Global Bronze Class	
Galp Energia, SGPS, S.A.	Portugal

Industry statistics

Number of companies assessed	114
Market capitalization of assessed companies (in USD billion)	3681.6
Number of companies in Yearbook	17
Market capitalization of companies in Yearbook (in USD billion)	516.3

Sustainability Yearbook Members

ConocoPhillips	United States
Ecopetrol S.A.	Colombia
Hess Corporation	United States
Inpex Corporation*	Japan
MOL Magyar Olaj- és Gázipari Nyilvánosan	
Muködo Részvénytársaság	Hungary
Oil Search Limited	Papua New Guinea
OMV Aktiengesellschaft	Austria
Petróleo Brasileiro S.A. - Petrobras	Brazil
Royal Dutch Shell plc	Netherlands
Suncor Energy Inc.	Canada
TOTAL SE	France
Vermilion Energy Inc.	Canada
Woodside Petroleum Ltd	Australia
YPF Sociedad Anónima	Argentina

* S&P Global Industry Mover



Paper & Forest Products

Driving forces

Companies in the paper and forest products industry offer timber, wood products, and paper. Responsible management of plantations and sourcing of wood fibers is demonstrated through certification of forest management and chains of custody schemes. These certifications provide assurance and traceability of the preservation of biodiversity and land rights. Engaging with local stakeholders remains essential in maintaining access to land and a social license to operate. Effective management of water-related risks is still crucial to having productive plantations and reliable production, as droughts have impacted the supply of timber. The priorities for paper production include: operational eco-efficiency, climate strategy, and occupational health and safety. Innovations, such as biomass to bioplastics or enzyme-based processes, continue to present new market opportunities and new sources of revenue. As the result of COVID-19, some regions have seen timber prices collapse due to closures of sawmills, plus lumber demand drop due to economic uncertainty. At the same time, demand for pulp wood has spiked.

Highlighted criteria & dimension weights

- Environmental Dimension..33%
 - Biodiversity
 - Operational Eco-Efficiency
 - Product Stewardship
 - Sustainable Forestry Practices
 - Water Related Risks
- Social Dimension 33%
 - Occupational Health and Safety
 - Social Impacts on Communities
- Governance & Economic Dimension 34%
 - Customer Relationship Management
 - Supply Chain Management

Sustainability leaders 2021

S&P Global Gold Class	
UPM-Kymmene Oyj	Finland
Sustainability Yearbook Members	
Empresas CMPC S.A	Chile
Mondi plc	United Kingdom
Suzano S.A.	Brazil

Industry statistics

Number of companies assessed	27
Market capitalization of assessed companies (in USD billion)	111.3
Number of companies in Yearbook	4
Market capitalization of companies in Yearbook (in USD billion)	47.9



Personal Products

Driving forces

Personal product companies operate in a highly-competitive, multi-brand environment. Brand management and product quality are driven by the need to continuously innovate, retain market positioning, or gain market share. Rigorous product stewardship addresses recurring concerns over product safety and a growing demand for advanced products, while pushing companies to develop improved and reformulated versions of traditional products. In combination with a changing regulatory environment governing the use of ingredients and chemicals, these pressures drive innovation, which ultimately results in higher quality and safety standards. Using natural and sustainably-sourced ingredients and reducing/avoiding plastic packaging are of increasing importance. These factors, as well as restrictions on emissions, energy consumption, and water use have a strong impact on production and operating costs. The industry may also face novel challenges caused by widespread store closures, changing customers' needs, and value chain disruptions as a result of the COVID-19 pandemic.

Highlighted criteria & dimension weights

- Environmental Dimension..21%
 - Operational Eco-Efficiency
 - Packaging
 - Product Stewardship
- Social Dimension 26%
 - Human Capital Development
 - Occupational Health and Safety
- Governance & Economic Dimension 53%
 - Customer Relationship Management
 - Innovation Management
 - Product Quality and Recall Management
 - Supply Chain Management

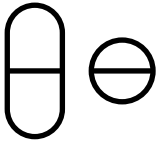
Sustainability leaders 2021

S&P Global Gold Class	
The Unilever Group	Netherlands
Sustainability Yearbook Members	
Amorepacific Corporation*	Rep. of Korea
Godrej Consumer Products Limited	India
Kao Corporation	Japan
LG Household & Health Care Ltd.	Rep. of Korea
Natura &Co Holding S.A.	Brazil
Shiseido Company, Limited	Japan

* S&P Global Industry Mover

Industry statistics

Number of companies assessed	56
Market capitalization of assessed companies (in USD billion)	715.6
Number of companies in Yearbook	7
Market capitalization of companies in Yearbook (in USD billion)	279.4



Pharmaceuticals

Driving forces

The COVID – 19 pandemic has placed pharmaceutical companies in the limelight, as companies focus their efforts on researching vaccine candidates and developing products that can treat and prevent infections from the virus. The pharmaceutical industry has also been facing increasing scrutiny related to pricing and reimbursement of their products, however, as governments seek to slow the rise of health care costs, while the incremental value of innovation within traditional pharmaceuticals has declined. Companies depend heavily on human capital for innovation, continuous development of novel medicines, and the quality of marketing strategies. The industry is characterized by extensive capital invested in sales and marketing and R&D, and a high risk of failure in product development. This makes process optimization and human capital management critical. Finally, controversies related to business ethics, competitive practices, and product quality and safety have the potential to cause significant reputational and financial damage.

Highlighted criteria & dimension weights

Environmental Dimension ...9%
– Climate Strategy
– Operational Eco-Efficiency
Social Dimension41%
– Addressing Cost Burden
– Health Outcome Contribution
– Strategy to Improve Access to Drugs or Products
– Talent Attraction & Retention
Governance & Economic Dimension 50%
– Codes of Business Conduct
– Innovation Management
– Product Quality and Recall Management

Sustainability leaders 2021

S&P Global Gold Class	
Roche Holding AG	Switzerland
S&P Global Silver Class	
GlaxoSmithKline plc	United Kingdom
S&P Global Bronze Class	
AstraZeneca PLC	United Kingdom
Chugai Pharmaceutical Co., Ltd.	Japan
Sanofi	France

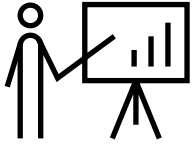
Industry statistics

Number of companies assessed	156
Market capitalization of assessed companies (in USD billion)	3283.5
Number of companies in Yearbook	13
Market capitalization of companies in Yearbook (in USD billion)	1098.1

Sustainability Yearbook Members

Daiichi Sankyo Company, Limited	Japan
Dr. Reddy's Laboratories Limited	India
Eisai Co., Ltd.	Japan
Glenmark Pharmaceuticals Limited	India
Mitsubishi Tanabe Pharma Corporation	Japan
Novartis AG	Switzerland
Ono Pharmaceutical Co., Ltd.*	Japan
Takeda Pharmaceutical Company Limited	Japan

* S&P Global Industry Mover



Professional Services

Driving forces

Professional services companies provide a range of business support services in the areas of staffing, consumer credit ratings, research, and analytics, plus the testing, inspection, and certification of manufacturing and other business processes. As providers of specialized services, these are knowledge-intensive companies, and their success depends on the quality of their workforce, making human capital development and talent attraction and retention particularly important. A reputation for integrity is critical in retaining customers and winning new business. Consequently, companies must make sure that employees comply with their codes of conduct and that services are delivered according to high ethical standards. Professional services companies are entrusted with customer data, making data security and cybersecurity top priorities if they wish to avoid negative reputational impacts.

Highlighted criteria & dimension weights

- Environmental Dimension..17%
 - Climate Strategy
 - Operational Eco-Efficiency
- Social Dimension41%
 - Human Capital Development
 - Human Rights
 - Labor Practice Indicators
 - Occupational Health and Safety
 - Talent Attraction & Retention
- Governance & Economic Dimension 42%
 - Codes of Business Conduct
 - Corporate Governance
 - Privacy

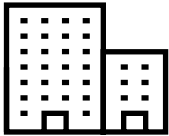
Sustainability leaders 2021

S&P Global Gold Class	
Bureau Veritas SA*	France
SGS SA	Switzerland
S&P Global Bronze Class	
RELX PLC	United Kingdom
Sustainability Yearbook Members	
Experian plc	Ireland
ManpowerGroup Inc.	United States
Nielsen Holdings plc	United States
Randstad N.V.	Netherlands

* S&P Global Industry Mover

Industry statistics

Number of companies assessed	65
Market capitalization of assessed companies (in USD billion)	562.6
Number of companies in Yearbook	7
Market capitalization of companies in Yearbook (in USD billion)	132.5



Real Estate

Driving forces

Real estate is a varied industry consisting of developers and maintenance professionals, as well as property managers and investors. Building and managing real estate provides social benefits, but also depletes natural resources and releases pollutants into the environment, bringing regulatory pressure from local governments. It is estimated that the construction and operation of buildings contributes to approximately 40% of global greenhouse gas emissions. Sustainable real estate companies use recyclable building materials, improve structural efficiency, and consider site aspects during the development stage. Refurbishing existing buildings with energy and water efficient appliances, improving energy management by using smart meters, and engaging with tenants on their impact is important for sustainable real estate managers. Leading companies can validate their sustainability efforts through credible green building certification schemes. Finally, since real estate assets are highly leveraged, corporate governance plays a key role in efficient and prudent capital management..

Sustainability leaders 2021

●	S&P Global Gold Class		Host Hotels & Resorts, Inc.	United States
	Dexus	Australia	Jones Lang LaSalle Incorporated	United States
●	S&P Global Silver Class		Kilroy Realty Corporation	United States
	GPT Group	Australia	Kimco Realty Corporation	United States
	Land Securities Group plc	United Kingdom	Mitsubishi Estate Co., Ltd.	Japan
	Stockland	Australia	New World Development	
●	S&P Global Bronze Class		Company Limited	Hong Kong
	Castellum AB (publ)	Sweden	Nippon Prologis REIT, Inc.	Japan
Sustainability Yearbook Members				
	alstria office REIT-AG	Germany	Parque Arauco S.A.	Chile
	Ayala Land, Inc.	Philippines	Plaza S.A.	Chile
	CapitalLand Limited	Singapore	Prologis, Inc.	United States
	CBRE Group, Inc.	United States	Swire Properties Limited	Hong Kong
	Central Pattana Public		Ventas, Inc.	United States
	Company Limited	Thailand	Vicinity Centres	Australia
	Charter Hall Group	Australia	Welltower Inc.	United States
	Charter Hall Long WALE REIT	Australia	Weyerhaeuser Company	United States
	City Developments Limited	Singapore		
	Covivio	France		
	Daiwa House Industry Co.,Ltd.	Japan		
	DLF Limited*	India		
	FIBRA Prologis	Mexico		
	Fibra UNO	Mexico		
	Hammerson plc	United Kingdom		
	Healthpeak Properties, Inc.	United States		

* S&P Global Industry Mover

Highlighted criteria & dimension weights

Environmental Dimension..38%

- Biodiversity
- Climate Strategy
- Operational Eco-Efficiency
- Resource Conservation and Resource Efficiency

Social Dimension 34%

- Social Integration & Regeneration
- Stakeholder Engagement

Governance & Economic Dimension 28%

- Corporate Governance
- Risk & Crisis Management
- Supply Chain Management

Industry statistics

Number of companies assessed	520
Market capitalization of assessed companies (in USD billion)	2803.4
Number of companies in Yearbook	35
Market capitalization of companies in Yearbook (in USD billion)	399.8



Restaurants & Leisure Facilities

Driving forces

The restaurant and leisure sector continues to be scrutinized over accountability and transparency in its supply chain, including issues of food safety, raw material sourcing, and accurate labeling. Fair wages and working conditions are attracting more attention from regulators and other stakeholders, putting pressure on franchising, licensing, and accountability systems. Furthermore, health-conscious consumers are pushing for greater innovation in products, and environmental concerns result in demand for increased transparency on the use of genetically-modified organisms and integration of more sustainable packaging solutions. The elimination of single-use plastics and the integration of reusable systems is a particular focus. Long-term disruptions caused by the COVID-19 pandemic will make it ever more important for companies to better understand their customers and adapt their product offerings accordingly. Other environmental challenges, such as energy and water consumption, will require companies and their franchisees to consolidate their data to effectively implement global sustainability programs.

