

TRANSPARENCY TO TRANSFORMATION: A CHAIN REACTION

CDP Global Supply Chain Report 2020

FEBRUARY 2021



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FOREWORD



Climate change is a constant threat to the global economy and humanity more broadly. Business must do our part to address the problem in our own operations and in the way we work with our supply chains. That is the focus we need to create a better future.

Ruth Porat
Chief Financial Officer
Alphabet

2020 brought us the unprecedented global crisis of the COVID-19 pandemic. The tragedy and challenge of COVID has been layered on top of the crisis that we recognize as climate change. Both threaten the global economy and lives worldwide, both demand strong action from the business community. We have seen the leadership role businesses have taken in the pandemic response. Business has increasingly come to focus on the actions needed to address climate change, both through individual corporate operations and those in their supply chains.

At Alphabet, we take our climate obligations seriously, and have long

made climate a focus of everything we do: how we run our data centers, build our offices and products and how we work with our supply chain. We have been carbon neutral since 2007, and in 2019 we matched 100% of our electricity consumption with renewable energy for the third year in a row.

However, we know that minimizing our own footprint is insufficient to address a problem of this magnitude. Our supply chain is part of our strategy for comprehensive climate action. As just two examples of our supply chain work; last year all of the new Pixel and Nest products were designed with recycled material, and today shipping of Google hardware to and from our direct customers is carbon neutral.

Although we are still learning and adapting, we believe lessons from past crises, most recently the pandemic, can provide direction as we take fast action on climate change. Specifically, data-driven solutions, collective action, and stakeholder engagement will be critical.

First, we should build consensus around solutions grounded in data. Drilling down on data is one of our best tools, and enables us to accurately gauge the magnitude of the problem. CDP Supply Chain is a core part of our efforts at Alphabet to build data-driven solutions to understand our total carbon footprint. With CDP, we can measure and influence how our suppliers integrate climate change into their operations. In 2020, 96% of our surveyed suppliers reported their carbon footprint, and 75% shared their targets to reduce it. This visibility allows us to better select, support, and partner with our suppliers on their climate-related targets.

Second, COVID has proven that collective action is critical to solving urgent, global challenges. No group

can go it alone – government, communities, business and individuals all must do their part. For example, Renewable Energy Buyers Alliance (REBA) and the RE100 initiative help us work with hundreds of other businesses and non-profit organizations to advocate for renewable power. These efforts align with our efforts toward greening energy grids worldwide, such as our commitment to add 5GW of clean energy in key manufacturing regions through renewable energy investments.

Finally, we must have a clear understanding of how we can influence our partners and stakeholders to push their climate work further. At Alphabet we are committed to driving change through our work with suppliers, and need our suppliers' ambition to match our own. To nudge that along, we have recently announced a plan to develop an open-source collaborative platform to drive down the cost of renewable energy, making it accessible to more suppliers and companies.

We are committed to going even further. Looking forward, we aim to operate on 24/7 carbon-free energy by 2030, and help one billion people live more sustainably through our products. We will also continue rolling out technology to industry partners to drive climate action at scale.

There is so much more to be done, of course. We must look outside the edges of our own businesses. We need our supply chain partners, and of course, they need us, and our climate priorities can and should be part of their climate priorities. The world is out of time on this topic, and this simple focus and prioritization is essential. We must act now if we are going to avert the worst consequences of climate change.

EXECUTIVE SUMMARY

Response rate of suppliers:



52%

Climate



57%

Forests



59%

Water

To understand the environmental impact of a company's economic activity, it is not enough to look at its direct emissions and risks. The entire value chain must be engaged to evaluate and improve its performance.

This report explores the state of environmental risks in supply chains and what approaches businesses are taking to mitigate them.

Data is drawn from over **8,000** companies at all stages of the value chain who disclosed through CDP in 2020. These companies responded to requests for transparency from **154** major buyers who are members of the CDP Supply Chain program. Together these buyers spend **US \$4.3 trillion** in procurement annually and ask suppliers to provide data via CDP's disclosure platform to help them understand and address the environmental impacts and risks of their value chain.

Companies must engage their supply chains and address environmental risk to remain competitive and resilient



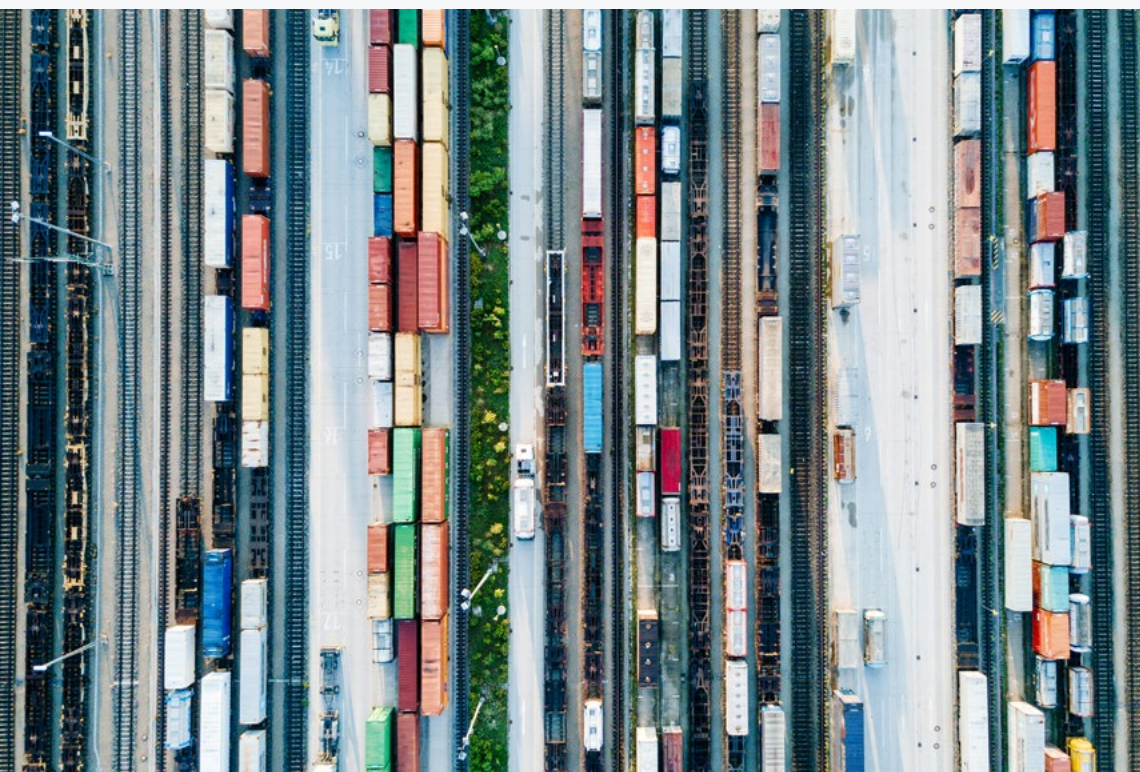
US\$1.26 tn

Total financial impact reported by suppliers due to environmental risks (climate change, deforestation and water insecurity) expected in the next five years.



US\$120 bn

A subset of the environmental risks will lead to direct costs of US\$120 billion within five years which are likely to be passed up the chain to buyers.



Suppliers are cutting their own emissions, but must improve engagement in their own supply chains.



619 million

In aggregate, suppliers undertook activities reducing GHG emissions by **619 million** metric tons and saved **US\$33.7 billion** in the process.

The scale of impact in the supply chain is increasingly being recognized by suppliers



11.4x higher

Supply chain emissions are on average **11.4** times higher than operational emissions, more than double previous estimate, due to more comprehensive emissions accounting.



7%

of the companies who completed the CDP climate questionnaire made it onto the CDP Supplier Engagement Rating Leaderboard.



1,000+

Setting targets to reduce emissions throughout the value chain (Scope 3) is becoming a new business norm. This is only achievable with strong supply chain engagement. **1,000+** companies have set or committed to set **science-based targets**, which usually require Scope 3 targets.

Percentage of suppliers driving upstream change in their own supply chain



37%

Climate



26%

Forests

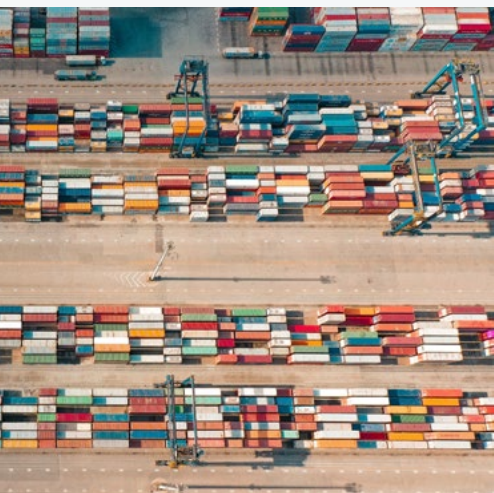


18%

Water



ABOUT THIS REPORT



This report has been written by CDP, using CDP's Supply Chain program data submissions to evaluate the activities of reporting organizations as a group, and to identify meaningful insights about the supply chain impacts on setting science-based targets, zero-deforestation and water security targets.

The CDP Supply Chain program, representing **154** member organizations with **US\$4.3 trillion** in annual procurement spend, requested that suppliers report to members on their current and future risks and opportunities related to these environmental issues.

Suppliers responded to standardized questionnaires on climate change, forests and water security: a full version and a simplified version made available for organizations with an annual turnover of less than US\$250 million or €250 million, which can also be used by larger organizations disclosing for the first




time. In total **15,637** companies were invited to participate, with over **8,098** unique responses received.

Most respondents provided information on climate change, with **8,033** disclosing suppliers. A smaller number of businesses were asked to respond on forests and water issues, as these are newer additions to the CDP Supply Chain program. The Water questionnaire, introduced in 2013, was sent to **4,108** companies with **2,449** completing the questionnaire. The Forest questionnaire, introduced in 2017, was sent to **788** companies with **448** completing the questionnaire. The analysis in this report is representative of the CDP Supply Chain program data only.







During analysis responses have been assessed and a small number of outlier data points have been manually excluded to avoid reporting misleading statistics.

CDP Supply Chain members¹




Premium members

Microsoft Corporation	
Stanley Black & Decker, Inc.	
Walmart, Inc.	

