

Value Chains: The Key to Unlocking Low-Carbon Innovation

Technologies and Policies to Decarbonize the Industry Sector

Aspen Global Change Institute

November 15, 2018

Betty Cremmins, Director, CDP West

Content

- ▼ Introduction to CDP
- ▼ Investor engagement of cement and steel companies
- ▼ The power of CDP's Supply Chain program
- ▼ Moving forward faster...


Content

- ▼ **Introduction to CDP**
- ▼ **Investor engagement of cement and steel companies**
- ▼ **The power of CDP's Supply Chain program**
- ▼ **Moving forward faster...**

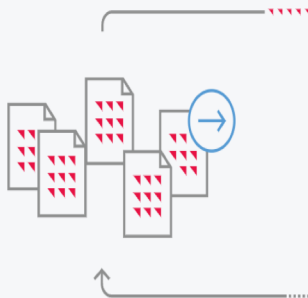


CDP's Mission:

To transform the global economic system to prevent dangerous climate change and value our natural resources by putting relevant information at the heart of business, investment and policy decisions

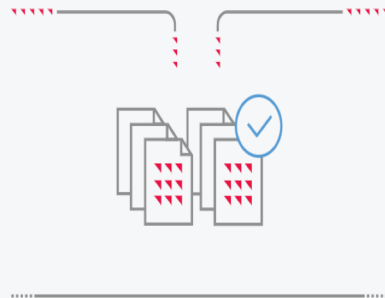


CDP's theory of change



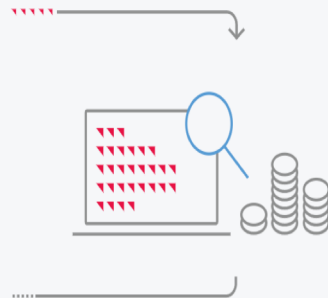
Disclosers

We ask companies, cities, states and regions for data on their environmental performance.



CDP

We transform that data into detailed analysis on critical environmental risks, opportunities and impacts.