Highlighted criteria & dimension weights

- Environmental Dimension..19%
 - Climate Strategy
 - Operational Eco-Efficiency
 - Raw Material Sourcing
- Social Dimension 39%
 - Human Rights
 - Labor Practice Indicators
 - Occupational Health and Safety
- Governance & Economic Dimension 42%
 - Codes of Business Conduct
 - Customer Relationship Management
 - Supply Chain Management

Sustainability leaders 2021

S&P Global Gold Class	
Yum China Holdings, Inc.*	China
S&P Global Silver Class	
Sodexo S.A.	France
Sustainability Yearbook Members	
Oriental Land Co., Ltd.	Japan
Yum! Brands, Inc.	United States

* S&P Global Industry Mover

Industry statistics

Number of companies assessed	88
Market capitalization of assessed companies (in USD billion)	699.5
Number of companies in Yearbook	4
Market capitalization of companies in Yearbook (in USD billion)	123.4



Retailing

Driving forces

The retailing industry is dominated by multinational companies with global supply and distribution networks focused on sophisticated inventory management, marketing strategies, and technological development. Brand management is a determining factor of success, and successful retailers develop strategies and technologies to analyze their customers' buying habits, enabling the implementation of more tailored customer relationship management systems. Distribution channels, such as e-commerce platforms, home delivery services, and pick-up systems are key value drivers, especially in the face of the COVID-19 crisis. Faced with continuous scrutiny, companies need to address the safety and sustainability of their supply chain management and distribution systems. Labor and human rights issues, such as living wages and the use and disposal of packaging, are of notable concern. Hence, retailers must establish long-term relationships with suppliers, integrate new technologies, and provide enhanced transparency and environmental awareness to minimize reputational risks and increase operational efficiency.

Highlighted criteria & dimension weights

Environmental Dimension..	22%
– Climate Strategy	
– Operational Eco-Efficiency	
– Packaging	
Social Dimension	28%
– Human Rights	
– Labor Practice Indicators	
Governance & Economic Dimension	50%
– Brand Management	
– Customer Relationship Management	
– Risk & Crisis Management	
– Supply Chain Management	

Sustainability leaders 2021

S&P Global Gold Class	
Marui Group Co., Ltd.	Japan
S&P Global Silver Class	
Industria de Diseño Textil, S.A.	Spain
S&P Global Bronze Class	
H & M Hennes & Mauritz AB (publ)	Sweden
Home Product Center	
Public Company Limited	Thailand

Industry statistics

Number of companies assessed	283
Market capitalization of assessed companies (in USD billion)	5317.4
Number of companies in Yearbook	17
Market capitalization of companies in Yearbook (in USD billion)	378.7

Sustainability Yearbook Members

eBay Inc.	United States
Falabella S.A.	Chile
Fast Retailing Co., Ltd.	Japan
Kohl's Corporation	United States
Lojas Renner S.A.	Brazil
Organización Terpel S.A.	Colombia
Petrobras Distribuidora S.A.	Brazil
Rakuten, Inc.*	Japan
Super Retail Group Limited	Australia
The Gap, Inc.	United States
Vipshop Holdings Limited	China
Wesfarmers Limited	Australia
WH Smith PLC	United Kingdom

* S&P Global Industry Mover



Semiconductors & Semiconductor Equipment

Driving forces

The application of advanced semiconductors has progressed beyond traditional computing products to include the Internet of Things, Artificial Intelligence, automotive applications, 5G, and high-performance computing. Cybersecurity is a strategic priority that is increasing in importance, since security should be included by design during chip R&D. The rate at which the number of transistors on a chip doubles (i.e., Moore's Law) is slowing as integrated circuits become smaller. The semiconductor industry must, therefore, investigate new architectures, materials, and packaging to go beyond current scaling and performance constraints, while also addressing the demand for low energy-consumption products. To sustain a rapid pace of innovation, the industry will need to increase R&D investment that, in turn, will necessitate attracting and retaining a skilled workforce and developing talent. The industry must continue to improve its ultra-pure water usage, energy and waste management, and pollution prevention. It must also increase promotion of projects to substitute hazardous materials and reduce the sourcing of conflict minerals.

Highlighted criteria & dimension weights

- Environmental Dimension..34%
 - Climate Strategy
 - Environmental Policy & Management Systems
 - Operational Eco-Efficiency
 - Product Stewardship
- Social Dimension 23%
 - Human Capital Development
 - Talent Attraction & Retention
- Governance & Economic Dimension 43%
 - Innovation Management
 - Product Quality and Recall Management
 - Supply Chain Management

Sustainability leaders 2021

S&P Global Gold Class	
ASE Technology Holding Co., Ltd.	Taiwan
S&P Global Silver Class	
Taiwan Semiconductor Manufacturing Company Limited	Taiwan
United Microelectronics Corporation	Taiwan
S&P Global Bronze Class	
ASML Holding N.V.	Germany
Infineon Technologies AG	Germany
Nanya Technology Corporation	Germany

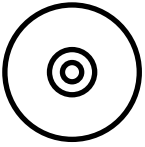
Industry statistics

Number of companies assessed	183
Market capitalization of assessed companies (in USD billion)	3077.3
Number of companies in Yearbook	14
Market capitalization of companies in Yearbook (in USD billion)	1408.3

Sustainability Yearbook Members

Advantest Corporation*	Japan
Intel Corporation	United States
NVIDIA Corporation	United States
ON Semiconductor Corporation	United States
SK hynix, Inc.	Rep. of Korea
STMicroelectronics N.V.	Switzerland
Tokyo Electron Limited	Japan
WIN Semiconductors Corp.	Taiwan

* S&P Global Industry Mover



Software

Driving forces

Innovation and human capital are important sustainability aspects for the software industry. Rapid technological innovation, which demands a highly-qualified workforce to identify disruptive trends and develop new products, is characteristic of this industry. Managing, training, and developing employees is, therefore, crucial to help with profitability and growth. Customer loyalty and retention are also key drivers of long-term profitability. Furthermore, companies must comply with increased regulation concerning the privacy and security of a growing amount of stored and processed confidential data. Environmental footprints are becoming critical issues, as data centers require a constant supply of energy to avoid disruption. The industry is competitive, with dominant players in each segment. Scale is no longer the barrier that it used to be. Software can be easily procured and integrated from lower-cost locations, leading to challengers being launched at unprecedented speed with a low-cost base and ability to compete directly with established players.

Highlighted criteria & dimension weights

- Environmental Dimension..21%
 - Climate Strategy
 - Environmental Policy & Management Systems
 - Operational Eco-Efficiency
- Social Dimension 27%
 - Human Capital Development
 - Talent Attraction & Retention
- Governance & Economic Dimension 52%
 - Customer Relationship Management
 - Information Security/ Cybersecurity & System Availability
 - Innovation Management
 - Privacy Protection

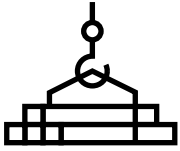
Sustainability leaders 2021

S&P Global Gold Class	
SAP SE	Germany
S&P Global Bronze Class	
Adobe Inc.	United States
Temenos AG*	Switzerland
Sustainability Yearbook Members	
Microsoft Corporation	United States
NortonLifeLock Inc.	United States

* S&P Global Industry Mover

Industry statistics

Number of companies assessed	190
Market capitalization of assessed companies (in USD billion)	4187.3
Number of companies in Yearbook	5
Market capitalization of companies in Yearbook (in USD billion)	2013.1



Steel

Driving forces

The recyclable properties of steel provide opportunities for lowering production costs by reducing raw material inputs, energy use, and greenhouse gas emissions. Some grades of high-strength steel, such as lightweight steel, also offer opportunities for reducing energy consumption in the use phase. Primary steel production, however, continues to have significant environmental effects, since steel production is energy intensive and often relies on fossil fuel-based fuel sources. Blast furnace production of steel leads to significant greenhouse gas emissions and other pollutants. In some regions, community concerns may also arise due to the presence of large production facilities that create excessive noise and air pollution, as well as potential negative impacts on land and property rights. For this industry, employee and contractor health and safety is also a critical indicator of operational excellence.

Highlighted criteria & dimension weights

- Environmental Dimension...33%
 - Climate Strategy
 - Operational Eco-Efficiency
 - Water Related Risks
- Social Dimension 33%
 - Human Rights
 - Occupational Health and Safety
 - Social Impacts on Communities
- Governance & Economic Dimension 34%
 - Codes of Business Conduct
 - Corporate Governance
 - Supply Chain Management

Sustainability leaders 2021

S&P Global Gold Class	
Fortescue Metals Group Limited	Australia
Hyundai Steel Company	Rep. of Korea
S&P Global Silver Class	
POSCO	Rep. of Korea
Sustainability Yearbook Members	
China Steel Corporation	Taiwan
Corporacion Aceros Arequipa S.A.	Peru
JSW Steel Limited	India
Outokumpu Oyj	Finland
Schnitzer Steel Industries, Inc.*	United States
Tata Steel Limited	India

Industry statistics

Number of companies assessed	67
Market capitalization of assessed companies (in USD billion)	408
Number of companies in Yearbook	9
Market capitalization of companies in Yearbook (in USD billion)	96.5

* S&P Global Industry Mover



Telecommunication Services

Driving forces

The telecommunications industry operates in a highly-competitive, albeit heavily-regulated, environment, where exposure to antitrust action is pronounced. In order to remain competitive in a market consistently subject to rapid technological change, companies need to adopt efficient and flexible business models. This will help enable them to integrate next-generation technologies, such as 5G, and produce innovative solutions that address social and environmental issues. Implementation of resilient systems to assure customers' data privacy is important in retaining customers and avoiding regulatory issues. The increased use of smart devices has also increased the attention that consumers pay to data privacy. Insufficient database and network protection could further expose companies to reputational and legal risks. Cybersecurity and physical threats to network infrastructure (e.g., extreme weather events) can have significant economic impacts. Investing in data security and upgrading network infrastructure are, therefore, crucial.