Lead members

Alphabet, Inc.	
Bank of America	
Barclays	
Bayer AG	
Cementir Holding S.p.A.	
Dell Inc.	
Electrolux	
J Sainsbury Plc	
JT International SA	
Juniper Networks, Inc	
Kellogg Company	
Koninklijke Philips NV	

The LEGO Group	
LinkedIn	
L'Oréal	
NRG Energy Inc	
Ørsted	
Philip Morris International Inc.	
Signify NV	
Target Corporation	
The Coca-Cola Company	
Virgin Money UK Plc	
Wells Fargo & Company	

-  Climate change member
-  Forests member
-  Water member

¹ Not all members are publicly listed here

CDP Supply Chain members¹

(continued)

Corporate members

Accenture	▼	Diageo Plc	▼
Acer Inc.	▼	Eaton Corporation	▼
Aguas Andinas SA	▼	Empresas CMPC S.A.	▼
Airbus SE	▼	Fiat Chrysler Automobiles NV	▼
Ajinomoto Co. Inc.	▼	FIRMENICH SA	▼
Altria Group, Inc.	▼	Flowers Foods	▼
Amdocs Ltd	▼	Ford Motor Company	▼
Anheuser Busch InBev	▼	Fujian Sunner Group	▼
Arcos Dorados	▼	Fujitsu Limited	▼
ARKEMA	▼	General Motors Company	▼
AT&T Inc.	▼	Givaudan SA	▼
Avianca Holdings S.A.	▼	Grupo BIG	▼
Banco Bradesco S/A	▼	Grupo Bimbo, S.A.B. de C.V.	▼
Banco do Brasil S/A	▼	Grupo CCR	▼
BMW	▼	Grupo Santander Brasil	▼
Braskem S/A	▼	GSMA	▼
Bristol-Myers Squibb	▼	Hewlett Packard Enterprise Company	▼
British American Tobacco	▼	Honda Motor Co., Ltd.	▼
BT Group	▼	Honda North America, Inc.	▼
Caesars Entertainment	▼	HP Inc	▼
Caixa Econômica Federal	▼	HSBC Holdings Plc	▼
CANPACK Group	▼	Husqvarna AB	▼
CBRE Group, Inc.	▼	Imperial Brands	▼
Cellnex Telecom SA	▼	Intel Corporation	▼
Chunghwa Telecom	▼	International Flavors & Fragrances Inc.	▼
CIA ULTRAGAZ S/A	▼	Iochepe-Maxion S.A.	▼
Cisco Systems, Inc.	▼	Itaú Unibanco Holding S.A.	▼
Clorox Company	▼	Jaguar Land Rover Ltd	▼
CNH Industrial NV	▼	Johnson & Johnson	▼
Colgate Palmolive Company	▼	KAO Corporation	▼
Croda International	▼	KPMG UK	▼
CVS Health	▼	Los Angeles Department of Water and Power	▼
Daimler AG	▼		
Deutsche Telekom AG	▼		

Lead members joining for 2021

Ahold Delhaize	▼
Estee Lauder Companies Inc	▼

Corporate members joining for 2021

Advance Auto Parts, Inc.	▼
Capital One Financial	▼
Keurig Dr Pepper	▼
Moody's Corporation	▼
Senior PLC	▼
Trimble Inc.	▼

¹ Not all members are publicly listed here

CDP Supply Chain members¹ (continued)

Corporate members (continued)

MasterCard Incorporated	▼	Samsung Electronics	▼
McDonald's Corporation	▲▼	Santa Catarina	▼
MetLife, Inc.	▼	Sekisui Chemical Co.,Ltd.	▼
Metro AG	▲▼	Sky plc	▼
Metropolitan Transportation Authority (MTA)	▼	Snam S.p.A	▼
Michelin	▲▼	SSE	▼
Ministry of the Environment, Government of Japan	▼	Stéarinerie Dubois	▲▼
Movida Participacoes Sa	▼	Swisscom AG	▼
MRV Engenharia e Participações	▲▼	Symrise AG	▲▼
National Grid PLC	▼	TD Bank Group	▼
Naturgy Energy Group SA	▼	Telstra Corporation	▼
NEC Corporation	▼	The Allstate Corporation	▼
NHS England and NHS Improvement	▼	Toyota Motor Corporation	▲▼
Nissan Motor Co., Ltd.	▲▼	U.S. General Services Administration	▼
Nokia Group	▲▼	Vale SA	▼
Nordstrom, Inc.	▼	Varian Medical Systems, Inc	▼
One Jeanswear Group	▼	Velux A/S	▼
PepsiCo, Inc.	▼	Virgin Management Limited	▼
Pirelli	▼	Visa	▼
Prudential Financial, Inc.	▼	VMware, Inc.	▼
Prysmian SpA	▼	Vodafone Group	▼
Restaurant Brands International	▲▼	Volkswagen AG	▲▼
Royal Bank of Canada	▼	Volkswagen AG	▼
S Group	▼	Volvo Car Group	▼
S.C. Johnson & Son, Inc.	▲▼	Wal Mart de Mexico	▲▼
		Western Digital	▲▼
		Yokohama Rubber	▼
		Zurich Insurance Group Ltd.	▼

¹ Not all members are publicly listed here

TACKLING RISK, BUILDING RESILIENCE:

Unlocking the power of your supply chain



US\$1.26 tn

of revenue at risk reported by suppliers within five years



US\$120 bn

in increased costs in the next five years due to environmental supply chain risks could be faced by corporate buyers

Environmental risks are material for business. Addressing these through supply chain engagement is vital for companies to be competitive and resilient in the changing market and to build back better from COVID-19.

In 2020, over **8,000** suppliers disclosing through CDP reported that **US\$1.26 trillion** of revenue is likely to be at risk over the next five years due to climate change, deforestation and water insecurity. The anticipated financial risk covers potential loss of revenue due to changing consumer preferences, loss of access to capital, and increased operational costs. The increased costs alone amount to as much as **US\$120 billion**, and are caused by physical environmental impacts as well as addressing regulation and market changes.

Financial risks have a domino effect throughout the chain and corporate buyers will pay the price. Most supply chains run on very tight margins with suppliers often passing cost increases on to their customers.

Major buyers could see a hike of **US\$120 billion** in costs in the next five years, due to these environmental risks in their supply chains.

And that is only a current snapshot.

Environmental risks are set to increase as the planet, society and economy changes.

Intensifying climate change and environmental degradation will increase the physical risks. Society will adapt in response, raising awareness, spurring action and increasing reputational and regulatory risks. So companies that fail to manage the environmental risks in their supply chain will also face greater reputational and regulatory risks.

Managing the direct environmental impact of your operations is no longer enough. Businesses must put the spotlight on - and engage - their supply chains.

Laggards that fail to take responsibility for supply chain impacts and risks will fall behind, while **leaders who manage and reduce environmental risk through supply chain collaboration will not only be more competitive today, but will be more resilient for the economic shifts of tomorrow.**

These leading companies include CDP's Supply Chain members.

The CDP Supply Chain program brings together a diverse group of more than **150** major purchasing organizations from around the world, with an enormous **US\$4.3 trillion** in combined procurement spend. These companies work with their suppliers to encourage disclosure, transparency, and continuous environmental improvements, thus building resilient supply chains.



These members are committed to driving action by integrating data into their purchasing processes. In 2019 **73%** of CDP Supply Chain program members when surveyed said they expect to deselect suppliers based on inadequate environmental performance.²



Additionally, **65%** of surveyed members in 2019 reported using environmental metrics, including CDP data, in their supplier relationship management processes, with a further **30%** saying they plan to reach that point in the next two years.³



Companies are increasingly asking their suppliers to match their ambition, reduce their greenhouse gas emissions, safeguard water resources and protect forests, through setting and achieving ambitious targets.



94% of companies with [science-based targets](#) include scope 3 emissions.



We want to do the right thing for the world around us and in 2020 we were the first Australian company to join CDP Supply Chain. This partnership helped us deliver training, tools and support to our strategic suppliers as they considered and disclosed their environmental impacts. We're now using this information to understand the volume of emissions being released from the products and services we purchase from our suppliers and to develop ambitious strategies together to further reduce them. We're buoyed by the enthusiasm and commitment of our suppliers and, while we've got a long way to go, we will reduce our impact on the environment.

*Alexandru Butiri, Chief Procurement Officer, **Telstra Corporation Ltd***



The BMW Group has set a clear target to reduce CO₂ emissions by 20% for its supply chain by 2030, compared to 2019. **Our supplier network plays an integral part in meeting these goals.** We have been a member of CDP Supply Chain since 2014 in order to create transparency around the CO₂ emissions of our key suppliers and engage with them to tackle climate risks and cut emissions. The BMW Group itself has reported through CDP for years and is proud to achieve a place on the 'A List' in 2020. We also use CDP company scores for our suppliers as an engagement tool.

*Wolfgang Obermaier, SVP Indirect Goods and Services, Raw Material, Production Partners, **BMW***

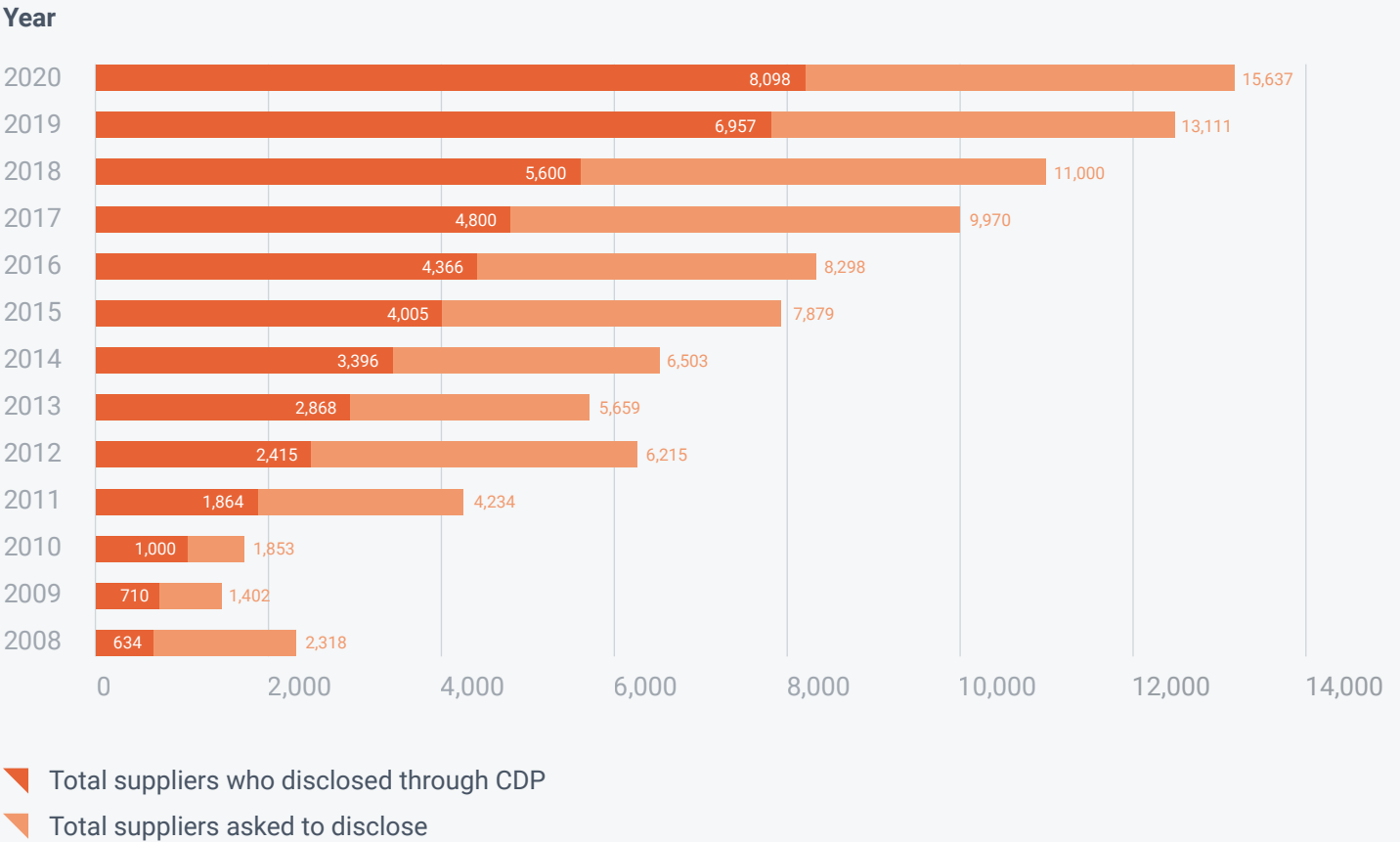


² This statistic is taken from a poll conducted for the [2019 CDP Supply Chain report](#)

³ This statistic is taken from a poll conducted for the [2020 CDP Supply Chain report](#)

A GROWING MOVEMENT

Growth in CDP Supply Chain disclosures, 2008 – 2020



CLIMATE:

Encouraging trends, insufficient action



Sekisui Chemical Group aims to achieve net-zero GHG emissions from its business operations by 2050, and we have set a science-based target which includes a 27% reduction of our scope 3 emissions by 2030. Sekisui Chemical Group engages in reducing GHG emissions throughout the supply chain by monitoring emissions at every stage, from raw material procurement to development, production, transportation and use of products.