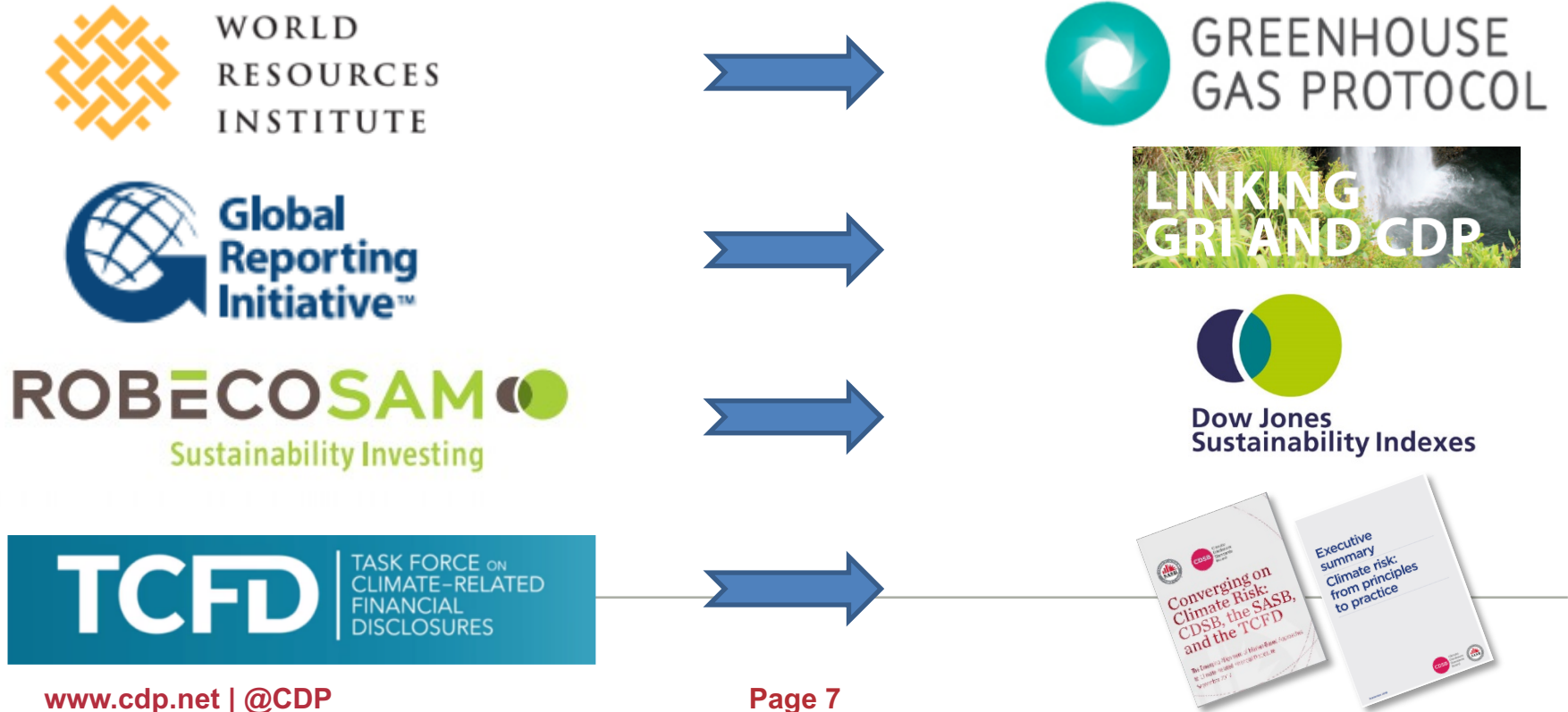
Decision-makers

Investors, businesses and policy makers use our data and insights to make better decisions, manage risk and capitalize on opportunities.