Highlighted criteria & dimension weights

- Environmental Dimension..20%
 - Climate Strategy
 - Operational Eco-Efficiency
- Social Dimension 33%
 - Human Capital Development
 - Talent Attraction & Retention
- Governance & Economic Dimension 47%
 - Customer Relationship Management
 - Information Security/ Cybersecurity & System Availability
 - Network Reliability
 - Privacy Protection
 - Risk & Crisis Management

Sustainability leaders 2021

S&P Global Gold Class	
Taiwan Mobile Co., Ltd.	Taiwan
True Corporation Public Company Limited	Thailand
S&P Global Silver Class	
Advanced Info Service Public Company Limited	Thailand
Deutsche Telekom AG	Germany
Far EasTone Telecommunications Co., Ltd.	Taiwan
Koninklijke KPN N.V.	Netherlands
Telecom Italia S.p.A.	Italy
S&P Global Bronze Class	
Chunghwa Telecom Co., Ltd.	Taiwan
Nippon Telegraph and Telephone Corporation	Japan
NTT DOCOMO, INC.	Japan
SK Telecom Co.,Ltd	Rep. of Korea
TELUS Corporation	Canada

Industry statistics

Number of companies assessed	110
Market capitalization of assessed companies (in USD billion)	2356.8
Number of companies in Yearbook	61
Market capitalization of companies in Yearbook (in USD billion)	696.1

Sustainability Yearbook Members

AT&T Inc.	United States
Cellnex Telecom, S.A.	Spain
Telefónica Brasil S.A*	Brazil
Telefónica, S.A.	Spain

* S&P Global Industry Mover



Textiles, Apparel & Luxury Goods

Driving forces

Textile, apparel, and luxury goods companies leverage strong recognition of their brands, effective supply chain management, and marketing and sales strategies to expand into new markets, product categories, and consumer segments. Fast fashion and the expansion of online shopping has resulted in continuous customer engagement. Faced with the scrutiny of labor and human rights practices in the supply chain, companies are under pressure to boost transparency throughout all tiers of their operations. Living wage issues have attracted particular attention in the face of the COVID-19 crisis. Sustainability leaders integrate environmental considerations into the entire lifecycle process, from product design and raw material sourcing to recycling of used products. Finding alternatives to plastic packaging will also create opportunities for brands to differentiate themselves. Overall, engagement with suppliers and subcontractors on sustainability issues, as well as active monitoring and disclosure of their practices, will help support the protection of a company's reputation, brand, and long-term value.

Highlighted criteria & dimension weights

- Environmental Dimension..22%
 - Climate Strategy
 - Operational Eco-Efficiency
 - Product Stewardship
- Social Dimension 37%
 - Human Rights
 - Labor Practice Indicators
 - Occupational Health and Safety
- Governance & Economic Dimension41%
 - Customer Relationship Management
 - Risk & Crisis Management
 - Supply Chain Management

Sustainability leaders 2021

S&P Global Gold Class	
Burberry Group plc	United Kingdom
Moncler S.p.A.	Italy
S&P Global Silver Class	
Gildan Activewear Inc.	Canada
Hugo Boss AG	Germany
Kering SA	France
S&P Global Bronze Class	
adidas AG	Germany

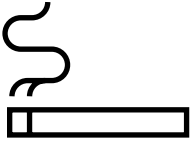
Industry statistics

Number of companies assessed	106
Market capitalization of assessed companies (in USD billion)	1379.2
Number of companies in Yearbook	10
Market capitalization of companies in Yearbook (in USD billion)	492.4

Sustainability Yearbook Members

Aditya Birla Fashion and Retail Limited	India
ASICS Corporation	Japan
LVMH Moët Hennessy - Louis Vuitton, Société Européenne	France
PUMA SE*	Germany

* S&P Global Industry Mover



Tobacco

Driving forces

According to the World Health Organization, global smoking rates and sales are decreasing, but not uniformly across populations. COVID-19 has highlighted the possible risk of increased mortality rates among tobacco users with pre-existing conditions, including non-communicable diseases, such as chronic respiratory conditions. The tobacco industry's relationship with the public sector is critically important with regards to tax policies, regulations, and efforts aimed at reducing cigarette smoking, especially among vulnerable groups, such as the young and the poor. The industry is under constant scrutiny by policymakers, the media, and NGOs, which demand well-managed supply and distribution chains and a high degree of transparency. Following new tobacco control measures, it is becoming increasingly important for tobacco companies to diversify their product mix. This means moving away from traditional tobacco products and exploring innovative alternatives, such as non-combustible (smokeless) tobacco and reduced-harm nicotine products (with low to zero tobacco), which claim to have lower health risks.

Highlighted criteria & dimension weights

- Environmental Dimension...24%
 - Climate Strategy
 - Operational Eco-Efficiency
 - Raw Material Sourcing
- Social Dimension 34%
 - Human Capital Development
 - Human Rights
 - Occupational Health and Safety
- Governance & Economic Dimension 42%
 - Codes of Business Conduct
 - Risk & Crisis Management
 - Supply Chain Management

Sustainability leaders 2021

● S&P Global Gold Class	
British American Tobacco p.l.c.	United Kingdom
● S&P Global Bronze Class	
Japan Tobacco Inc.*	Japan

* S&P Global Industry Mover

Industry statistics

Number of companies assessed	14
Market capitalization of assessed companies (in USD billion)	402.8
Number of companies in Yearbook	2
Market capitalization of companies in Yearbook (in USD billion)	116.5



Trading Companies & Distributors

Driving forces

Trading companies and distributors represent companies operate in the wholesale and distribution of a wide range of goods and services. Due to their diverse and complex business lines, these companies rely heavily on strong corporate governance and management structures to operate successfully. It is a knowledge-intensive industry, so fair labor practices, talent attraction and retention, and human capital development are key to productivity and business success. Operating across a diverse range of business areas and geographies, companies in this industry can face considerable environmental and social risks, either directly through their own operations, through the products they sell, or in their supply chains. As a result, defining clear policies and risk management processes remains important for long-term value creation, and is essential in tackling systemic shocks to supply chains, such as the one experienced due to COVID-19. Environmental and social impact assessments and transparency with stakeholders are key to mitigate future operational and reputational risks.

Highlighted criteria & dimension weights

- Environmental Dimension..19%
 - Climate Strategy
 - Environmental Policy & Management Systems
 - Operational Eco-Efficiency
- Social Dimension 38%
 - Labor Practice Indicators
 - Occupational Health and Safety
- Governance & Economic Dimension 43%
 - Codes of Business Conduct
 - Corporate Governance
 - Customer Relationship Management
 - Supply Chain Management

Sustainability leaders 2021

S&P Global Gold Class	
ITOCHU Corporation	Japan
S&P Global Silver Class	
Sojitz Corporation	Japan
Sustainability Yearbook Members	
Marubeni Corporation	Japan
Mitsui & Co., Ltd.	Japan
Rexel S.A.	France

Industry statistics

Number of companies assessed	101
Market capitalization of assessed companies (in USD billion)	442.9
Number of companies in Yearbook	5
Market capitalization of companies in Yearbook (in USD billion)	84.8



Transportation and Transportation Infrastructure

Driving forces

The transportation industry consists of a number of sub-industries, each with distinctive dynamics, competitive landscapes, and sustainability issues. The sudden decline of global travel and trade due to the Covid-19 pandemic will have long-lasting impacts on the industry. A key challenge is to make sure that the core transportation and logistics systems that are driving global supply chains can continue to operate through restrictions and lockdown measures. Here, personnel and passenger safety remains the top priority, despite growing financial pressure on these companies and their fleets. Factors, such as fuel efficiency and operational eco-efficiency, will continue to remain key focus areas. Lower-carbon transportation options provide an opportunity to acquire new customers and retain existing ones, as more companies commit to reducing their carbon footprint. Meanwhile, offering a high-quality, reliable service requires companies to develop an engaged workforce through effective human capital development programs. Finally, corruption and bribery remain an inherent issue when dealing with governmental organizations that could result in material impacts in terms of monetary penalties or blacklisting.

Highlighted criteria & dimension weights

Environmental Dimension..	27%
– Climate Strategy	
– Fuel Efficiency	
– Operational Eco-Efficiency	
Social Dimension	39%
– Occupational Health and Safety	
– Stakeholder Engagement	
– Talent Attraction & Retention	
Governance & Economic Dimension	34%
– Codes of Business Conduct	
– Customer Relationship Management	
– Risk & Crisis Management	

Sustainability leaders 2021

S&P Global Gold Class	
BTS Group Holdings Public Company Limited	Thailand
S&P Global Silver Class	
Royal Mail plc	United Kingdom
S&P Global Bronze Class	
PostNL N.V.	Netherlands
Transurban Group	Australia