The amount of emissions caused by purchased goods and services account for the largest proportion of our GHG emissions in Scope 3, at 50% or more. To reduce these indirect emissions, we will review the selection criteria when adopting new materials. In addition, we are engaging with our suppliers by utilizing the CDP supply chain program, in order to identify the emissions reductions of our suppliers at the stage of raw materials production.

Sekisui Chemical Group

Decarbonizing supply chains is the key to meeting ambitious climate goals

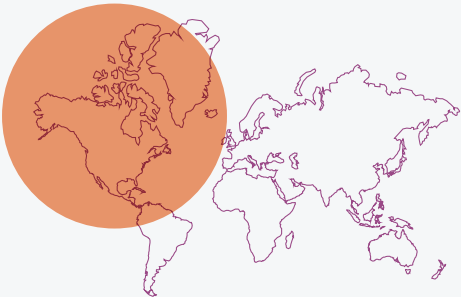
Despite the profound global disruption of COVID-19, CDP Supply Chain members continued to drive climate transparency and action in supply chains.

The number of requests for supplier disclosure from CDP Supply Chain members grew by **19%** to more than **15,000** in 2020 - a result of new members but also of existing members deepening their engagement with their supplier bases.

Over half of requested suppliers responded. The information received showed progress in cutting emissions, and thereby costs, but also revealed the size of the challenge as suppliers looked more closely at their own supply chains.



Climate action is improving, with suppliers demonstrating increased emissions reductions



Suppliers represent combined 2018 greenhouse gas emissions of the US and Canada



619 MtCO₂e

of emissions were reduced by suppliers from 2019-2020...



159

...equivalent to the annual emissions of 159 coal power plants



US\$33.7 bn

of savings from suppliers' emissions reductions

Suppliers reported combined savings of **US\$33.7 billion** in 2020 through actively cutting emissions. This is a **67%** increase in cost savings compared to 2019.

Suppliers undertook activities that cut emissions by 619 million metric tons of CO₂e in the last year.

The total direct emissions by suppliers was **6,714 metric tons (MtCO₂e)**, roughly equal to the combined 2018 greenhouse gas emissions of the United States and Canada.

The ability to cut costs by reducing emissions would be a strong argument for action, even if the risks associated with failure to act were not as pressing as they are. Suppliers are treating the issue as a priority, with **72%** of responding companies reporting that issues around climate change receive board-level oversight.




This is easily justified by the scale of the problem. In 2020, suppliers reported that they were exposed to some **US\$1.21 trillion** in potential financial impact related to climate change.



Toyota Motor Corporation became a CDP supply chain member in 2016 to support continuous environmental initiatives conducted with our suppliers. The program enables us to determine our supplier's risks, opportunities and their initiatives on climate change. According to the spirit of mutual benefit based on mutual trust, we regularly create opportunities for environmental communication by holding briefing sessions and response guidance, where we share information on social trends and Toyota's initiatives and provide feedback on response results. These activities would encourage our suppliers to continue improving their environmental performance and disclosure. Through such close collaboration with our suppliers, we received a 96% response rate for CDP climate change 2020, which accounts for approximately 84% of our total purchasing value in Japan. Through our continuous efforts, we were pleased to report that approximately two-thirds of our suppliers reduced their CO₂ emission intensity (total emissions/net revenues) in 2020 compared to the previous year.

Achieving the SDGs, including environmental sustainability, is a huge challenge for us all. To contribute to this shared goal, every Toyota person all over the world will be resolute in "Producing Happiness for All". We also wish to take a strong step forward with our suppliers.

Toyota Motor Company

Risk type		# of reported risks	Risk US\$
	Acute physical	1,981	319,334,077,747.44
	Market	1,553	741,870,472,483.50
	Emerging regulation	1,549	151,696,170,484.16

Suppliers are turning the spotlight on their own supply chains.

In 2020, suppliers reported upstream emissions that were, on average, **11.4 times** greater than those produced through their direct operations.

This is a big jump from 2019, when the reported upstream emissions were five and a half times greater than operational emissions. This is not an indication of an increase in supply chain emissions. Rather, this statistic promisingly shows that more suppliers are measuring emissions in their supply chain (known as scope 3 emissions), and accounting for those emissions over the full lifecycle of their products or services in line with the [GHG protocol](#).

These figures underline that real climate leadership cannot be achieved without tackling scope 3 impacts.

Supplier engagement continues to remain the exception rather than the norm.

Measuring scope 3 emissions is only a first step, however. Despite the quantification of risk exposure and upstream emissions, only **37%** of suppliers are taking action and engaging with their own suppliers, down from **39%** in 2019.



11.4x higher

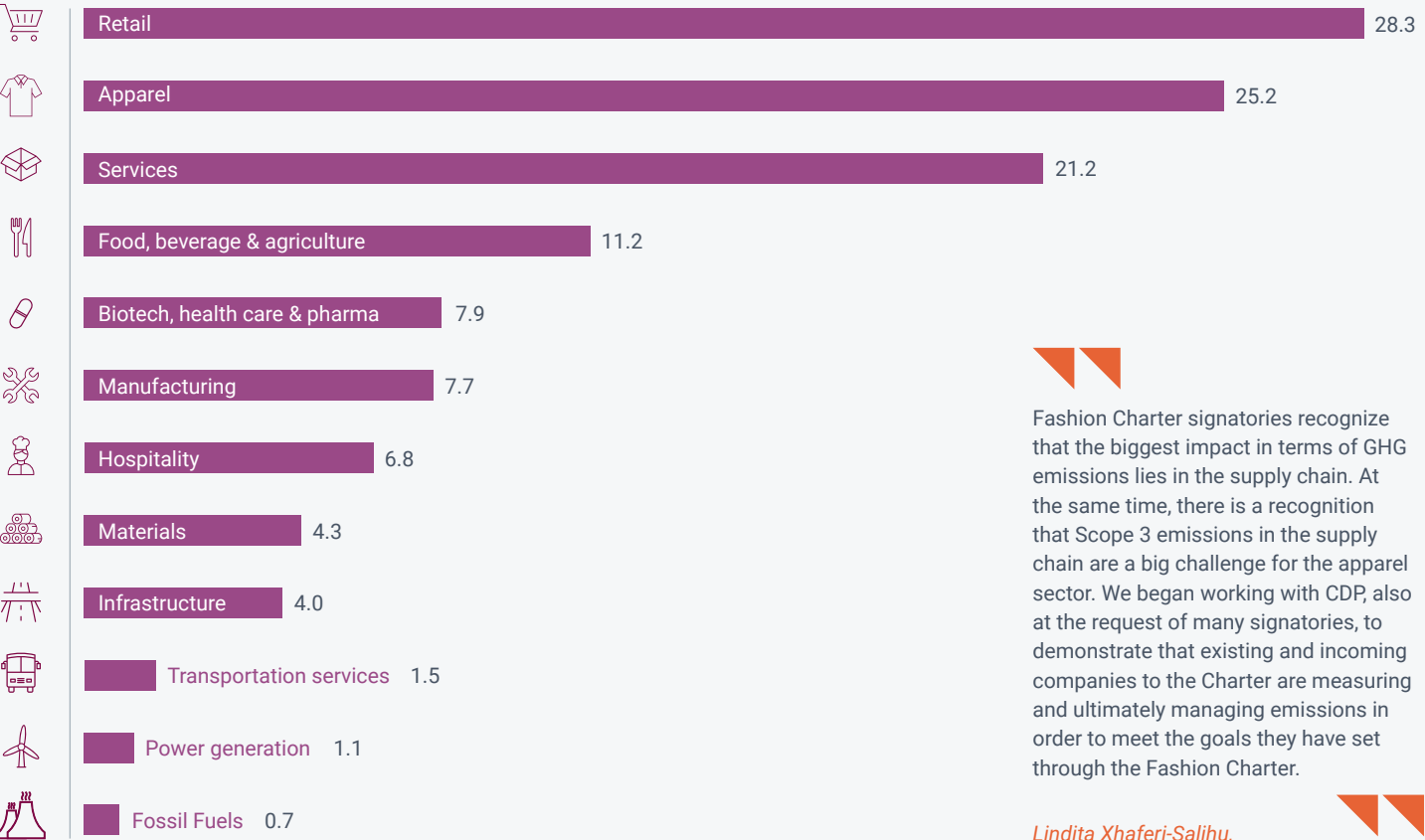
Supply chain emissions are 11.4 times higher than operational emissions



37%

of suppliers are taking supply chain action themselves, down from 39% in 2019

Upstream emissions: scope 3 emissions are on average 11.4 times higher than operational emissions



Fashion Charter signatories recognize that the biggest impact in terms of GHG emissions lies in the supply chain. At the same time, there is a recognition that Scope 3 emissions in the supply chain are a big challenge for the apparel sector. We began working with CDP, also at the request of many signatories, to demonstrate that existing and incoming companies to the Charter are measuring and ultimately managing emissions in order to meet the goals they have set through the Fashion Charter.

Lindita Xhaferi-Salihi,
Sectors Engagement Lead,
UN Climate Change

Average of final ratio (Scope 3 [supply chain emissions] : Scope 1 +2 [operational emissions and direct emissions])



As a responsible business, reducing greenhouse gas emissions in our supply chain supports our ambition of reaching net-zero by 2050 to deliver a clean energy future for our customers. As a CDP supply chain member, National Grid uses CDP scores to maintain transparency and accountability in meeting customer and shareholder expectations to address climate change. We're proud to be on the "A List" and are committed to keeping this good work going.

*Vivienne Bracken, Chief Procurement Officer,
National Grid*

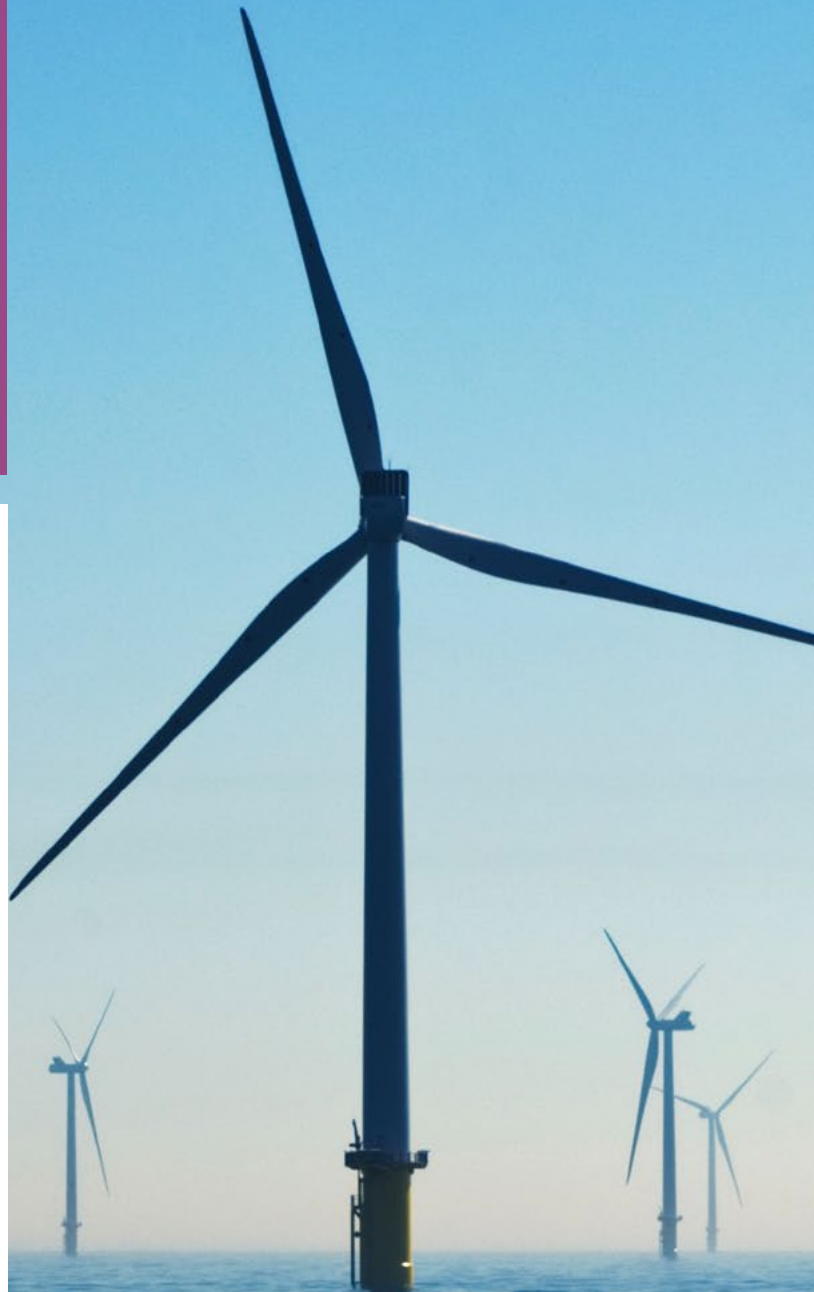


The climate crisis means we must accelerate change. This means taking action across our value chain as we pursue bold purpose and sustainability ambitions – like our ambition to become Climate Positive before 2050 and our science-based targets.