CDP data is central

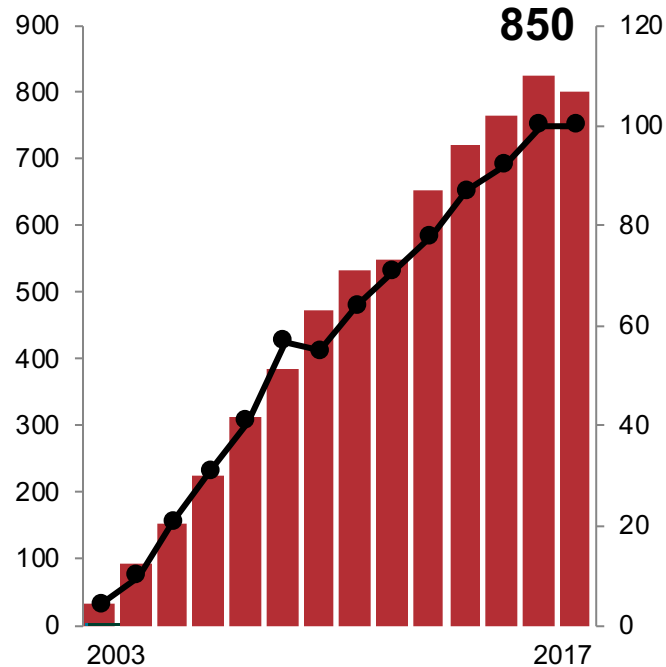


Alignment on sustainability reporting

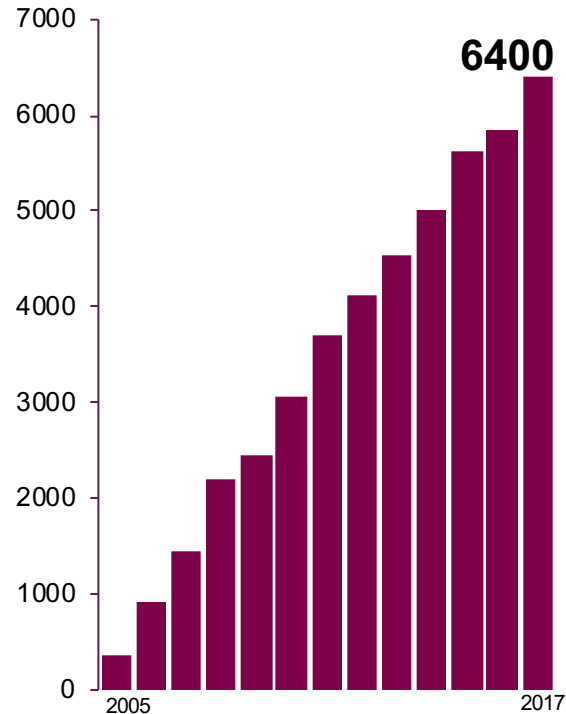


CDP's growth since 2000

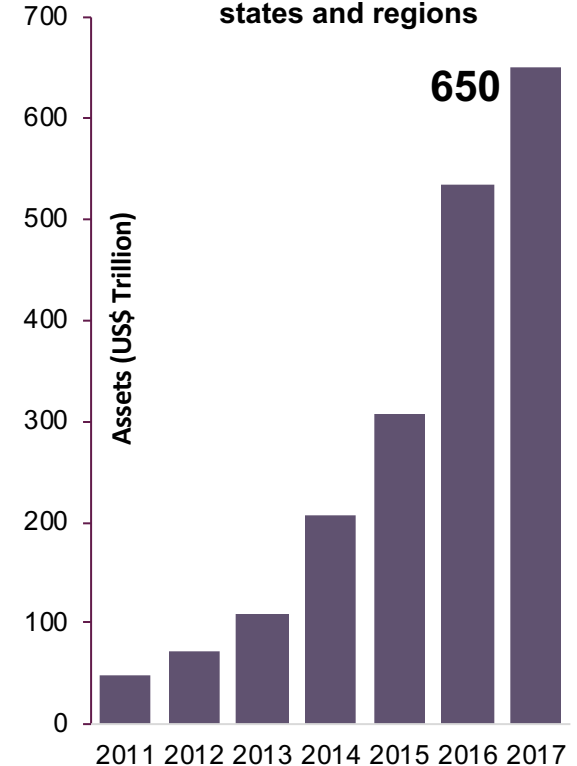
Number of investor signatories
(and assets \$)



Number of responding companies

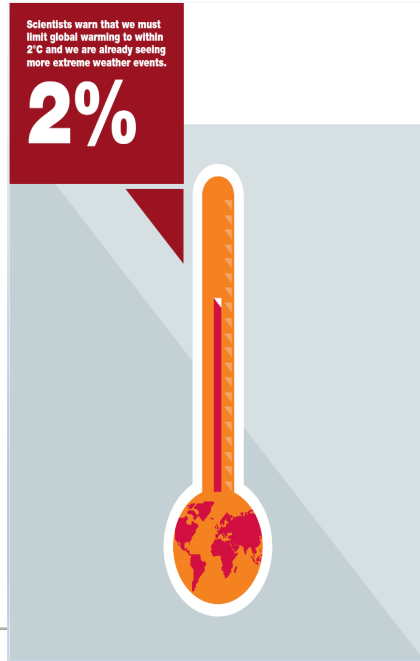


Number of responding cities,
states and regions



CDP's thematic programs

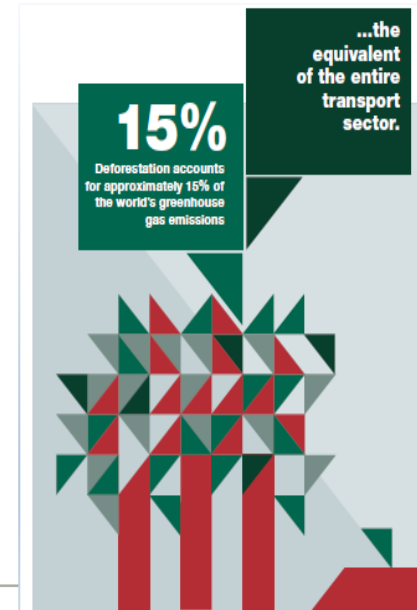
Climate Change



Water



Forests



CDP's Questionnaires - 2018

Climate Change

Key areas:

- Governance
- Risks and opportunities
- Strategy
- Targets
- Energy
- Climate-related metrics
- Carbon Pricing