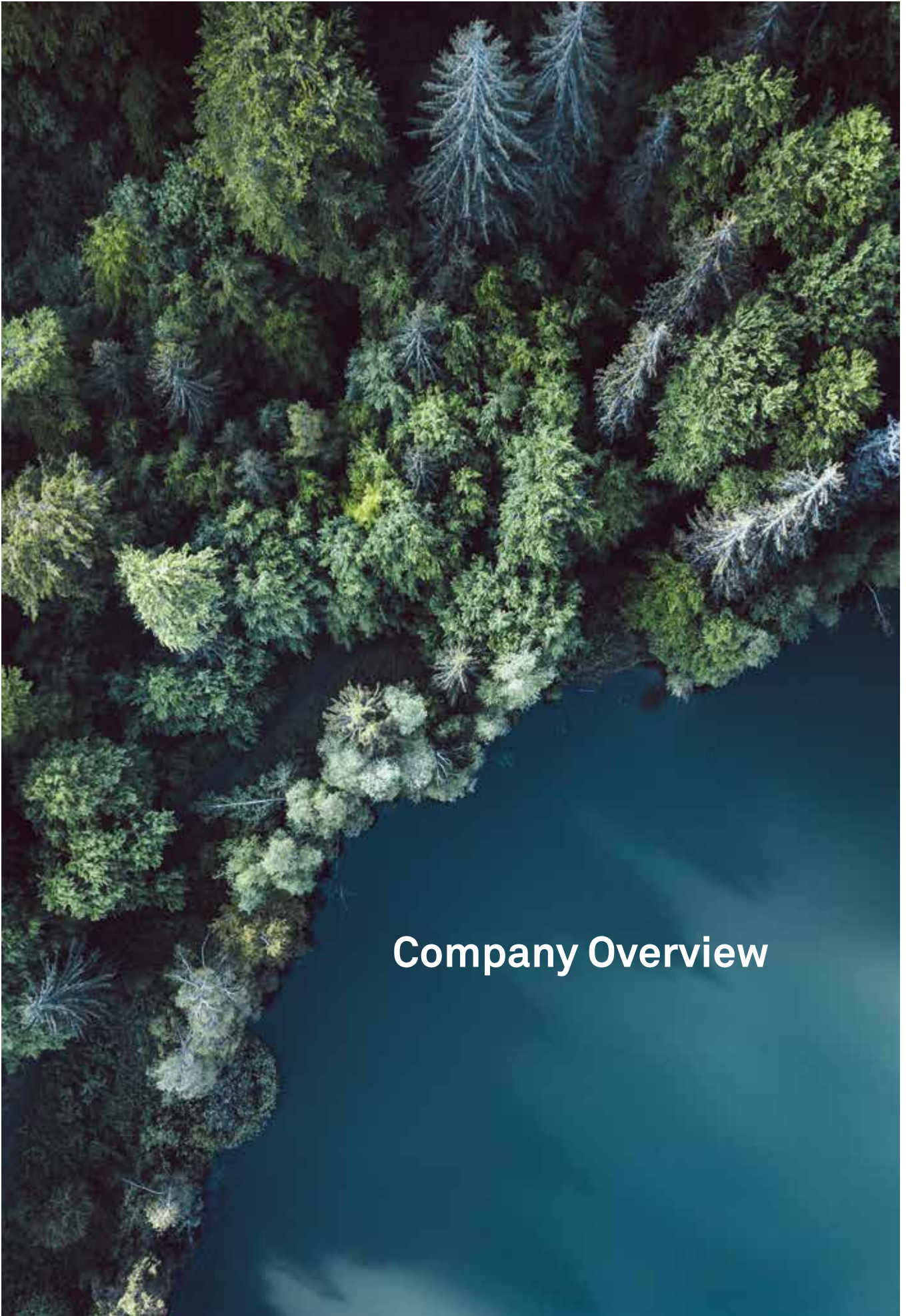
Industry statistics

Number of companies assessed	171
Market capitalization of assessed companies (in USD billion)	1799.2
Number of companies in Yearbook	16
Market capitalization of companies in Yearbook (in USD billion)	396.6

Sustainability Yearbook Members

Adani Ports and Special Economic Zone Limited	India
Aéroports de Paris SA	France
Airports of Thailand Public Company Limited	Thailand
Canadian National Railway Company	Canada
Canadian Pacific Railway Limited*	Canada
CJ Logistics Corporation	Korea
CSX Corporation	United States
Deutsche Post AG	Germany
FirstGroup plc	United Kingdom
Hyundai Glovis Co., Ltd.	Rep. of Korea
MTR Corporation Limited	Hong Kong
Nippon Yusen Kabushiki Kaisha	Japan
Sydney Airport Limited	Australia

* S&P Global Industry Mover



Company Overview

Company name	Industry	Country	S&P Global distinction	S&P Global industry mover	Page
AA plc	Diversified Consumer Services	United Kingdom			120
AB Electrolux (publ)	Household Durables	Sweden	●		133
Abbott Laboratories	Health Care Equipment & Supplies	United States	●		129
AbbVie Inc.	Biotechnology	United States	●		109
ABN AMRO Bank N.V.	Banks	Netherlands	●		106
Acciona, S.A.	Electric Utilities	Spain	●		122
Acer Incorporated	Computers & Peripherals and Office Electronics	Taiwan	●		116
ACS, Actividades de Construcción y Servicios, S.A.	Construction & Engineering	Spain	●		117
Adani Ports and Special Economic Zone Limited	Transportation and Transportation Infrastructure	India			163
Adevinta ASA	Interactive Media, Services & Home Entertainment	Norway			137
adidas AG	Textiles, Apparel & Luxury Goods	Germany	●		160
Aditya Birla Fashion and Retail Limited	Textiles, Apparel & Luxury Goods	India			160
Adobe Inc.	Software	United States	●		157
Advanced Info Service Public Company Limited	Telecommunication Services	Thailand	●		159
Advantest Corporation	Semiconductors & Semiconductor Equipment	Japan		●	156
Aéroports de Paris SA	Transportation and Transportation Infrastructure	France			163
AES Gener S.A.	Electric Utilities	Chile			122
Agilent Technologies, Inc.	Life Sciences Tools & Services	United States			140
Aguas Andinas S.A.	Multi and Water Utilities	Chile			144
Air France-KLM SA	Airlines	France	●		102
Air Products and Chemicals, Inc.	Chemicals	United States			112
Airports of Thailand Public Company Limited	Transportation and Transportation Infrastructure	Thailand			163
Ajinomoto Co., Inc.	Food Products	Japan			127
Alcoa Corporation	Aluminum	United States	●		103
Allianz SE	Insurance	Germany	●		136
Almacenes Éxito S.A.	Food & Staples Retailing	Colombia			126
Alphabet Inc.	Interactive Media, Services & Home Entertainment	United States			137
Alstom SA	Machinery and Electrical Equipment	France			141
alstria office REIT-AG	Real Estate	Germany			152
Amadeus IT Group, S.A.	IT services	Spain	●		138
Ambuja Cements Limited	Construction Materials	India	●		118

● S&P Global Gold Class ● S&P Global Silver Class ● S&P Global Bronze Class ● S&P Global Industry Mover

Company name	Industry	Country	S&P Global distinction	S&P Global industry mover	Page
Amcor plc	Containers & Packaging	Switzerland			119
Amorepacific Corporation	Personal Products	Republic of Korea		●	149
ANA Holdings Inc.	Airlines	Japan	●		102
Anglo American Platinum Limited	Metals & Mining	South Africa			143
Anglo American plc	Metals & Mining	United Kingdom			143
AngloGold Ashanti Limited	Metals & Mining	South Africa			143
AntarChile S.A.	Industrial Conglomerates	Chile			135
Anthem, Inc.	Health Care Providers & Services	United States			130
Antofagasta plc	Metals & Mining	United Kingdom			143
Arçelik Anonim Sirketi	Household Durables	Turkey	●	●	133
Archer-Daniels-Midland Company	Food Products	United States			127
Arkema S.A.	Chemicals	France	●		112
ASE Technology Holding Co., Ltd.	Semiconductors & Semiconductor Equipment	Taiwan	●		156
ASICS Corporation	Textiles, Apparel & Luxury Goods	Japan			160
ASML Holding N.V.	Semiconductors & Semiconductor Equipment	Netherlands	●		156
ASR Nederland N.V.	Insurance	Netherlands	●		136
Assicurazioni Generali S.p.A.	Insurance	Italy	●		136
AstraZeneca PLC	Pharmaceuticals	United Kingdom	●		150
ASUSTeK Computer Inc.	Computers & Peripherals and Office Electronics	Taiwan			116
AT&T Inc.	Telecommunication Services	United States			159
Atos SE	IT services	France	●		138
AU Optronics Corp.	Electronic Equipment, Instruments & Components	Taiwan	●		124
Australia and New Zealand Banking Group Limited	Banks	Australia	●		106
Avangrid, Inc.	Electric Utilities	United States			122
AXA SA	Insurance	France	●		136
Ayala Land, Inc.	Real Estate	Philippines			152
BAE Systems plc	Aerospace & Defense	United Kingdom			101
Banco Bilbao Vizcaya Argentaria, S.A.	Banks	Spain	●		106
Banco Bradesco S.A.	Banks	Brazil	●		106
Banco Comercial Português, S.A.	Banks	Portugal			107
Banco Davivienda S.A.	Banks	Colombia			106
Banco de Bogotá S.A.	Banks	Colombia			106
Banco de Crédito e Inversiones	Banks	Chile			107
Banco del Estado de Chile	Banks	Chile			107

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Company name	Industry	Country	S&P Global distinction	S&P Global industry mover	Page
Banco do Brasil S.A.	Banks	Brazil	●		106
Banco Santander México, S.A., Institución de Banca Múltiple, Grupo Financiero Santander México	Banks	Mexico		●	107
Banco Santander, S.A.	Banks	Spain	●		106
Banco Santander-Chile	Banks	Chile			107
Bancolombia S.A.	Banks	Colombia	●		106
Bangchak Corporation Public Company Limited	Oil & Gas Refining & Marketing	Thailand	●		145
Bangkok Bank Public Company Limited	Banks	Thailand			107
Bank of America Corporation	Banks	United States			106
Bank of Montreal	Banks	Canada			106
Bankia, S.A.	Banks	Spain			106
Bankinter, S.A.	Banks	Spain	●		106
Banpu Public Company Limited	Coal & Consumable Fuels	Thailand	●		113
Barclays PLC	Banks	United Kingdom			106
Barrick Gold Corporation	Metals & Mining	Canada			143
Baxter International Inc.	Health Care Equipment & Supplies	United States			129
Bayerische Motoren Werke Aktieng- esellschaft	Automobiles	Germany	●		105
Berli Jucker Public Company Limited	Food & Staples Retailing	Thailand		●	126
BillerudKorsnäs AB (publ)	Containers & Packaging	Sweden	●		119
Biogen Inc.	Biotechnology	United States	●		109
bioMérieux S.A.	Health Care Equipment & Supplies	France			129
BNP Paribas SA	Banks	France	●		106
Brambles Limited	Commercial Services & Supplies	Australia	●		114
Braskem S.A.	Chemicals	Brazil			112
Bridgestone Corporation	Auto Components	Japan			104
British American Tobacco p.l.c.	Tobacco	United Kingdom	●		161
BTS Group Holdings Public Company Limited	Transportation and Transportation Infrastructure	Thailand	●		163
Burberry Group plc	Textiles, Apparel & Luxury Goods	United Kingdom	●		160
Bureau Veritas SA	Professional Services	France	●	●	151
CaixaBank, S.A.	Banks	Spain	●		106
Campbell Soup Company	Food Products	United States			127
Canadian Imperial Bank of Commerce	Banks	Canada			107
Canadian National Railway Company	Transportation and Transportation Infrastructure	Canada			163
Canadian Pacific Railway Limited	Transportation and Transportation Infrastructure	Canada		●	163