Achieving this requires collaboration not just within Givaudan, but with our suppliers, customers, stakeholders, colleagues and partners. That's why engagements like our CDP supply chain membership are so important.

As businesses re-examine their role in society, we must be resilient and prepared for the risks of a constantly-changing world. Now more than ever, businesses must come together and lead the way as a force for good.

*Willem Mutsaerts, Head of Global Procurement
and Sustainability, **Givaudan***





For more than 10 years, The Estée Lauder Companies has reinforced its commitment to environmental stewardship by disclosing through CDP to ensure consistent, transparent reporting around its environmental impact. Now, in this critical decade for the planet, the company is taking even more decisive action on climate change.

As we take on the broader scope of addressing carbon impact beyond the company's direct operations, we're excited to deepen our collaboration with CDP by becoming a Supply Chain member. With ambitious science-based targets for Scope 3 emissions at the forefront of our climate agenda, the CDP Supply Chain program will support the implementation of integrated solutions for emissions reduction across the company's supply chain, and foster joint value creation with supply chain partners and third-party manufacturers.

Building on the successes and learnings of achieving net-zero carbon emissions and 100% renewable electricity across our direct operations, the road ahead could not be more clear: resilient, low carbon supply chains are critical to ensuring a healthy, beautiful planet for generations to come.

*Gregory F. Polcer, Executive Vice President, Global Supply Chain, **The Estée Lauder Companies***



Bayer is committed to reach net-zero value chain emissions, by 2050 at the latest. To achieve that, we've set science-based targets: we'll reduce scope 1 and 2 emissions by 42% by 2030 - which is in line with 1.5°C, the more ambitious goal of the Paris Agreement. Likewise, we'll reduce our main scope 3 emissions by 12.3%. Overall, switching fully to renewable energy is key. Addressing scope 3 - the biggest share of our footprint - is a challenge: data availability and quality is poor and comparability often weak. Plus, it takes time to engage with suppliers on this issue. To overcome these challenges and create impact at a larger scale, we became a member of CDP supply chain and we collaborate with initiatives such as Together for Sustainability (TfS) and the Pharmaceutical Supply Chain Initiative (PSCI).

*Thomas Udesen, Executive Vice President and Chief Procurement Officer, **Bayer***



As a CDP Supply Chain member, we at Samsung Electronics hope to see more of our suppliers undertake actions to reduce emissions year on year. In 2020 we asked our key suppliers to disclose through CDP and received responses from 163 suppliers, with a response rate at 71%. We also provide incentives to suppliers to participate in CDP disclosure and set carbon reduction targets. In addition, Samsung Electronics operates joint educational seminars regularly with CDP, which share experiences to help suppliers reduce electricity, gas and carbon emissions. We will continue our efforts to engage with more supply chain partners by making it easy to participate in carbon emission reduction activities.

*Partner Collaboration Center,
Samsung Electronics Co., Ltd*



FORESTS:

Supply chains without chainsaws



Ten years ago, we started our first steps on our journey to protect forests, at our production site in the heart of a protected French Natural Park.

The path has been rich in challenges, but with the feedback of our most engaged customers and suppliers we have been able to progress towards zero-deforestation.

Since our RSPO SCCS certification, through our 'No Deforestation, No Peat, No Exploitation: Driving positive impact for local communities and Inclusion of smallholders' policy, we have continuously improved our level of requirements all along the supply chain.

There is no doubt that we need to accelerate action against deforestation, due to the urgency of addressing global climate change. We also believe that deforestation is linked with acts of corruption and violation of human rights which have to be collectively tackled all along the supply chain in accordance with the Principles of the United Nations Global Compact. This is a shared responsibility between the consuming and producing countries.

Consequently, we are engaged in collective initiatives allowing us to increase traceability and transparency of forest risk commodities. For us, these are the key conditions to reach zero-deforestation. Sharing experiences and data through CDP Supply Chain with our suppliers is a unique opportunity and the way to succeed in the transformation of the agricultural commodities supply chain.

As the world still needs to be fed, sustainable agricultural practices must be mainstreamed among small local farmers, with knowledge-sharing of best practices.

*Ghislaine Auméras Broch,
Head of Sustainability,
Stéarinerie Dubois*



Deforestation: a growing risk in a post-pandemic world

In response to the global pandemic, economic recession, climate change and the biodiversity crisis, the need to transition to a sustainable and resilient deforestation-free future has never been greater. The precise pathway of COVID-19 is not yet established, but [deforestation is almost certainly an important part of the journey.](#)⁴

Protecting and restoring forests was already high on the global agenda, as a critical tool for meeting the goals of the Paris Agreement and achieving the UN Sustainable Development Goals. Continued loss of these carbon sinks, along with the habitat and biodiversity they contain, will only exacerbate both climate change and its impact.

Companies must act rapidly to ensure they identify and eliminate unsustainable deforestation practices within their supply chain, as well as identifying and managing inevitable forest risk based on commodity consumption.

⁴ See also: [Bats, Coronaviruses, and Deforestation: Toward the Emergence of Novel Infectious Diseases?](#) Aneta Afelt, Roger Frutos, and Christian Devaux



448

suppliers disclosing on forests at the request of their buyers



US\$5bn

in reported deforestation-related risks



236

suppliers reported sourcing commodities from forest risk countries



5x

more suppliers (448 out of 788) responded when asked to disclose on forests, compared to the pilot year in 2017

Commodities driving deforestation: Cascading awareness

The CDP Supply Chain program began covering forests in 2017. Since then, the number of members has more than doubled from **8 to 19**, as awareness of the urgency of the issue has grown. These members are engaging with suppliers involved in the production and use of forest risk commodities linked to deforestation (including timber, palm oil, cattle products, soy and rubber).

Between 2001 and 2015, **27%**⁵ of global forest loss can be attributed to deforestation through permanent land use change for commodity production, including beef, soy, palm oil, and wood fiber.

Members requested disclosures on forests from **788** suppliers, receiving **448** responses - a fivefold increase since the pilot year in 2017.

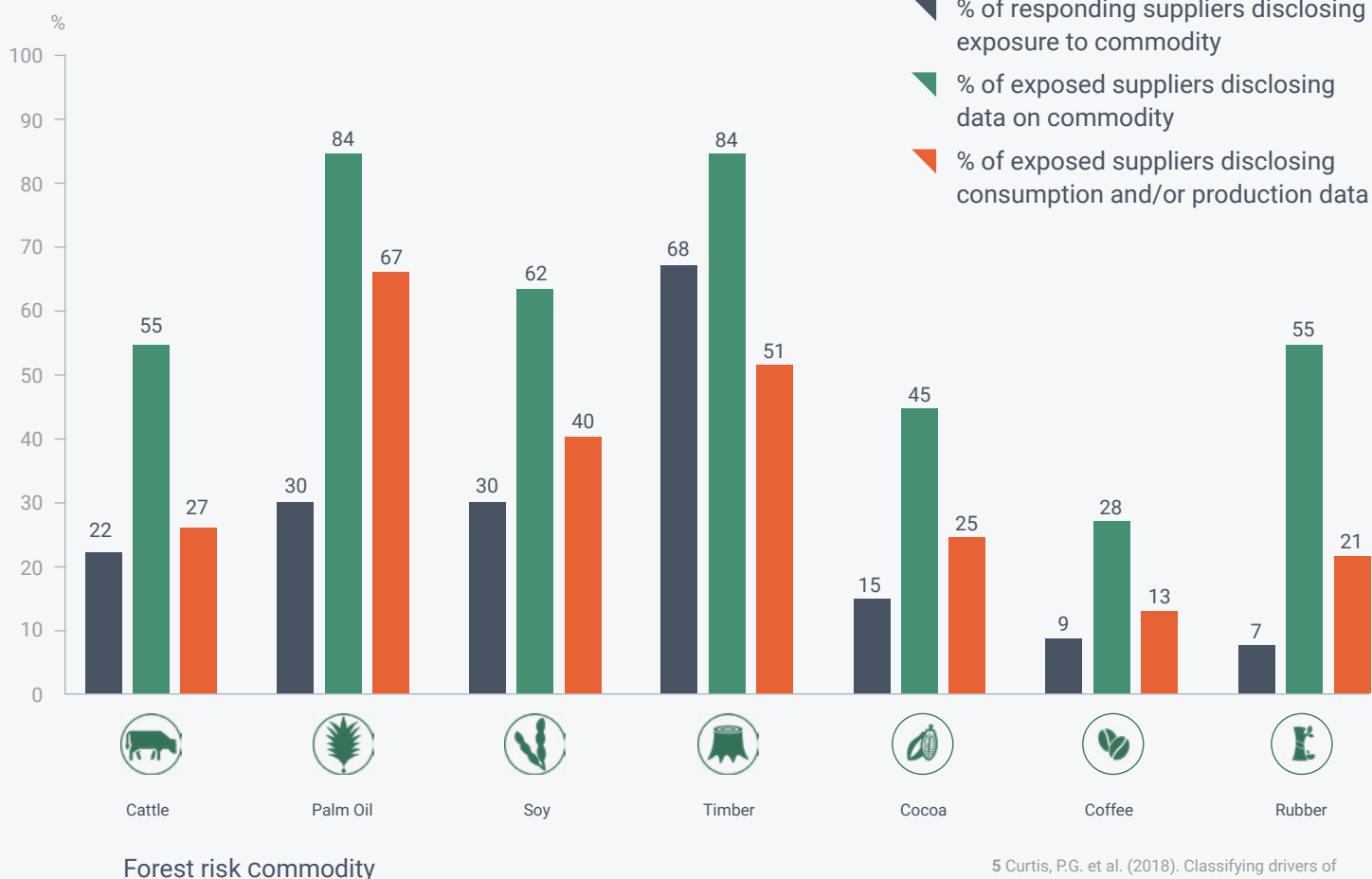
236 suppliers reported sourcing commodities from forest risk countries. By increasing their engagement with suppliers from high-risk regions, companies can expand capacity building efforts, increase transparency, disseminate best practices and reduce their deforestation risks.

Suppliers were asked to report on the forest risk commodities that they produce or consume. The responses show a huge knowledge gap between the various forest risk commodity sectors. **84%** of timber products suppliers disclosed data, while just **28%** of coffee suppliers disclosed. These numbers drop further when suppliers were asked to drill down to consumption and production data.