*Supplier module – allocation,
Action Exchange, & collaboration*



Water

Key areas:

- Context
- Business impacts
- Procedures
- Risks and opportunities
- Facility-level accounting
- Governance and Strategy
- Targets and Linkages

*Supplier module – product
intensity, risk, and collaboration*



Forests

Key areas:

- Current state
- Procedures
- Governance and Strategy
- Risks and opportunities
- Implementation and Linkages
- Verification and Challenges

Forest risk commodities:

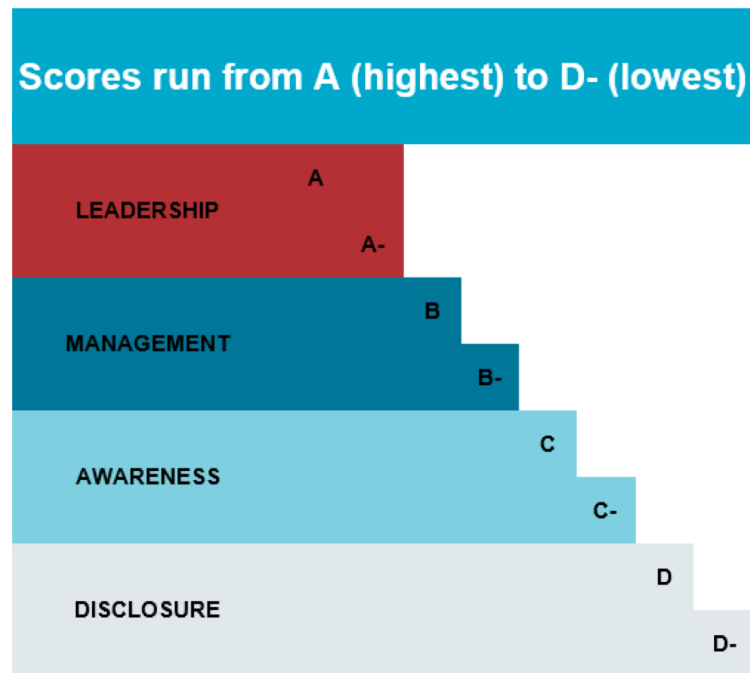
- Timber
- Palm oil
- Cattle production
- Soy



<http://www.cdp.net/guidance>

Scores map a path from disclosure to leadership

- ▼ **Disclosure:** completeness of a company's response
- ▼ **Awareness:** assessment of environmental issues, risks and impacts
- ▼ **Management:** implementation of actions, policies and strategies to address environmental issues
- ▼ **Leadership:** best practice in the field of environmental management



*Failure to disclose=F

Highest scoring cement and steel companies, CDP Climate Change 2017

Cement Companies	HQ Country	Score	Permission
CEMEX	Mexico	A-	Public
HeidelbergCement AG	Germany	A-	Public
LafargeHolcim Ltd	Switzerland	A-	Public
ACC	India	B	Public
Ambuja Cements	India	B	Public
Asia Cement Corp	Taiwan	B	Public
Cementos Argos SA	Colombia	B	Public
ÇİMSA ÇİMENTO SANAYİ VE TİCARET A.Ş.	Turkey	B	Public
Dalmia Bharat Ltd	India	B	Public
PPC Ltd	South Africa	B	Public
Shree Cement	India	B	Public
AKÇANSA ÇİMENTO SANAYİ VE TİCARET A.Ş.	Turkey	B-	Public