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Company name	Industry	Country	S&P Global distinction	S&P Global industry mover	Page
Capgemini SE	IT services	France		●	138
CapitaLand Limited	Real Estate	Singapore			152
Carrefour SA	Food & Staples Retailing	France			126
Casino, Guichard-Perrachon Société Anonyme	Food & Staples Retailing	France			126
Casio Computer Co.,Ltd.	Leisure Equipment & Products and Consumer Electronics	Japan			139
Castellum AB (publ)	Real Estate	Sweden	●		152
Caterpillar Inc.	Machinery and Electrical Equipment	United States			141
Cathay Financial Holding Co., Ltd.	Insurance	Taiwan	●		136
CBRE Group, Inc.	Real Estate	United States			152
Cellnex Telecom, S.A.	Telecommunication Services	Spain			159
CELSIA S.A. E.S.P.	Electric Utilities	Colombia	●		122
Cementos Argos S.A.	Construction Materials	Colombia	●		118
Cementos Pacasmayo S.A.A.	Construction Materials	Peru		●	118
CEMEX, S.A.B. de C.V.	Construction Materials	Mexico			118
Cencosud S.A.	Food & Staples Retailing	Chile			126
Centrais Elétricas Brasileiras S.A. - Eletrobrás	Electric Utilities	Brazil	●		122
Central Pattana Public Company Limited	Real Estate	Thailand			152
Chailease Holding Company Limited	Diversified Financial Services and Capital Markets	Taiwan			121
Charoen Pokphand Foods Public Company Limited	Food Products	Thailand	●		127
Charter Hall Group	Real Estate	Australia			152
Charter Hall Long WALE REIT	Real Estate	Australia			152
China Airlines, Ltd.	Airlines	Taiwan	●		102
China Development Financial Holding Corporation	Insurance	Taiwan	●		136
China Everbright Environment Group Limited	Commercial Services & Supplies	Hong Kong			114
China Petrochemical Development Corporation	Chemicals	Taiwan		●	112
China Steel Corporation	Steel	Taiwan			158
Chugai Pharmaceutical Co., Ltd.	Pharmaceuticals	Japan	●		150
Chunghwa Telecom Co., Ltd.	Telecommunication Services	Taiwan	●		159
Cielo S.A.	IT services	Brazil			138
Cigna Corporation	Health Care Providers & Services	United States	●		130
CIMIC Group Limited	Construction & Engineering	Australia			117
Cisco Systems, Inc.	Communications Equipment	United States	●		115

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Company name	Industry	Country	S&P Global distinction	S&P Global industry mover	Page
Citigroup Inc.	Banks	United States			107
City Developments Limited	Real Estate	Singapore			152
CJ Cheiljedang Corporation	Food Products	Republic of Korea			127
CJ Logistics Corporation	Transportation and Transportation Infrastructure	Korea			163
Clariant AG	Chemicals	Switzerland			112
CLP Holdings Limited	Electric Utilities	Hong Kong			122
CNH Industrial N.V.	Machinery and Electrical Equipment	United Kingdom	●		141
Coca-Cola European Partners plc	Beverages	United Kingdom	●		108
Coca-Cola FEMSA, S.A.B. de C.V.	Beverages	Mexico			108
Coca-Cola HBC AG	Beverages	Switzerland	●		108
Colbún S.A.	Electric Utilities	Chile			122
Colgate-Palmolive Company	Household Products	United States	●		134
Colombina S.A.	Food Products	Colombia	●		127
Commonwealth Bank of Australia	Banks	Australia			107
Companhia Energética de Minas Gerais	Electric Utilities	Brazil	●		122
ConocoPhillips	Oil & Gas Upstream & Integrated	United States			147
Corporacion Aceros Arequipa S.A.	Steel	Peru			158
Covivio	Real Estate	France			152
COWAY Co., Ltd.	Household Durables	Republic of Korea			133
CP ALL Public Company Limited	Food & Staples Retailing	Thailand	●		126
Credit Suisse Group AG	Diversified Financial Services and Capital Markets	Switzerland			121
CRH plc	Construction Materials	Ireland	●		118
CSX Corporation	Transportation and Transportation Infrastructure	United States			163
CTBC Financial Holding Co., Ltd.	Banks	Taiwan	●		106
CTCI Corporation	Construction & Engineering	Taiwan	●		117
Cummins Inc.	Machinery and Electrical Equipment	United States			141
CVS Health Corporation	Health Care Providers & Services	United States	●	●	130
Dai-ichi Life Holdings, Inc.	Insurance	Japan			136
Daiichi Sankyo Company, Limited	Pharmaceuticals	Japan			150
Daikin Industries, Ltd.	Building Products	Japan			110
Daiwa House Industry Co., Ltd.	Real Estate	Japan			152
Daiwa Securities Group Inc.	Diversified Financial Services and Capital Markets	Japan			121
Danone S.A.	Food Products	France			127

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DaVita Inc.	Health Care Providers & Services	United States			130
DBS Group Holdings Ltd	Banks	Singapore			107
Delta Air Lines, Inc.	Airlines	United States			102
Delta Electronics (Thailand) Public Company Limited	Electronic Equipment, Instruments & Components	Thailand	●		124
Delta Electronics, Inc.	Electronic Equipment, Instruments & Components	Taiwan	●		124
Deutsche Börse AG	Diversified Financial Services and Capital Markets	Germany			121
Deutsche Post AG	Transportation and Transportation Infrastructure	Germany			163
Deutsche Telekom AG	Telecommunication Services	Germany	●		159
Dexus	Real Estate	Australia	●		152
Diageo plc	Beverages	United Kingdom	●		108
DIC Corporation	Chemicals	Japan			112
DLF Limited	Real Estate	India		●	152
Doosan Corporation	Industrial Conglomerates	Republic of Korea			135
Doosan Heavy Industries & Construction Co., Ltd.	Machinery and Electrical Equipment	Republic of Korea			141
Dow Inc.	Chemicals	United States			112
Downer EDI Limited	Commercial Services & Supplies	Australia		●	114
Dr. Reddy's Laboratories Limited	Pharmaceuticals	India			150
Duke Energy Corporation	Electric Utilities	United States			122
E.SUN Financial Holding Company, Ltd.	Banks	Taiwan	●		106
eBay Inc.	Retailing	United States			155
Ecolab Inc.	Chemicals	United States			112
Ecopetrol S.A.	Oil & Gas Upstream & Integrated	Colombia			147
EDP - Energias de Portugal, S.A.	Electric Utilities	Portugal	●		122
EDP Renováveis, S.A.	Electric Utilities	Spain			122
Edwards Lifesciences Corporation	Health Care Equipment & Supplies	United States			129
Eisai Co., Ltd.	Pharmaceuticals	Japan			150
Electricité de France S.A.	Electric Utilities	France	●		122
Electricity Generating Public Company Limited	Electric Utilities	Thailand	●		122
Embotelladora Andina S.A.	Beverages	Chile			108
Empresas CMPC S.A.	Paper & Forest Products	Chile			148
Empresas Copec S.A.	Oil & Gas Refining & Marketing	Chile		●	145
Enaex S.A.	Chemicals	Chile			112
Enagás, S.A.	Gas Utilities	Spain	●		128

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Company name	Industry	Country	S&P Global distinction	S&P Global industry mover	Page
Enbridge Inc.	Oil & Gas Storage & Transportation	Canada			146
Endesa, S.A.	Electric Utilities	Spain	●		122
Enel Américas S.A.	Electric Utilities	Chile	●		122
Enel Chile S.A.	Electric Utilities	Chile	●		122
Enel SpA	Electric Utilities	Italy	●		122
ENGIE SA	Multi and Water Utilities	France	●		144
Entergy Corporation	Electric Utilities	United States	●		122
Essity AB (publ)	Household Products	Sweden	●		134
Exelon Corporation	Electric Utilities	United States			122
Experian plc	Professional Services	Ireland			151
Falabella S.A.	Retailing	Chile			155
Far EasTone Telecommunications Co., Ltd.	Telecommunication Services	Taiwan	●		159
Fast Retailing Co., Ltd.	Retailing	Japan			155
Ferrovial, S.A.	Construction & Engineering	Spain	●		117
FIBRA Prologis	Real Estate	Mexico			152
Fibra UNO	Real Estate	Mexico			152
First Financial Holding Co., Ltd.	Banks	Taiwan	●		106
FirstGroup plc	Transportation and Transportation Infrastructure	United Kingdom			163
Fleury S.A.	Health Care Providers & Services	Brazil			130
Flex Ltd.	Electronic Equipment, Instruments & Components	Singapore			124
Fortescue Metals Group Limited	Steel	Australia	●		158
Fubon Financial Holding Co., Ltd.	Insurance	Taiwan	●		136
FUJIFILM Holdings Corporation	Computers & Peripherals and Office Electronics	Japan			116
Fujitsu Limited	IT services	Japan			138
Galp Energia, SGPS, S.A.	Oil & Gas Upstream & Integrated	Portugal	●		147
General Mills, Inc.	Food Products	United States			127
General Motors Company	Automobiles	United States	●		105
Gestamp Automoción, S.A.	Auto Components	Spain			104
Gildan Activewear Inc.	Textiles, Apparel & Luxury Goods	Canada	●		160
GlaxoSmithKline plc	Pharmaceuticals	United Kingdom	●		150
Glenmark Pharmaceuticals Limited	Pharmaceuticals	India			150
Global Power Synergy Public Company Limited	Electric Utilities	Thailand			122
Godrej Consumer Products Limited	Personal Products	India			149
Gold Fields Limited	Metals & Mining	South Africa			143
GPT Group	Real Estate	Australia	●		152

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Company name	Industry	Country	S&P Global distinction	S&P Global industry mover	Page
Grupo Argos S.A.	Construction Materials	Colombia	●		118
Grupo de Inversiones Suramericana S.A.	Diversified Financial Services and Capital Markets	Colombia	●		121
Grupo Nutresa S. A.	Food Products	Colombia	●		127
GS Engineering & Construction Corporation	Construction & Engineering	Republic of Korea	●	●	117
Gulf Energy Development Public Company Limited	Electric Utilities	Thailand		●	122
GVC Holdings PLC	Casinos & Gaming	Isle of Man			111
H & M Hennes & Mauritz AB (publ)	Retailing	Sweden	●		155
Hammerson plc	Real Estate	United Kingdom			152
Hana Financial Group Inc.	Banks	Republic of Korea			107
Hang Seng Bank Limited	Banks	Hong Kong			107
Hankook Tire & Technology Co., Ltd.	Auto Components	Republic of Korea	●		104
Havells India Limited	Electrical Components & Equipment	India			123
Healthpeak Properties, Inc.	Real Estate	United States			152
HeidelbergCement AG	Construction Materials	Germany			118
Heineken Holding N.V.	Beverages	Netherlands		●	108
Heineken N.V.	Beverages	Netherlands			108
Hera S.p.A.	Multi and Water Utilities	Italy	●	●	144
Hess Corporation	Oil & Gas Upstream & Integrated	United States			147
Hewlett Packard Enterprise Company	Computers & Peripherals and Office Electronics	United States	●		116
Hilton Worldwide Holdings Inc.	Hotels, Resorts & Cruise Lines	United States	●		132
Hindalco Industries Limited	Aluminum	India	●		103
Hindustan Zinc Limited	Metals & Mining	India			143
HOCHTIEF Aktiengesellschaft	Construction & Engineering	Germany	●		117
Home Product Center Public Company Limited	Retailing	Thailand	●		155
Honda Motor Co., Ltd.	Automobiles	Japan	●		105
Host Hotels & Resorts, Inc.	Real Estate	United States			152
HP Inc.	Computers & Peripherals and Office Electronics	United States	●		116
Hugo Boss AG	Textiles, Apparel & Luxury Goods	Germany	●		160
Humana Inc.	Health Care Providers & Services	United States			130
Hyundai Engineering & Construction Co., Ltd.	Construction & Engineering	Republic of Korea	●		117
Hyundai Glovis Co., Ltd.	Transportation and Transportation Infrastructure	Republic of Korea			163