This demonstrates the pressing need for companies to continue to request this information from their suppliers, an essential first step in understanding and minimizing their risk exposure.

Deeper knowledge is even more lacking, with just **26%** of suppliers able to trace even part of their forest risk commodities back to the forest, plantation or farm where they originated. Furthermore, many found it difficult to measure and report their risk exposure. Although **73%** of suppliers said they had undertaken a forest related risk assessment, the internal skills and capabilities to address those risks remain limited.

Despite this incomplete picture, **49%** of suppliers still reported a total potential financial impact of **US\$5 billion** associated with risks linked to the production, consumption and trade of forest risk commodities.



⁵ Curtis, P.G. et al. (2018). Classifying drivers of global forest loss. Science 361:1108-1111. DOI: 10.1126/science.aau3445

Strengthening supplier engagement

The coordinated action of the CDP Supply Chain program is clearly having an impact. In 2020, its 19 forests members had **130** suppliers (**17%** of total sample) in common, despite covering diverse sectors. Supplier companies that received disclosure requests from multiple members had a much higher response rate of **75%**, compared with those that only received requests from a single member at **57%**. Changing supplier behavior is best achieved with clear and consistent expectations from customers. By integrating data and insights into procurement decisions, CDP Supply Chain members are accelerating the pace at which this change will happen.



84%

of timber products suppliers disclosed data, while just **28%** of coffee suppliers disclosed



26%

Only 26% of suppliers are able to trace even part of their forest risk commodities back to the forest, plantation or farm where they originated

Promoting collective action

Hundreds of companies had made pledges to eliminate deforestation from the production of agricultural commodities by 2020, as part of a collective commitment made by the Consumer Goods Forum and through the New York Declaration on Forests. While this ambitious industry goal was missed, many companies have reiterated their commitment to eliminate deforestation and contribute towards restoring the world's forests.

Public commitments are a critical first step, but these statements must be followed by concrete actions by companies and their value chain partners. This is still far from the norm, with comparatively few companies making it onto the [CDP A List for forests](#). Encouragingly, however, this number is steadily rising, doubling in 2020 from **8 to 16**.

The complexity and nature of this environmental challenge also requires unprecedented collaboration. Many CDP Supply Chain members have joined the [Consumer Goods Forum's Forest Positive Coalition of Action](#) to continue promoting and driving positive changes.

All supply chain actors must adopt this level of ambition and commitment to collaborative action. Only then will we be on the right path to a resilient, zero-deforestation, net-zero economy.





The Chinese white feather poultry enterprise Sunner has adopted a cradle-to-gate and circular economy approach to its breeding, cultivation and deep processing activities, including waste-to-fertilizer and waste-to-energy.

Corporate sustainability is vital for Sunner to achieve our business goals. Sunner has insisted on increasing our core competence by benchmarking with international good practices whilst expanding our corporate sustainability work.

Sunner mainly uses soybean, palm oil, and cattle products during the feeding, incubating, and processing period of our white feather chicken and beef products. These high forest-risk commodities are sourced through vendors in China. Sunner can trace the country of origin of these commodities to countries with high deforestation risk, such as Malaysia, Indonesia, Brazil, and Argentina. Disclosing information about forest conservation through CDP enables us to act on deforestation risks and incorporate 'zero deforestation' into our overall sustainable business strategy.

This goes beyond disclosure and transparency - we want to fundamentally reduce and manage deforestation risk and climate change impacts. Thus, we chose to join CDP as a supply chain member. In 2020, we invited strategic suppliers, including suppliers for animal feed, grain oil and herbal medicine, to disclose forest-related information to us via CDP. We also work with CDP to provide capacity-building activities for our suppliers to enhance their awareness and management capacity for deforestation risks. In the coming year we will continue to help our suppliers increase their transparency and take further actions on deforestation and sustainability.

Fujian Sunner Group



CMPC encourages small timberland and sawmill owners to use sustainable forest management and/or chain of custody certifications or to operate under our "CMPC non certificate supplier procedure". Through the years, with the support of our compliance department and a dedicated committee, CMPC developed a continuous improvement process to identify and address potential weaknesses. The aim is to maximize the area under certification, which in turn reduces inherent risks such as the procurement of timber coming from high-risk sources. As a result, CMPC is able to ensure that 97% of the total fiber input for its pulp, wood and paper production is certified or has undergone a rigorous due diligence process. In Chile, the company supports the certification (FSC and PEFC) of small and medium-sized timberland owners through a sustainable forest management group. In doing so, CMPC provides technical consulting services to group members, in an effort to support and give priority to local and small business-owners. CMPC currently offers four support programs to small forest-holders, which were launched after Chile's large wildfires in 2017. These include technical workshops for suppliers; incentive plan for implementation of due diligence systems; wood log procurement program from SMEs; and the creation and promotion of sustainable forest management certification groups.

Nicolás Gordon, Director of Corporate Sustainability, CMPC





Arcos Dorados is aware of the impact its supply chain has on the sustainability of its business, and this is a priority for us. As a company, we are fully committed to the environment and are doing everything possible to reduce the impact of our operation by means of our Recipe for the Future platform. For this reason, we actively work to identify, reduce and mitigate the social and environmental impacts, together with our suppliers, encouraging best practices in each stage of the supply chain. Environmental and social management must permeate the entire supply chain, which is why Arcos Dorados works with our suppliers, ensuring they comply with best practices, endorsed or recognized under international standards.

The company participated in the CDP Supply Chain Program as a member in 2020 for the fourth consecutive year. Arcos Dorados plays a leading role among the members of CDP Latin America, achieving the highest response rates from our suppliers in disclosing their environmental impacts through the CDP questionnaires. In 2020, Arcos Dorados achieved a 99% response rate from our requested suppliers in three questionnaires: climate change, forests and water security. In 2019, their suppliers have had a total emission reduction in the last year of close to 9 million tCO₂e, which is equivalent to taking 640,000 cars off the road for one year.

As the largest franchisee, Arcos Dorados is following McDonald's corporate commitment to reduce GHG emissions from 2015 levels by 36% in the restaurants and offices by 2030. Also, the company is committed to reducing GHG emissions from 2015 levels by 31% in supply chain processes by 2030.

Leonardo Correa De Souza Lima, Corporate Sustainable Development & Social Commitment Director, Arcos Dorados



WATER:

Trickling improvements but a wave of change is needed

Preserving water as a resource

Water is vital to sustain life on Earth, and it is also a critical component of the global economy. Currently, businesses risk draining our finite freshwater resources and polluting what remains.

To prevent the worst impacts of water pollution, scarcity, flooding, and disruption to people, planet and business, companies need to undertake a paradigm shift in their water stewardship and management. This means looking not only at their own practices but those in their supply chain.

A rise in reported reputational risks

In 2020, suppliers identified **US\$248 billion** associated with all water-related risks. In previous years the value of reported risks was dominated by physical impacts (e.g. floods, droughts, storms) whereas this year we see a major increase in the financial value of reported reputational and market risks, which is now almost equal to physical risks.

These reputational risks will not only affect the companies that report them. Companies are coming under more and more scrutiny regarding water stewardship practices in their supply chain. Those companies that want to minimize and mitigate these environmental and financial risks urgently need to engage their suppliers on water security.



2,449

Responders



US\$248 bn

Risk associated



14%

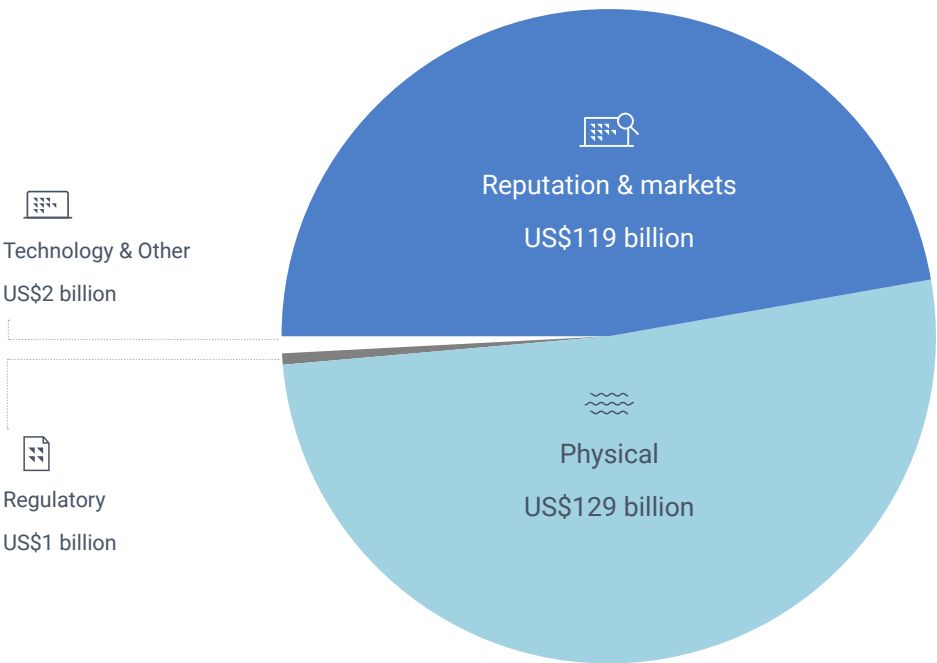
of disclosing companies reported that **more than half of their facilities are exposed to water risks** with the potential to have a substantive financial impact on their business.



18%




of suppliers are engaging with their own suppliers on water stewardship

Types of risk



Increasing clarity on water use

As companies begin considering their water-related risks, the first step is to understand their withdrawal, consumption, and discharge rates. More and more suppliers are disclosing information in each of these categories in response to requests from CDP Supply Chain water member companies. This improvement needs to continue so that all companies can better manage their water-related risks and usage.

	2019 suppliers reporting this data	2020 suppliers reporting this data	% responding suppliers reporting data 2020
 Withdrawal	1,208	1,504	61%
 Consumption	1,134	1,444	59%
 Discharge	1,091	1,377	56%

Furthermore, each supplier must engage with its own value chain to fully understand its own water risk.

The size of the financial risk identified by suppliers from water issues shows how urgent this need is. These companies need to step up and better understand the risks and opportunities in their supply chain.



Leadership and cascading action

CDP Supply Chain members have illustrated their commitment to water stewardship and supply chain management. Their suppliers have responded by increasingly disclosing their water-related risks and the potential financial impacts they face.

However, this increase in disclosure has not yet been followed by improvements in water-related metrics associated with leadership.

Suppliers are still lacking strong governance structures, targets and public commitments. This illustrates a dearth in the corporate leadership needed to achieve water security.

Only **32%** of disclosing suppliers had a public water policy, and just **5%** had a company-wide target for reducing their water pollution. This is significantly lower than the performance of the purchasing organizations requesting information from their suppliers. Amongst these Supply Chain members, **76%** reported having a public water policy and **15%** had a company-wide target for reducing their water pollution.

Although three times as many Supply Chain member companies have water pollution targets as their suppliers (**15%** vs. **5%**), this is still far too low.

There is room for improvement at all levels of the supply chain - just **18%** of suppliers report engaging with their own suppliers on water security.

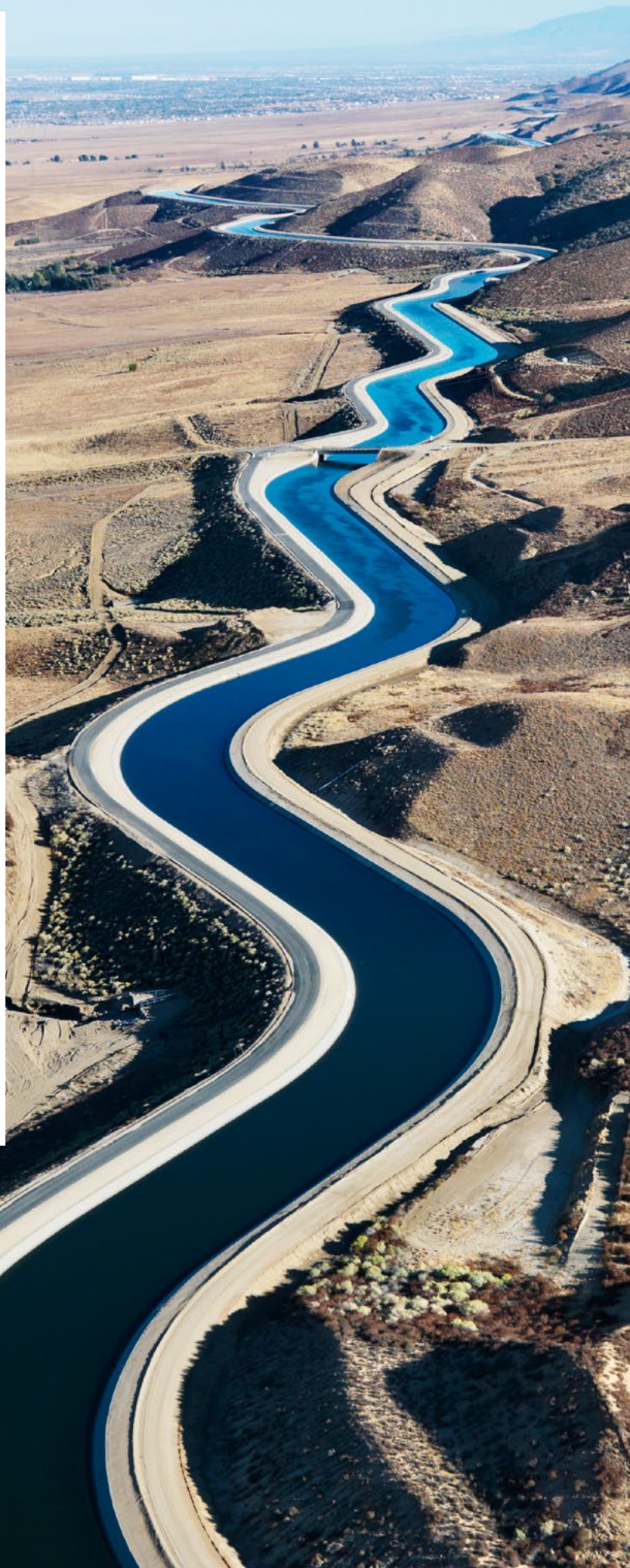
Support from the highest levels of a company is imperative to effect real change. This year **62%** of suppliers reported board-level oversight on water, making 2020 the second year in a row with a **3%** of higher increase. This pace of improvement is steady, but unimpressive. For climate change, for example, **72%** of suppliers report board-level oversight. This growth continues to illustrate the slow but steady pace at which companies are improving their water management oversight.

We need to see a wave of change in water leadership and governance, to mitigate business risks throughout the value chain and to build a safe, water-secure future.



At Walmart Mexico & Central America we are acutely aware of the challenges of water security for Mexico. Water management in our supply chain is key to achieving our commitment of becoming a regenerative company by 2040 and protecting 50 million acres of land and 1 million miles of ocean. This will depend on the collective action and transparency that we can encourage for our operations and suppliers. The use of water is essential to the production of our products, so we identify suppliers that have strong levels of sustainable water management to ensure the supply of these products into the future. During 2020, 48% of our suppliers reporting through CDP were national to Mexico, while 52% represented suppliers from 15 other countries. This year, 66% of our suppliers already include water security within their long-term business objectives, aligning with our shared vision and adopting good practices. An indicator of the importance of managing water resources is that 13% of these suppliers already identified some negative impacts due to water risks during the 2020 reporting period. Therefore, collaboration with suppliers is key to act in advance of these challenges, and improve risk awareness in the supply chain - 48% of our suppliers reported that they also run water risk assessments with their own suppliers. This is cascading transparency and awareness down the chain. Our goal is to take advantage of common opportunities and shared long-term strategies to mitigate water risks with our suppliers, as we seek to generate shared value through our value chain.

*Claudia de la Vega Martínez, Director of Corporate Affairs, **Walmart Mexico***



ENGAGING THE VALUE CHAIN:

How to build back better

Despite the devastations, uncertainty and economic turmoil of 2020, corporate commitment to transparency and improvement on environmental performance has intensified.

The number of CDP Supply Chain members asking for environmental transparency is up by a fifth, to more than 150, while 14% more suppliers (8,098) responded to their demand than in 2019. Sustainability is no longer a nice-to-have; it is now core to running any business.

The reasons are clear: at US \$1.26 trillion, the environmental risks reported in value chains are substantial. With major corporate buyers facing US\$120 billion in increased costs in the next 5 years from a subset of those environmental risks, companies must now take ambitious action.

In our global COVID-19 recovery efforts, we have an obligation to build back better. To mitigate and adapt against the shocks of irreversible climate change and environmental devastation, companies should start by building resiliency into business-as-usual. Engaging with the entire value chain to reduce emissions, mitigate deforestation and manage water resources better must be high on any board's agenda.

Since the average company has found emissions in its supply chain more than ten times as high as its direct emissions, a cascade of supply chain action will have enormous impact globally - helping build a thriving, sustainable economy.

Supply chain engagement works. The companies who are working with their customers and reporting through CDP have already undertaken activities reducing GHG emissions by 619 million metric tons and saved US\$33.7 billion in the process. That's equivalent to shutting down [159 coal power plants for a year](#).

But there is still a long way to go. Despite the risks of inaction, companies are slow to drive change along the whole of the value chain. Only 37% of suppliers are engaging their own suppliers on climate change. We need to see a cascade of action.



HOW TO ENGAGE YOUR SUPPLIERS



Where to start:

For companies beginning their journey on supplier engagement:



What next:

For companies who are already engaging with their suppliers on environmental issues:

1

Ask questions

Start asking your suppliers to assess and report their environmental data to you through CDP's disclosure system. You cannot manage what you haven't measured. If your suppliers are regularly disclosing, you can pinpoint risks, identify opportunities and start collaborating to build resiliency.

2

Collaborate with others

Supplier companies are more likely to act when requested to do so by multiple customers. For example, 57% of suppliers disclosed on forests if requested by one member and 75% disclosed when asked by multiple members. Therefore, seek out opportunities to collaborate with peers, investors and other stakeholders that influence your suppliers' behaviours.

3

Set public targets for the supply chain

Setting targets publicly gives buyers and suppliers clarity on their climate, deforestation and water security goals, and a clear shared pathway towards achieving them.

4

A chain reaction

Ask your suppliers to engage with their own suppliers. Risks and opportunities don't stop at tier one. By driving disclosure requests, target-setting and collaboration across your suppliers' values, you are future-proofing your own business.



With US\$120 billion at stake, addressing environmental risks through **supply chain engagement is vital for companies to be competitive and resilient in the changing market.** Leading companies that manage and reduce environmental risks in their supply chains will benefit from lower costs and better reputations giving them a more competitive edge today and being more resilient for the economy of tomorrow. Meanwhile, **laggard companies risk being left behind.** As the climate and ecological crisis worsens and the economy shifts, it's essential for both business and society that we have a Green Recovery from COVID-19 and build back better. **Smart business procurement is key to that transition.**

Sonya Bhonsle
Global Head of Value Chains, CDP



Being a CDP supply chain member helps you to engage your suppliers, pinpoint risks and identify opportunities. Our 150+ members worldwide are using the program to set and achieve their science-based targets, zero-deforestation and water security targets.

[Learn more and join us](#)

Sector breakdown

	Total risks	Risks related to increased costs
Climate Change	\$1,003,427,676,927	\$112,282,169,838
Forests	\$5,076,208,799	\$716,132,859
Water	\$248,973,772,326	\$7,640,152,719
Total	\$1,257,477,658,052	\$120,638,455,416

Sector	USD
Manufacturing	\$64,019,282,974.87
Food, beverage & agriculture	\$16,908,243,359.86
Power generation	\$11,313,350,387.57
Infrastructure	\$10,588,539,092.69
Materials	\$5,031,488,854.52
Services	\$4,480,199,065.61
Fossil Fuels	\$3,226,890,209.79
Retail	\$2,348,839,536.01
Transportation services	\$2,118,205,471.18
Biotech, health care & pharma	\$459,942,056.63
Apparel	\$76,523,757.45
Hospitality	\$66,950,649.28

Geographical breakdown

Sector	USD
Japan	\$28,552,004,721
United States of America	\$24,512,764,942
Taiwan, Greater China	\$20,386,578,109
Mexico	\$14,327,200,919
Republic of Korea	\$6,687,838,352
France	\$6,205,904,066
Ireland	\$3,656,704,436
India	\$3,207,286,489
Switzerland	\$2,305,700,411
United Kingdom of Great Britain and Northern Ireland	\$2,178,150,959
China	\$1,997,570,663
Brazil	\$1,653,346,235
Germany	\$864,964,628
Spain	\$563,037,925
Italy	\$562,198,461
Colombia	\$543,810,676
Netherlands	\$458,026,519
Canada	\$243,117,297
Finland	\$195,797,579
Portugal	\$194,854,824

APPENDIX

Supplier Engagement Leaderboard

Recognizing Leaders

Each year CDP evaluates how corporate respondents are encouraging sustainability throughout their value chain resulting in their Supplier Engagement Rating. This analyzes data from all companies that disclose through CDP on climate change, relating to supplier engagement, governance, scope 3 emissions accounting, targets, and overall CDP climate change score. Inclusion on this list demonstrates that a company is proactively working with their suppliers to ensure that sustainability is present in every part of their value chain.

COMPANY NAME	COUNTRY	PRIMARY ACTIVITY GROUP
AGRICULTURAL COMMODITIES		
Grieg Seafood	Norway	Fish & Animal Farming
Mowi ASA	Norway	Fish & Animal Farming
CAPITAL GOODS		
Anritsu Corporation	Japan	Electrical & electronic equipment
Fuji Electric Co., Ltd.	Japan	Electrical & electronic equipment
Furukawa Electric Co., Ltd.	Japan	Electrical & electronic equipment
Hitachi, Ltd.	Japan	Electrical & electronic equipment
Kone Oyj	Finland	Electrical & electronic equipment
Mitsubishi Electric Corporation	Japan	Electrical & electronic equipment
Nabtesco Corporation	Japan	Electrical & electronic equipment
Schneider Electric	France	Electrical & electronic equipment
Siemens AG	Germany	Electrical & electronic equipment
TDK Corporation	Japan	Electrical & electronic equipment
Trane Technologies	United States of America	Electrical & electronic equipment
Cargotec Corporation	Finland	Powered machinery
CNH Industrial NV	United Kingdom of Great Britain and Northern Ireland	Powered machinery
Danieli & C Officine Meccaniche S.p.A.	Italy	Powered machinery
Komatsu Ltd.	Japan	Powered machinery
Metso	Finland	Powered machinery
Tennant Company	United States of America	Powered machinery
Valmet	Finland	Powered machinery
Yokogawa Electric Corporation	Japan	Powered machinery
Siemens Gamesa Renewable Energy SA	Spain	Renewable energy equipment