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Hyundai Mobis Co.,Ltd	Auto Components	Republic of Korea	●	●	104
Hyundai Steel Company	Steel	Republic of Korea	●		158
Iberdrola, S.A.	Electric Utilities	Spain	●		122
Ibiden Co.,Ltd.	Electronic Equipment, Instruments & Components	Japan			124
IGO Limited	Metals & Mining	Australia			143
Illumina, Inc.	Life Sciences Tools & Services	United States		●	140
Incitec Pivot Limited	Chemicals	Australia			112
Indorama Ventures Public Company Limited	Chemicals	Thailand	●		112
Indra Sistemas, S.A.	IT services	Spain	●		138
IndusInd Bank Limited	Banks	India			107
Industria de Diseño Textil, S.A.	Retailing	Spain	●		155
Infineon Technologies AG	Semiconductors & Semiconductor Equipment	Germany	●		156
Informa plc	Media, Movies & Entertainment	United Kingdom	●	●	142
Infosys Limited	IT services	India			138
Innolux Corporation	Electronic Equipment, Instruments & Components	Taiwan	●		124
Inpex Corporation	Oil & Gas Upstream & Integrated	Japan		●	147
Insurance Australia Group Limited	Insurance	Australia			136
Intel Corporation	Semiconductors & Semiconductor Equipment	United States			156
Interconexión Eléctrica S.A. E.S.P.	Electric Utilities	Colombia	●		122
InterContinental Hotels Group PLC	Hotels, Resorts & Cruise Lines	United Kingdom		●	132
International Flavors & Fragrances Inc.	Chemicals	United States			112
Intesa Sanpaolo S.p.A.	Banks	Italy	●		106
Inversiones Aguas Metropolitanas S.A.	Multi and Water Utilities	Chile			144
Investec Group	Diversified Financial Services and Capital Markets	South Africa			121
IRPC Public Company Limited	Oil & Gas Refining & Marketing	Thailand	●		145
ISS A/S	Commercial Services & Supplies	Denmark			114
Italgas S.p.A.	Gas Utilities	Italy	●	●	128
Itaú Corpbanca	Banks	Chile			107
Itaú Unibanco Holding S.A.	Banks	Brazil			107
Itaúsa - Investimentos Itaú S.A.	Banks	Brazil			107
ITOCHU Corporation	Trading Companies & Distributors	Japan	●		162
Japan Airlines Co., Ltd.	Airlines	Japan		●	102

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Company name	Industry	Country	S&P Global distinction	S&P Global industry mover	Page
Japan Tobacco Inc.	Tobacco	Japan	●	●	161
Johnson Controls International plc	Building Products	Ireland			110
Johnson Matthey Plc	Chemicals	United Kingdom			112
Jones Lang LaSalle Incorporated	Real Estate	United States			152
JSW Steel Limited	Steel	India			158
Kangwon Land, Inc.	Casinos & Gaming	Republic of Korea			111
Kao Corporation	Personal Products	Japan			149
Kasikornbank Public Company Limited	Banks	Thailand	●		106
Kawasaki Heavy Industries, Ltd.	Machinery and Electrical Equipment	Japan			141
KB Financial Group Inc.	Banks	Republic of Korea	●		106
KBC Group NV	Banks	Belgium			1076
Kellogg Company	Food Products	United States			127
Keppel Corporation Limited	Industrial Conglomerates	Singapore		●	135
Kering SA	Textiles, Apparel & Luxury Goods	France	●		160
Kesko Oyj	Food & Staples Retailing	Finland			126
Kilroy Realty Corporation	Real Estate	United States			152
Kimco Realty Corporation	Real Estate	United States			152
Kinross Gold Corporation	Metals & Mining	Canada			143
Klabin S.A.	Containers & Packaging	Brazil			119
Kohl's Corporation	Retailing	United States			155
Komatsu Ltd.	Machinery and Electrical Equipment	Japan			141
Konica Minolta, Inc.	Computers & Peripherals and Office Electronics	Japan	●		116
Koninklijke Ahold Delhaize N.V.	Food & Staples Retailing	Netherlands	●		126
Koninklijke DSM N.V.	Chemicals	Netherlands			112
Koninklijke KPN N.V.	Telecommunication Services	Netherlands	●		159
Koninklijke Philips N.V.	Health Care Equipment & Supplies	Netherlands	●		129
Korea Electric Power Corporation	Electric Utilities	Republic of Korea			122
Korea Gas Corporation	Gas Utilities	Republic of Korea			128
Kyocera Corporation	Electronic Equipment, Instruments & Components	Japan			124
LafargeHolcim Ltd	Construction Materials	Switzerland			118
Lagardère SCA	Media, Movies & Entertainment	France			142
Land Securities Group plc	Real Estate	United Kingdom	●		152
LANXESS Aktiengesellschaft	Chemicals	Germany	●		112

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Company name	Industry	Country	S&P Global distinction	S&P Global industry mover	Page
Las Vegas Sands Corp.	Casinos & Gaming	United States	●		111
LATAM Airlines Group S.A.	Airlines	Chile	●		102
Legrand SA	Electrical Components & Equipment	France			123
Leonardo S.p.a.	Aerospace & Defense	Italy	●		101
LG Chem, Ltd.	Chemicals	Republic of Korea			112
LG Display Co., Ltd.	Electronic Equipment, Instruments & Components	Republic of Korea			124
LG Electronics Inc.	Leisure Equipment & Products and Consumer Electronics	Republic of Korea	●		139
LG Hausys, Ltd.	Building Products	Republic of Korea		●	110
LG Household & Health Care Ltd.	Personal Products	Republic of Korea			149
LG Innotek Co., Ltd.	Electronic Equipment, Instruments & Components	Republic of Korea			124
Liberty Global plc	Media, Movies & Entertainment	United Kingdom			142
Linde plc	Chemicals	United Kingdom	●		112
Lite-On Technology Corporation	Computers & Peripherals and Office Electronics	Taiwan	●	●	116
LIXIL Group Corporation	Building Products	Japan	●		110
Lockheed Martin Corporation	Aerospace & Defense	United States			101
Lojas Renner S.A.	Retailing	Brazil			155
London Stock Exchange Group plc	Diversified Financial Services and Capital Markets	United Kingdom			121
LVMH Moët Hennessy - Louis Vuitton, Société Européenne	Textiles, Apparel & Luxury Goods	France			160
Mahindra & Mahindra Financial Services Limited	Diversified Financial Services and Capital Markets	India			121
ManpowerGroup Inc.	Professional Services	United States			151
Mapfre, S.A.	Insurance	Spain			136
Marubeni Corporation	Trading Companies & Distributors	Japan			162
Marui Group Co., Ltd.	Retailing	Japan	●		155
Mastercard Incorporated	IT services	United States			138
Mazda Motor Corporation	Automobiles	Japan			105
Medtronic plc	Health Care Equipment & Supplies	Ireland			129
Meliá Hotels International, S.A.	Hotels, Resorts & Cruise Lines	Spain	●		132
MetLife, Inc.	Insurance	United States			136
Metro AG	Food & Staples Retailing	Germany	●		126
Microsoft Corporation	Software	United States			157
Minor International Public Company Limited	Hotels, Resorts & Cruise Lines	Thailand			132

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Mirae Asset Daewoo Co., Ltd.	Diversified Financial Services and Capital Markets	Republic of Korea			121
Mitr Phol Sugar Corporation Limited	Food Products	Thailand	●		127
Mitsubishi Chemical Holdings Corporation	Chemicals	Japan	●		112
Mitsubishi Estate Co., Ltd.	Real Estate	Japan			152
Mitsubishi Heavy Industries, Ltd.	Machinery and Electrical Equipment	Japan			141
Mitsubishi Tanabe Pharma Corporation	Pharmaceuticals	Japan			150
Mitsui & Co., Ltd.	Trading Companies & Distributors	Japan			162
Mitsui Chemicals, Inc.	Chemicals	Japan			112
Mizuho Financial Group, Inc.	Banks	Japan			107
Modern Times Group Mtg AB	Interactive Media, Services & Home Entertainment	Sweden			137
MOL Magyar Olaj- és Gázipari Nyilvánosan Működő Részvénytársaság	Oil & Gas Upstream & Integrated	Hungary			147
Moncler S.p.A.	Textiles, Apparel & Luxury Goods	Italy	●		160
Mondelez International, Inc.	Food Products	United States	●		127
Mondi plc	Paper & Forest Products	United Kingdom			148
MS&AD Insurance Group Holdings, Inc.	Insurance	Japan			136
MTR Corporation Limited	Transportation and Transportation Infrastructure	Hong Kong			163
Münchener Rückversicherungs-Gesellschaft Aktiengesellschaft in München	Insurance	Germany			136
Nabtesco Corporation	Machinery and Electrical Equipment	Japan			141
Nanya Technology Corporation	Semiconductors & Semiconductor Equipment	Taiwan	●		156
National Australia Bank Limited	Banks	Australia	●		106
Natura &Co Holding S.A.	Personal Products	Brazil			149
Naturgy Energy Group, S.A.	Gas Utilities	Spain	●		128
NEC Corporation	IT services	Japan	●		138
Nedbank Group Limited	Banks	South Africa			107
Neoenergia S.A.	Electric Utilities	Brazil			122
Neste Oyj	Oil & Gas Refining & Marketing	Finland	●		145
Nestlé S.A.	Food Products	Switzerland			127
New World Development Company Limited	Real Estate	Hong Kong			152
Newcrest Mining Limited	Metals & Mining	Australia			143
Newmont Corporation	Metals & Mining	United States	●		143

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Nexi S.p.A.	IT services	Italy			138
NGK Spark Plug Co., Ltd.	Auto Components	Japan			104
NH Hotel Group, S.A.	Hotels, Resorts & Cruise Lines	Spain	●	●	132
Nielsen Holdings plc	Professional Services	United States			151
Nikon Corporation	Leisure Equipment & Products and Consumer Electronics	Japan			139
Nippon Prologis REIT, Inc.	Real Estate	Japan			152
Nippon Telegraph and Telephone Corporation	Telecommunication Services	Japan	●		159
Nippon Yusen Kabushiki Kaisha	Transportation and Transportation Infrastructure	Japan			163
Nissan Chemical Corporation	Chemicals	Japan			112
Nissin Foods Holdings Co.,Ltd.	Food Products	Japan			127
NN Group N.V.	Insurance	Netherlands	●		136
Nokian Renkaat Oyj	Auto Components	Finland	●		104
Nomura Holdings, Inc.	Diversified Financial Services and Capital Markets	Japan			121
Nomura Research Institute, Ltd.	IT services	Japan	●		138
Nordic Entertainment Group AB (publ)	Media, Movies & Entertainment	Sweden			142
Norsk Hydro ASA	Aluminum	Norway	●		103
Northrop Grumman Corporation	Aerospace & Defense	United States			101
NortonLifeLock Inc.	Software	United States			157
Novartis AG	Pharmaceuticals	Switzerland			150
NTT DATA Corporation	IT services	Japan	●		138
NTT DOCOMO, INC.	Telecommunication Services	Japan	●		159
Nutrien Ltd.	Chemicals	Canada			112
NVIDIA Corporation	Semiconductors & Semiconductor Equipment	United States			156
OCI Company Ltd.	Chemicals	Republic of Korea			112
Oil Search Limited	Oil & Gas Upstream & Integrated	Papua New Guinea			147
Olympus Corporation	Health Care Equipment & Supplies	Japan		●	130
OMRON Corporation	Electronic Equipment, Instruments & Components	Japan	●		124
OMV Aktiengesellschaft	Oil & Gas Upstream & Integrated	Austria			147
ON Semiconductor Corporation	Semiconductors & Semiconductor Equipment	United States			156
ONEOK, Inc.	Oil & Gas Storage & Transportation	United States		●	146
Ono Pharmaceutical Co., Ltd.	Pharmaceuticals	Japan		●	150

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Orbia Advance Corporation, S.A.B. de C.V.	Chemicals	Mexico			112
Organización Terpel S.A.	Retailing	Colombia			155
Oriental Land Co., Ltd.	Restaurants & Leisure Facilities	Japan			154
Orkla ASA	Food Products	Norway			127
Oshkosh Corporation	Machinery and Electrical Equipment	United States			141
OSRAM Licht AG	Electrical Components & Equipment	Germany	●		123
Outokumpu Oyj	Steel	Finland			158
Owens Corning	Building Products	United States	●		110
Parque Arauco S.A.	Real Estate	Chile			152
Pearson plc	Media, Movies & Entertainment	United Kingdom			142
Petrobras Distribuidora S.A.	Retailing	Brazil			155
Petróleo Brasileiro S.A. - Petrobras	Oil & Gas Upstream & Integrated	Brazil			147
Peugeot S.A.	Automobiles	France	●		105
Ping An Insurance (Group) Company of China, Ltd.	Insurance	China			136
Pirelli & C. S.p.A.	Auto Components	Italy	●		104
Plaza S.A.	Real Estate	Chile			152
Polymetal International plc	Metals & Mining	Cyprus			143
POSCO	Steel	Republic of Korea	●		158
Poste Italiane SpA	Insurance	Italy	●		136
PostNL N.V.	Transportation and Transportation Infrastructure	Netherlands	●		163
President Chain Store Corporation	Food & Staples Retailing	Taiwan	●		126
Prologis, Inc.	Real Estate	United States			152
Promigas S.A. E.S.P.	Gas Utilities	Colombia			128
Provident Financial plc	Diversified Financial Services and Capital Markets	United Kingdom			121
Prysmian S.p.A.	Electrical Components & Equipment	Italy	●		123
PTT Exploration and Production Public Company Limited	Oil & Gas Upstream & Integrated	Thailand	●		147
PTT Global Chemical Public Company Limited	Chemicals	Thailand	●		112
PTT Public Company Limited	Oil & Gas Upstream & Integrated	Thailand	●		147
Public Service Enterprise Group Incorporated	Multi and Water Utilities	United States			144
Pulmuone Co., Ltd.	Food Products	Republic of Korea			127
PUMA SE	Textiles, Apparel & Luxury Goods	Germany		●	160

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QBE Insurance Group Limited	Insurance	Australia			136
Quest Diagnostics Incorporated	Health Care Providers & Services	United States			130
Rakuten, Inc.	Retailing	Japan		●	155
Randstad N.V.	Professional Services	Netherlands			151
REA Group Limited	Interactive Media, Services & Home Entertainment	Australia			137
Reckitt Benckiser Group plc	Household Products	United Kingdom	●		134
Red Eléctrica Corporación, S.A.	Electric Utilities	Spain	●		122
Regeneron Pharmaceuticals, Inc.	Biotechnology	United States		●	109
RELX PLC	Professional Services	United Kingdom	●		151
Rentokil Initial plc	Commercial Services & Supplies	United Kingdom			114
Republic Services, Inc.	Commercial Services & Supplies	United States			114
Rexel S.A.	Trading Companies & Distributors	France			162
Ricoh Company, Ltd.	Computers & Peripherals and Office Electronics	Japan	●		116
Rio Tinto Group	Metals & Mining	United Kingdom			143
Roche Holding AG	Pharmaceuticals	Switzerland	●		150
Rolls-Royce Holdings plc	Aerospace & Defense	United Kingdom			101
Royal Bank of Canada	Banks	Canada			107
Royal Dutch Shell plc	Oil & Gas Upstream & Integrated	Netherlands			147
Royal Mail plc	Transportation and Transportation Infrastructure	United Kingdom	●		163
S&P Global Inc.	Diversified Financial Services and Capital Markets	United States			121
Saipem SpA	Energy Equipment & Services	Italy	●		125
Samsung C&T Corporation	Industrial Conglomerates	Republic of Korea			135
Samsung Electro-Mechanics Co., Ltd.	Electronic Equipment, Instruments & Components	Republic of Korea			124
Samsung Engineering Co., Ltd.	Construction & Engineering	Republic of Korea	●		117
Samsung Fire & Marine Insurance Co., Ltd.	Insurance	Republic of Korea			136
Samsung SDI Co., Ltd.	Electronic Equipment, Instruments & Components	Republic of Korea			124
Samsung SDS Co., Ltd.	IT services	Republic of Korea			138
Samsung Securities Co., Ltd.	Diversified Financial Services and Capital Markets	Republic of Korea			121
Sands China Ltd.	Casinos & Gaming	Macao		●	111
Sandvik AB	Machinery and Electrical Equipment	Sweden			141
Sanofi	Pharmaceuticals	France	●		150

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SAP SE	Software	Germany	●		157
SBM Offshore N.V.	Energy Equipment & Services	Netherlands		●	125
Schlumberger Limited	Energy Equipment & Services	United States			125
Schneider Electric S.E.	Electrical Components & Equipment	France	●		123
Schnitzer Steel Industries, Inc.	Steel	United States		●	158
Seiko Epson Corporation	Computers & Peripherals and Office Electronics	Japan			116
Sekisui Chemical Co., Ltd.	Homebuilding	Japan	●		131
Sekisui House, Ltd.	Homebuilding	Japan	●		131
Sempra Energy	Multi and Water Utilities	United States	●		144
Seven & i Holdings Co., Ltd.	Food & Staples Retailing	Japan			126
SGS SA	Professional Services	Switzerland	●		151
Shin Kong Financial Holding Co., Ltd.	Insurance	Taiwan			136
Shinhan Financial Group Co., Ltd.	Banks	Republic of Korea	●		106
Shiseido Company, Limited	Personal Products	Japan			149
Siemens Aktiengesellschaft	Industrial Conglomerates	Germany	●		135
Siemens Gamesa Renewable Energy, S.A.	Machinery and Electrical Equipment	Spain		●	141
Signify N.V.	Electrical Components & Equipment	Netherlands	●		123
SinoPac Financial Holdings Company Limited	Banks	Taiwan			107
SK Holdings Co., Ltd	Industrial Conglomerates	Republic of Korea	●		135
SK hynix, Inc.	Semiconductors & Semiconductor Equipment	Republic of Korea			156
SK Innovation Co., Ltd.	Oil & Gas Refining & Marketing	Republic of Korea	●		145
SK Telecom Co.,Ltd	Telecommunication Services	Republic of Korea	●		159
Smith & Nephew plc	Health Care Equipment & Supplies	United Kingdom			129
Snam S.p.A.	Gas Utilities	Italy			128
Snap Inc.	Interactive Media, Services & Home Entertainment	United States			137
Société Générale Société anonyme	Banks	France			107
Sodexo S.A.	Restaurants & Leisure Facilities	France	●		154
S-Oil Corporation	Oil & Gas Refining & Marketing	Republic of Korea	●		145
Sojitz Corporation	Trading Companies & Distributors	Japan	●		162
Solvay SA	Chemicals	Belgium			112
Sompo Holdings, Inc.	Insurance	Japan			136

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Company name	Industry	Country	S&P Global distinction	S&P Global industry mover	Page
Sonova Holding AG	Health Care Equipment & Supplies	Switzerland	●		129
Standard Chartered PLC	Banks	United Kingdom			107
Standard Life Aberdeen plc	Diversified Financial Services and Capital Markets	United Kingdom			121
Stanley Black & Decker, Inc.	Machinery and Electrical Equipment	United States	●		141
State Street Corporation	Diversified Financial Services and Capital Markets	United States			121
STMicroelectronics N.V.	Semiconductors & Semiconductor Equipment	Switzerland			156
Stockland	Real Estate	Australia	●		152
Storebrand ASA	Insurance	Norway	●		136
Suez SA	Multi and Water Utilities	France			144
Sul América S.A.	Insurance	Brazil			136
Sumitomo Forestry Co., Ltd.	Homebuilding	Japan	●		131
Sun Life Financial Inc.	Insurance	Canada			136
Suncor Energy Inc.	Oil & Gas Upstream & Integrated	Canada			147
Suncorp Group Limited	Insurance	Australia		●	136
Super Retail Group Limited	Retailing	Australia			155
Suzano S.A.	Paper & Forest Products	Brazil			148
Svenska Handelsbanken AB (publ)	Banks	Sweden			107
Swedbank AB (publ)	Banks	Sweden	●		107
Swire Properties Limited	Real Estate	Hong Kong			152
Swiss Re AG	Insurance	Switzerland	●		136
Sydney Airport Limited	Transportation and Transportation Infrastructure	Australia			163
Sysmex Corporation	Health Care Equipment & Supplies	Japan			129
Tabcorp Holdings Limited	Casinos & Gaming	Australia	●		111
Taishin Financial Holding Co., Ltd.	Banks	Taiwan	●		106
Taiwan Cement Corp.	Construction Materials	Taiwan			118
Taiwan Mobile Co., Ltd.	Telecommunication Services	Taiwan	●		159
Taiwan Semiconductor Manufacturing Company Limited	Semiconductors & Semiconductor Equipment	Taiwan	●		156
Takeda Pharmaceutical Company Limited	Pharmaceuticals	Japan			150
Tata Consultancy Services Limited	IT services	India			138
Tata Steel Limited	Steel	India			158
Taylor Wimpey plc	Homebuilding	United Kingdom			131
TC Energy Corporation	Oil & Gas Storage & Transportation	Canada			146
TDK Corporation	Electronic Equipment, Instruments & Components	Japan		●	124