COMPANY NAME	COUNTRY	PRIMARY ACTIVITY GROUP
CEMENT		
ACC	India	Cement & concrete
CEMEX	Mexico	Cement & concrete
LafargeHolcim Ltd	Switzerland	Cement & concrete
Taiwan Cement	Taiwan, Greater China	Cement & concrete
CHEMICALS		
Borregaard ASA	Norway	Chemicals
Braskem S/A	Brazil	Chemicals
Evonik Industries AG	Germany	Chemicals
FIRMENICH SA	Switzerland	Chemicals
Givaudan SA	Switzerland	Chemicals
Hitachi Chemical Company, Ltd.	Japan	Chemicals
ICL	Israel	Chemicals
International Flavors & Fragrances Inc.	United States of America	Chemicals
Koninklijke DSM	Netherlands	Chemicals
LANXESS AG	Germany	Chemicals
Lenzing AG	Austria	Chemicals
Sumitomo Chemical Co., Ltd.	Japan	Chemicals
Symrise AG	Germany	Chemicals
Wacker Chemie AG	Germany	Chemicals
CONSTRUCTION		
Barratt Developments plc	United Kingdom of Great Britain and Northern Ireland	Construction
Bonava	Sweden	Construction
Daelim Industrial	Republic of Korea	Construction
Daiwa House Industry Co., Ltd.	Japan	Construction
Kajima Corporation	Japan	Construction
Morgan Sindall Group plc	United Kingdom of Great Britain and Northern Ireland	Construction
Obayashi Corporation	Japan	Construction
Samsung C&T	Republic of Korea	Construction
SEKISUI CHEMICAL CO.,LTD	Japan	Construction
Sekisui House, Ltd.	Japan	Construction
Severfield	United Kingdom of Great Britain and Northern Ireland	Construction
Shimizu Corporation	Japan	Construction
Skanska AB	Sweden	Construction
Taisei Corporation	Japan	Construction
TAKENAKA CORPORATION	Japan	Construction
Toda Corporation	Japan	Construction

COMPANY NAME	COUNTRY	PRIMARY ACTIVITY GROUP
ELECTRIC UTILITIES		
A2A	Italy	Energy utility networks
CPFL Energia SA	Brazil	Energy utility networks
Iren SpA	Italy	Energy utility networks
Korea Electric Power Corp	Republic of Korea	Energy utility networks
National Grid PLC	United Kingdom of Great Britain and Northern Ireland	Energy utility networks
Orsted	Denmark	Energy utility networks
EDF	France	Nuclear power generation
Centrais Eletricas Brasileiras S/A (ELETROBRAS)	Brazil	Renewable power generation
E.ON SE	Germany	Renewable power generation
Endesa	Spain	Renewable power generation
SSE	United Kingdom of Great Britain and Northern Ireland	Renewable power generation
ENGIE	France	Thermal power generation
Iberdrola SA	Spain	Thermal power generation
Los Angeles Department of Water and Power	United States of America	Thermal power generation
Origin Energy	Australia	Thermal power generation
The Tokyo Electric Power Company Holdings, Inc (TEPCO)	Japan	Thermal power generation
Vattenfall Group	Sweden	Thermal power generation
FINANCIAL SERVICES		
Bank of America	United States of America	Financial services
Comerica Incorporated	United States of America	Financial services
Commerzbank AG	Germany	Financial services
DGB Financial Group	Republic of Korea	Financial services
DNB ASA	Norway	Financial services
Fubon Financial Holdings	Taiwan, Greater China	Financial services
Goldman Sachs Group Inc.	United States of America	Financial services
Grupo Cooperativo Cajamar	Spain	Financial services
ING Group	Netherlands	Financial services
KBC Group	Belgium	Financial services
KeyCorp	United States of America	Financial services
MetLife, Inc.	United States of America	Financial services
Power Corporation of Canada	Canada	Financial services
Raiffeisen Bank International AG	Austria	Financial services
Shinhan Financial Group	Republic of Korea	Financial services
Storebrand ASA	Norway	Financial services
T.GARANTI BANKASI A.S.	Turkey	Financial services
TD Bank Group	Canada	Financial services

COMPANY NAME	COUNTRY	PRIMARY ACTIVITY GROUP
FINANCIAL SERVICES		
U.S. Bancorp	United States of America	Financial services
UBS	Switzerland	Financial services
Lockton Companies LLP	United Kingdom of Great Britain and Northern Ireland	Specialized professional services
FOOD, BEVERAGE & TOBACCO		
Anheuser Busch InBev	Belgium	Food & beverage processing
Asahi Group Holdings, Ltd.	Japan	Food & beverage processing
Barilla Holding SpA	Italy	Food & beverage processing
Barry Callebaut AG	Switzerland	Food & beverage processing
Britvic	United Kingdom of Great Britain and Northern Ireland	Food & beverage processing
Carlsberg Breweries A/S	Denmark	Food & beverage processing
Coca-Cola European Partners	United Kingdom of Great Britain and Northern Ireland	Food & beverage processing
Coca-Cola Femsa Sab-Ser l	Mexico	Food & beverage processing
Coca-Cola HBC AG	Switzerland	Food & beverage processing
Corbion	Netherlands	Food & beverage processing
Danone	France	Food & beverage processing
Diageo Plc	United Kingdom of Great Britain and Northern Ireland	Food & beverage processing
Farmer Brothers	United States of America	Food & beverage processing
Fonterra Co-operative Group	New Zealand	Food & beverage processing
FUJI OIL HOLDINGS INC.	Japan	Food & beverage processing
General Mills Inc.	United States of America	Food & beverage processing
Ingredion Incorporated	United States of America	Food & beverage processing
Kellogg Company	United States of America	Food & beverage processing
Keurig Dr Pepper	United States of America	Food & beverage processing
Kirin Holdings Co Ltd	Japan	Food & beverage processing
Mars	United States of America	Food & beverage processing
Molson Coors Brewing Company	United States of America	Food & beverage processing
Nestle	Switzerland	Food & beverage processing
Orkla ASA	Norway	Food & beverage processing
PepsiCo, Inc.	United States of America	Food & beverage processing
Suntory Beverage & Food	Japan	Food & beverage processing
The Coca-Cola Company	United States of America	Food & beverage processing
Vina Concha y Toro S A	Chile	Food & beverage processing
British American Tobacco	United Kingdom of Great Britain and Northern Ireland	Tobacco
CONTRAF-NICOTEX-TOBACCO GmbH	Germany	Tobacco
Imperial Brands	United Kingdom of Great Britain and Northern Ireland	Tobacco
Japan Tobacco Inc.	Japan	Tobacco
Philip Morris International	United States of America	Tobacco

COMPANY NAME	COUNTRY	PRIMARY ACTIVITY GROUP
GENERAL		
Kering	France	Apparel design
VF Corporation	United States of America	Apparel design
Salvatore Ferragamo SpA	Italy	Apparel design
Sodexo	France	Bars, hotels & restaurants
AbbVie Inc	United States of America	Biotech & pharma
Amgen, Inc.	United States of America	Biotech & pharma
AstraZeneca	United Kingdom of Great Britain and Northern Ireland	Biotech & pharma
Daiichi Sankyo Co., Ltd.	Japan	Biotech & pharma
Dr. Reddy's Laboratories	India	Biotech & pharma
GlaxoSmithKline	United Kingdom of Great Britain and Northern Ireland	Biotech & pharma
Johnson & Johnson	United States of America	Biotech & pharma
Lundbeck A/S	Denmark	Biotech & pharma
Novartis	Switzerland	Biotech & pharma
Novo Nordisk A/S	Denmark	Biotech & pharma
Ono Pharmaceutical Co., Ltd.	Japan	Biotech & pharma
Pfizer Inc.	United States of America	Biotech & pharma
Shionogi & Co., Ltd.	Japan	Biotech & pharma
Beiersdorf AG	Germany	Chemicals
Colgate Palmolive Company	United States of America	Chemicals
Fancl Corporation	Japan	Chemicals
KAO Corporation	Japan	Chemicals
KOSE Corporation	Japan	Chemicals
Lion Corporation	Japan	Chemicals
L'Oréal	France	Chemicals
Natura Cosméticos SA	Brazil	Chemicals
Shiseido Co., Ltd.	Japan	Chemicals
Unilever plc	United Kingdom of Great Britain and Northern Ireland	Chemicals
CMS CAMERON MCKENNA	United Kingdom of Great Britain and Northern Ireland	Commercial & consumer services
Ecolab Inc.	United States of America	Commercial & consumer services
Secom Co., Ltd.	Japan	Commercial & consumer services
ACCIONA S.A.	Spain	Construction
JENEX Co., LTD.	Japan	Construction
Mainstream Renewable Power	Ireland	Construction
Scatec Solar	Norway	Construction
Aeon Co., Ltd.	Japan	Convenience retail
FamilyMart UNY Holdings Co., Ltd.	Japan	Convenience retail
J Sainsbury Plc	United Kingdom of Great Britain and Northern Ireland	Convenience retail

COMPANY NAME	COUNTRY	PRIMARY ACTIVITY GROUP
GENERAL		
Kesko Corporation	Finland	Convenience retail
Metro AG	Germany	Convenience retail
Tesco	United Kingdom of Great Britain and Northern Ireland	Convenience retail
Tokmanni	Finland	Convenience retail
Walmart, Inc.	United States of America	Convenience retail
Woolworths Limited	Australia	Convenience retail
Best Buy Co., Inc.	United States of America	Discretionary retail
Etsy, Inc.	United States of America	Discretionary retail
Fast Retailing Co., Ltd.	Japan	Discretionary retail
HUGO BOSS AG	Germany	Discretionary retail
Inditex	Spain	Discretionary retail
Ingka Holding B.V.	Netherlands	Discretionary retail
J. Front Retailing Co., Ltd.	Japan	Discretionary retail
JD Sports Fashion	United Kingdom of Great Britain and Northern Ireland	Discretionary retail
Lululemon Athletica Inc.	Canada	Discretionary retail
Marui Group Co., Ltd.	Japan	Discretionary retail
Ralph Lauren Corporation	United States of America	Discretionary retail
S Group	Finland	Discretionary retail
Zalando SE	Germany	Discretionary retail
Advanced Micro Devices, Inc	United States of America	Electrical & electronic equipment
Apple Inc.	United States of America	Electrical & electronic equipment
ARCELIK A.S.	Turkey	Electrical & electronic equipment
Canon Inc.	Japan	Electrical & electronic equipment
Dell Technologies	United States of America	Electrical & electronic equipment
Delta Electronics, Inc.	Taiwan, Greater China	Electrical & electronic equipment
Draxlmaier	Germany	Electrical & electronic equipment
Ericsson	Sweden	Electrical & electronic equipment
FUJIFILM Holdings Corporation	Japan	Electrical & electronic equipment
GIGA-BYTE TECHNOLOGY CO.,LTD	Taiwan, Greater China	Electrical & electronic equipment
Groupe SEB	France	Electrical & electronic equipment
HP Inc	United States of America	Electrical & electronic equipment
Innolux Corporation	Taiwan, Greater China	Electrical & electronic equipment
Intel Corporation	United States of America	Electrical & electronic equipment
Juniper Networks, Inc.	United States of America	Electrical & electronic equipment
Konica Minolta, Inc.	Japan	Electrical & electronic equipment
Kyocera Corporation	Japan	Electrical & electronic equipment
Lenovo Group	United States of America	Electrical & electronic equipment