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Company name	Industry	Country	S&P Global distinction	S&P Global industry mover	Page
TE Connectivity Ltd.	Electronic Equipment, Instruments & Components	Switzerland			124
Tech Mahindra Limited	IT services	India	●		138
Teck Resources Limited	Metals & Mining	Canada	●		143
TECO Electric & Machinery Co., Ltd.	Electrical Components & Equipment	Taiwan		●	123
Telecom Italia S.p.A.	Telecommunication Services	Italy	●		159
Telefonaktiebolaget LM Ericsson (publ)	Communications Equipment	Sweden		●	115
Telefônica Brasil S.A.	Telecommunication Services	Brazil		●	159
Telefónica, S.A.	Telecommunication Services	Spain			159
Telenet Group Holding NV	Media, Movies & Entertainment	Belgium	●		142
Télévision Française 1 Société anonyme	Media, Movies & Entertainment	France			142
TELUS Corporation	Telecommunication Services	Canada	●		159
Temenos AG	Software	Switzerland	●	●	157
Terna - Rete Elettrica Nazionale Società per Azioni	Electric Utilities	Italy	●		122
Tesco PLC	Food & Staples Retailing	United Kingdom			126
Thai Beverage Public Company Limited	Beverages	Thailand	●		108
Thai Oil Public Company Limited	Oil & Gas Refining & Marketing	Thailand	●		145
Thai Union Group Public Company Limited	Food Products	Thailand	●		127
Thales S.A.	Aerospace & Defense	France			101
The AES Corporation	Electric Utilities	United States	●		122
The Bank of New York Mellon Corporation	Diversified Financial Services and Capital Markets	United States			121
The Bank of Nova Scotia	Banks	Canada			107
The Gap, Inc.	Retailing	United States			155
The Hartford Financial Services Group, Inc.	Insurance	United States			136
The Hershey Company	Food Products	United States			127
The Kraft Heinz Company	Food Products	United States		●	127
The Siam Cement Public Company Limited	Construction Materials	Thailand	●		118
The Siam Commercial Bank Public Company Limited	Banks	Thailand	●		106
The Star Entertainment Group Limited	Casinos & Gaming	Australia	●		111
The Toronto-Dominion Bank	Banks	Canada			1076
The Unilever Group	Personal Products	Netherlands	●		149
The Williams Companies, Inc.	Oil & Gas Storage & Transportation	United States			146

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Company name	Industry	Country	S&P Global distinction	S&P Global industry mover	Page
Tokio Marine Holdings, Inc.	Insurance	Japan			136
Tokyo Electron Limited	Semiconductors & Semiconductor Equipment	Japan			156
Toppan Printing Co., Ltd.	Commercial Services & Supplies	Japan			114
Toray Industries, Inc.	Chemicals	Japan			112
TOTAL SE	Oil & Gas Upstream & Integrated	France			147
Toto Ltd.	Building Products	Japan	●		110
Trane Technologies plc	Building Products	Ireland			110
Transurban Group	Transportation and Transportation Infrastructure	Australia	●		163
True Corporation Public Company Limited	Telecommunication Services	Thailand	●		159
TUI AG	Hotels, Resorts & Cruise Lines	Germany			132
Turkiye Garanti Bankasi A.S.	Banks	Turkey			107
UBS Group AG	Diversified Financial Services and Capital Markets	Switzerland	●		121
Ülker Bisküvi Sanayi A.S.	Food Products	Turkey			127
United Microelectronics Corporation	Semiconductors & Semiconductor Equipment	Taiwan	●		156
United Utilities Group PLC	Multi and Water Utilities	United Kingdom	●		144
UnitedHealth Group Incorporated	Health Care Providers & Services	United States			130
UPL Limited	Chemicals	India			112
UPM-Kymmene Oyj	Paper & Forest Products	Finland	●		148
Vakrangee Limited	IT services	India			138
Valeo SA	Auto Components	France	●		104
Valmet Oyj	Machinery and Electrical Equipment	Finland	●		141
Vedanta Limited	Metals & Mining	India		●	143
Ventas, Inc.	Real Estate	United States			152
Veolia Environnement S.A.	Multi and Water Utilities	France	●		144
Vermilion Energy Inc.	Oil & Gas Upstream & Integrated	Canada			147
Vestas Wind Systems A/S	Machinery and Electrical Equipment	Denmark			141
Vicinity Centres	Real Estate	Australia			152
Viña Concha y Toro S.A.	Beverages	Chile			108
VINCI SA	Construction & Engineering	France			117
Vipshop Holdings Limited	Retailing	China			155
Visa Inc.	IT services	United States			138
Volvo Car Corporation	Automobiles	Sweden			105
Voya Financial, Inc.	Diversified Financial Services and Capital Markets	United States			121

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Company name	Industry	Country	S&P Global distinction	S&P Global industry mover	Page
Wärtsilä Oyj Abp	Machinery and Electrical Equipment	Finland			141
Waste Management, Inc.	Commercial Services & Supplies	United States	●		114
Welltower Inc.	Real Estate	United States			152
Wendel	Diversified Financial Services and Capital Markets	France			121
Wesfarmers Limited	Retailing	Australia			155
Westpac Banking Corporation	Banks	Australia			107
WestRock Company	Containers & Packaging	United States		●	119
Weyerhaeuser Company	Real Estate	United States			152
WH Smith PLC	Retailing	United Kingdom			155
Whirlpool Corporation	Household Durables	United States			133
WIN Semiconductors Corp.	Semiconductors & Semiconductor Equipment	Taiwan			156
Wipro Limited	IT services	India	●		138
Woodside Petroleum Ltd	Oil & Gas Upstream & Integrated	Australia			147
Worldline S.A.	IT services	France			138
Yamaha Motor Co., Ltd.	Automobiles	Japan			105
Yokogawa Electric Corporation	Electronic Equipment, Instruments & Components	Japan	●		124
YPF Sociedad Anónima	Oil & Gas Upstream & Integrated	Argentina			147
Yuanta Financial Holding Co., Ltd	Diversified Financial Services and Capital Markets	Taiwan	●		121
Yum China Holdings, Inc.	Restaurants & Leisure Facilities	China	●	●	154
Yum! Brands, Inc.	Restaurants & Leisure Facilities	United States			154
Z Holdings Corporation	Interactive Media, Services & Home Entertainment	Japan		●	137
Zurich Insurance Group AG	Insurance	Switzerland	●		136

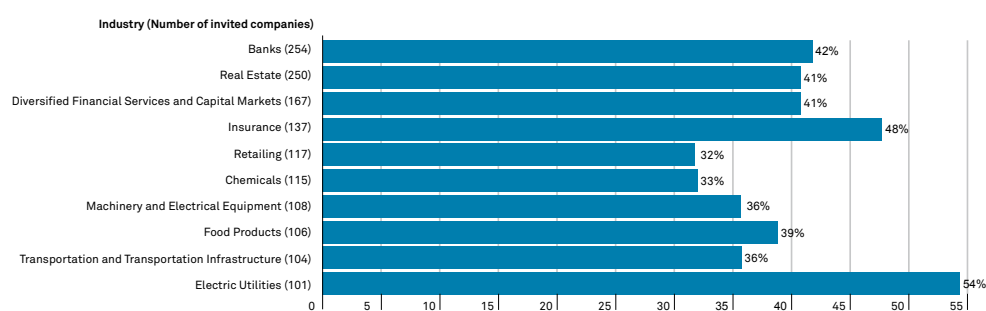
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The S&P Global Corporate Sustainability Assessment

The Corporate Sustainability Assessment (CSA) is a comprehensive annual evaluation of companies' sustainability practices and performance, with a total coverage of over 10,000 of the world's largest companies. The CSA is one of the longest standing ESG rating methodologies worldwide, dating back to 1999. It assesses companies on the basis of 80–120 industry-specific questions across 61 industries.

Over the years, participation rates in the S&P Global Corporate Sustainability Assessment have continuously risen – with a record number of 1,428 companies¹ taking part in this year's assessment – indicating that sustainability is increasingly rising to the top of corporate agendas and becoming more mainstream. Companies that do not actively participate are assessed based on publicly available information.

Participation rates in 10 largest CSA industries by number of invited companies



In SustainAbility's Rate the Raters 2019 report, companies rated the CSA as the most useful ESG assessment thanks to its high level of transparency, its sector-specific view of material ESG issues, and its forward-looking incorporation of emerging sustainability risks and opportunities. In the 2020 report, which looked at the investor perspective, the CSA came out top among the highest-quality ratings and was cited as a "strong signal of sustainability." The CSA focuses on financially material economic, environmental, and social factors that are relevant to companies' success, but that are under-researched in conventional financial analysis. Every year, the CSA undergoes rigorous methodological review to ensure that both the most current and emerging material sustainability topics are reflected. This challenges companies to report on topics of interest to investors that often lack disclosure today.

different divisions (S&P Global Ratings, S&P Dow Jones Indices and S&P Global Market Intelligence). For over 20 years the results of the CSA have been used for the annual rebalancing of the iconic Dow Jones Sustainability Indices (DJSI). CSA scores are used in numerous other S&P Dow Jones indices including the S&P 500 ESG.

S&P Global ESG Scores are made available to the global financial markets via S&P Global Market Intelligence platforms, robustly linked to financial and industry data, research and news, providing integral ESG intelligence to make business and financial decisions with conviction.

Companies' data and benchmarks from the CSA can now feed seamlessly into the analysis for S&P Global Ratings ESG Evaluation should companies want a forward-looking long-term opinion of their ability to handle future risk and opportunities.

Learn all about S&P Global's ESG Solutions: www.spglobal.com/ESG

¹ This includes 1386 companies actively participating in the CSA campaign for companies eligible for Dow Jones Sustainability Indices and 42 companies that contracted the CSA as a service.

As of January 2020, the CSA is issued by S&P Global, where it forms the foundation of company ESG disclosure to S&P Global for financially material ESG factors and will underpin the ESG research across our

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A scenic landscape photograph of a river valley. The foreground shows a dirt road winding through a valley with several large, bare, light-colored trees. The middle ground features a river flowing through the valley, with more trees and vegetation on the banks. The background consists of rolling hills under a clear, bright sky. The overall color palette is dominated by earthy tones and the blue of the sky.

S&P Global Switzerland SA

Zurich Branch,
Josefstr. 218
8005 Zurich,
Switzerland

T: +41 44 529 51 60

csa@spglobal.com