COMPANY NAME	COUNTRY	PRIMARY ACTIVITY GROUP
GENERAL		
Lite-On Technology Corporation	Japan	Electrical & electronic equipment
MURATA MACHINERY,LTD.	Japan	Electrical & electronic equipment
Murata Mfg. Co.	Japan	Electrical & electronic equipment
Nikon Corporation	Finland	Electrical & electronic equipment
Nokia Group	Japan	Electrical & electronic equipment
Panasonic Corporation	Japan	Electrical & electronic equipment
Ricoh Co., Ltd.	United States of America	Electrical & electronic equipment
Seagate Technology PLC	Japan	Electrical & electronic equipment
Seiko Epson Corporation	Netherlands	Electrical & electronic equipment
Signify NV	Japan	Electrical & electronic equipment
Sony Corporation	Taiwan, Greater China	Electrical & electronic equipment
Taiwan Semiconductor Manufacturing	Japan	Electrical & electronic equipment
Toshiba Corporation	United States of America	Electrical & electronic equipment
Xerox Corporation	United States of America	Entertainment facilities
Caesars Entertainment	United States of America	Entertainment facilities
Las Vegas Sands Corporation	Brazil	Health care provision
EVERGREEN LINE	Taiwan, Greater China	Industrial support services
ASE Technology Holding Co., Ltd.	Ireland	IT & software development
Accenture	United States of America	IT & software development
Adobe, Inc.	United States of America	IT & software development
Amdocs Ltd	Norway	IT & software development
Atea ASA	France	IT & software development
Atos SE	France	IT & software development
Capgemini SE	United States of America	IT & software development
Cisco Systems, Inc.	Japan	IT & software development
Fujitsu Limited	India	IT & software development
Infosys Limited	United States of America	IT & software development
Microsoft Corporation	Japan	IT & software development
NEC Corporation	Japan	IT & software development
Nomura Research Institute, Ltd.	United States of America	IT & software development
Oracle Corporation	United States of America	IT & software development
Salesforce.com, Inc.	Germany	IT & software development
SAP SE	France	IT & software development
Sopra Steria Group	India	IT & software development
Tech Mahindra	Norway	IT & software development
TietoEVRY	United States of America	IT & software development
VMware, Inc	India	IT & software development

COMPANY NAME	COUNTRY	PRIMARY ACTIVITY GROUP
GENERAL		
Transurban Group	Australia	Land & property ownership & development
Citizen Watch Co.,Ltd.	Japan	Leisure & home manufacturing
CJCHT Groups Limited	China, Hong Kong Special Administrative Region	Leisure & home manufacturing
Steelcase	United States of America	Leisure & home manufacturing
Toyoda Gosei	Japan	Leisure & home manufacturing
Toyota Boshoku Corporation	Japan	Leisure & home manufacturing
Yamaha Corporation	Japan	Leisure & home manufacturing
Ardagh Group	Ireland	Light manufacturing
Bridgestone Corporation	Japan	Light manufacturing
BRISA BRIDGESTONE SABANCI LASTIK SAN. VE TIC. A.S	Turkey	Light manufacturing
Constantia Flexibles	Austria	Light manufacturing
Continental AG	Germany	Light manufacturing
Michelin	France	Light manufacturing
Nokian Tyres	Finland	Light manufacturing
SIG Holding AG	Switzerland	Light manufacturing
TETRA PAK	Sweden	Light manufacturing
VPK Packaging Group NV	Belgium	Light manufacturing
AT&T Inc.	United States of America	Media, telecommunications & data center services
BT Group	United Kingdom of Great Britain and Northern Ireland	Media, telecommunications & data center services
Deutsche Telekom AG	Germany	Media, telecommunications & data center services
Far EasTone Telecommunications	Taiwan, Greater China	Media, telecommunications & data center services
Hewlett Packard Enterprise Company	United States of America	Media, telecommunications & data center services
KDDI Corporation	Japan	Media, telecommunications & data center services
Koninklijke KPN NV (Royal KPN)	Netherlands	Media, telecommunications & data center services
LG Uplus	Republic of Korea	Media, telecommunications & data center services
Magyar Telekom Nyrt.	Hungary	Media, telecommunications & data center services
QUALITY TECHNOLOGY SERVICES	United States of America	Media, telecommunications & data center services
Telefónica	Spain	Media, telecommunications & data center services
Telefonica Brasil S.A.	Brazil	Media, telecommunications & data center services
Telstra Corporation	Australia	Media, telecommunications & data center services
Vodafone Group	United Kingdom of Great Britain and Northern Ireland	Media, telecommunications & data center services
CVS Health	United States of America	Medical equipment & supplies
Koninklijke Philips NV	Netherlands	Medical equipment & supplies
Shummi Enterprise Co., Ltd	China	Medical equipment & supplies
Ball Corporation	United States of America	Metal products manufacturing
Crown Holdings	United States of America	Metal products manufacturing
Fiskars Corporation	Finland	Metal products manufacturing

COMPANY NAME	COUNTRY	PRIMARY ACTIVITY GROUP
GENERAL		
Gestamp	Spain	Metal products manufacturing
Greif Inc	United States of America	Metal products manufacturing
Nexans	France	Metal products manufacturing
NSK Ltd.	Japan	Metal products manufacturing
PACIFIC INDUSTRIAL CO.,LTD.	Japan	Metal products manufacturing
Robert Bosch GmbH	Germany	Metal products manufacturing
Stanley Black & Decker, Inc.	United States of America	Metal products manufacturing
Trivium Packaging	Netherlands	Metal products manufacturing
Aguas Andinas SA	Chile	Non-energy utilities
Anglian Water	United Kingdom of Great Britain and Northern Ireland	Non-energy utilities
Suez	France	Non-energy utilities
Veolia Environnement SA	France	Non-energy utilities
Waste Management, Inc.	United States of America	Non-energy utilities
Kingspan Group PLC	Ireland	Other materials
LIXIL Group Corporation	Japan	Other materials
Owens Corning	United States of America	Other materials
Saint-Gobain	France	Other materials
Benesse Holdings, Inc.	Japan	Other services
JLL	United States of America	Other services
Tokyu Fudosan Holdings Corporation	Japan	Other services
AptarGroup	United States of America	Plastic product manufacturing
ARRAY CANADA	Canada	Plastic product manufacturing
BEAUTY STAR	China	Plastic product manufacturing
Creative Group of Industries	India	Plastic product manufacturing
Sealed Air Corp.	United States of America	Plastic product manufacturing
Tessy Plastics	United States of America	Plastic product manufacturing
Dai Nippon Printing Co., Ltd.	Japan	Print & publishing services
Edelmann	Germany	Print & publishing services
Pearson	United Kingdom of Great Britain and Northern Ireland	Print & publishing services
Alten	France	Specialized professional services
Ernst & Young LLP UK	United Kingdom of Great Britain and Northern Ireland	Specialized professional services
KPMG UK	United Kingdom of Great Britain and Northern Ireland	Specialized professional services
Mastercard Incorporated	United States of America	Specialized professional services
McKinsey & Company	United Kingdom of Great Britain and Northern Ireland	Specialized professional services
Moody's Corporation	United States of America	Specialized professional services
Refinitiv	United Kingdom of Great Britain and Northern Ireland	Specialized professional services
S&P Global	United States of America	Specialized professional services

COMPANY NAME	COUNTRY	PRIMARY ACTIVITY GROUP
GENERAL		
Stantec Inc.	Canada	Specialized professional services
WICRESOFT	China	Specialized professional services
Asics Corporation	Japan	Textiles & fabric goods
Burberry Group	United Kingdom of Great Britain and Northern Ireland	Textiles & fabric goods
Fruit of the Loom	United States of America	Textiles & fabric goods
Garan Manufacturing Corp	United States of America	Textiles & fabric goods
PATTERN SPA	Italy	Textiles & fabric goods
PEKING HANDICRAFT INC	United States of America	Textiles & fabric goods
PUMA SE	Germany	Textiles & fabric goods
Grupo Logista	Spain	Trading, wholesale, distribution, rental & leasing
Rexel	France	Trading, wholesale, distribution, rental & leasing
Ricoh Leasing Co., Ltd.	Japan	Trading, wholesale, distribution, rental & leasing
Alphabet, Inc.	United States of America	Web & marketing services
APG SGA SA	Switzerland	Web & marketing services
Dentsu Inc.	Japan	Web & marketing services
METALS & MINING		
United Co RUSAL PLC	Russian Federation	Metal smelting, refining & forming
Vallourec	France	Metal smelting, refining & forming
Petra Diamonds Pty Ltd	United Kingdom of Great Britain and Northern Ireland	Metallic mineral mining
OIL & GAS		
Eni SpA	Italy	Oil & gas processing
Equinor	Norway	Oil & gas processing
ENAGAS	Spain	Oil & gas storage & transportation
PAPER & FORESTRY		
BillerudKorsnas	Sweden	Paper products & packaging
Elopak	Norway	Paper products & packaging
Essity	Sweden	Paper products & packaging
Metsa Board Corporation	Finland	Paper products & packaging
Mondi PLC	United Kingdom of Great Britain and Northern Ireland	Paper products & packaging
Sofidel S.p.A.	Italy	Paper products & packaging
Uni-Charm Corporation	Japan	Paper products & packaging
Klabin S/A	Brazil	Wood & paper materials
Stora Enso Oyj	Finland	Wood & paper materials
UPM-Kymmene Corporation	Finland	Wood & paper materials

COMPANY NAME	COUNTRY	PRIMARY ACTIVITY GROUP
REAL ESTATE		
NH Hotel Group	Spain	Bars, hotels & restaurants
Scandic Hotels Group	Sweden	Bars, hotels & restaurants
Whitbread Plc	United Kingdom of Great Britain and Northern Ireland	Bars, hotels & restaurants
AvalonBay Communities	United States of America	Financial services
Befimmo SA	Belgium	Financial services
Big Yellow Group	United Kingdom of Great Britain and Northern Ireland	Financial services
Cegereal	France	Financial services
Covivio	France	Financial services
Daiwa House REIT Investment Corporation	Japan	Financial services
Dexus	Australia	Financial services
Gecina	France	Financial services
Host Hotels & Resorts, Inc.	United States of America	Financial services
Kiwi Property Group	New Zealand	Financial services
Landsec	United Kingdom of Great Britain and Northern Ireland	Financial services
Unibail-Rodamco-Westfield	France	Financial services
Workspace Group	United Kingdom of Great Britain and Northern Ireland	Financial services
Aeon Mall Co., Ltd.	Japan	Land & property ownership & development
Castellum	Sweden	Land & property ownership & development
City Developments Limited	Singapore	Land & property ownership & development
Mahindra Lifespace Developers Limited	India	Land & property ownership & development
Mitsubishi Estate Co., Ltd.	Japan	Land & property ownership & development
STEEL		
Outokumpu Oyj	Finland	Metal smelting, refining & forming
Voestalpine AG	Austria	Metal smelting, refining & forming
TRANSPORT OEMS		
Cummins Inc.	United States of America	Powered machinery
Airbus SE	Netherlands	Transportation equipment
BMW AG	Germany	Transportation equipment
Daihatsu Motor Co., Ltd.	Japan	Transportation equipment
Daimler AG	Germany	Transportation equipment
Fincantieri	Italy	Transportation equipment
Ford Motor Company	United States of America	Transportation equipment
Groupe PSA	France	Transportation equipment
Honda Motor Co., Ltd.	Japan	Transportation equipment
Isuzu Motors Limited	Japan	Transportation equipment
Kia Motors Corp	Republic of Korea	Transportation equipment

COMPANY NAME	COUNTRY	PRIMARY ACTIVITY GROUP
REAL ESTATE		
Mahindra & Mahindra	India	Transportation equipment
Renault	France	Transportation equipment
SUBARU CORPORATION	Japan	Transportation equipment
Tata Motors	India	Transportation equipment
Toyota Motor Corporation	Japan	Transportation equipment
Volkswagen AG	Germany	Transportation equipment
TRANSPORT SERVICES		
United Airlines Holdings	United States of America	Air transport
La Poste	France	Intermodal transport & logistics
Nippon Express Co., Ltd.	Japan	Intermodal transport & logistics
Osterreichische Post AG	Austria	Intermodal transport & logistics
PostNL	Netherlands	Intermodal transport & logistics
Kawasaki Kisen Kaisha, Ltd.	Japan	Marine transport
Nippon Yusen Kaisha Line	Japan	Marine transport
Canadian National Railway Company	Canada	Rail transport
CSX Corporation	United States of America	Rail transport
Deutsche Bahn AG	Germany	Rail transport
Union Pacific Corporation	United States of America	Rail transport
The Martin-Brower Company, L.L.C.	United States of America	Road transport

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