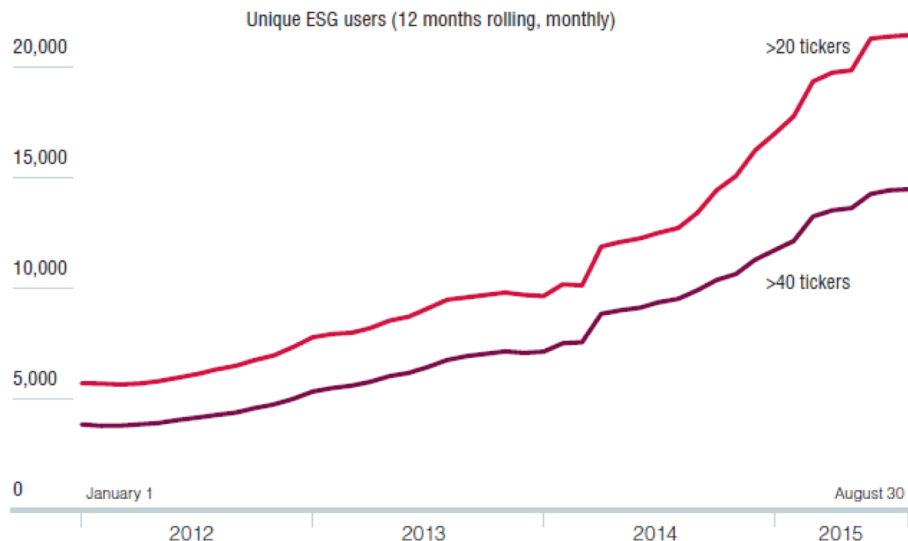
Steel Companies	HQ Country	Score	Permission
POSCO	Korea	A-	Public
APERAM	Luxembourg	A-	Non public
China Steel Corporation	Taiwan	A-	Public
Outokumpu Oyj	Finland	B	Public
Salzgitter AG	Germany	B	Non public
Tata Steel	India	B	Public
Tokyo Steel Manufacturing Co., Ltd.	Japan	B	Non public
Nippon Steel & Sumitomo Metal Corporation	Japan	B	Non public
ACERINOX	Spain	B	Public

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Investors are using ESG to inform their decisions

Rapid growth in Bloomberg's ESG users and data consumption corroborates growing corporate interest



Source: Bloomberg LP



Many of our clients would like us to measure the ESG alignment of their portfolios, whether along environmental or other criteria. CDP is an important data source for us in this endeavor.

Hugh Lawson
Global Head of ESG Investing
Goldman Sachs Asset Management



Investor case studies

Investors use CDP data for portfolio analysis, engagement and funds and indices.



Use emissions and targets disclosed to CDP to reduce the carbon footprint of investments in alignment with global targets.



Focuses on *how* companies disclose to assess management and they use data to identify areas for more research and engagement.



New York State Common Retirement Fund created a \$2 billion low carbon index using CDP data, reducing their emissions profile by up to 70%. Wrote a letter to the CEOs of 366 non-disclosing companies (Russell 1000 index) asking them to disclose.

ClimateWorks Energy Productivity

- ▶ 'Energy Productivity Index for Companies' ClimateWorks guide for investors
- ▶ Analysis primarily draws on reporting data from CDP

Airline company scores against key measures

Company	General Rating	Energy cost resilience	Energy productivity outcome	Energy efficiency performance
United Continental Holdings	83%	<div><div></div></div>	25% <div><div></div></div>	94% <div><div></div></div>
Finnair	74%	<div><div></div></div>	0% <div><div></div></div>	84% <div><div></div></div>
Southwest Airlines Co.	70%	<div><div></div></div>	42% <div><div></div></div>	58% <div><div></div></div>
Air New Zealand	59%	<div><div></div></div>	37% <div><div></div></div>	80% <div><div></div></div>
Air France - KLM	41%	<div><div></div></div>	2% <div><div></div></div>	78% <div><div></div></div>
Korean Air	39%	<div><div></div></div>	8% <div><div></div></div>	21% <div><div></div></div>
Air Canada	37%	<div><div></div></div>	29% <div><div></div></div>	76% <div><div></div></div>
British Airways	35%	<div><div></div></div>	28% <div><div></div></div>	58% <div><div></div></div>
Delta Air Lines	34%	<div><div></div></div>	31% <div><div></div></div>	32% <div><div></div></div>
Qantas Airways Ltd	31%	<div><div></div></div>	0% <div><div></div></div>	82% <div><div></div></div>
Cathay Pacific Airways Limited	14%	<div><div></div></div>	17% <div><div></div></div>	30% <div><div></div></div>
American Airlines Group Inc	13%	<div><div></div></div>	32% <div><div></div></div>	0% <div><div></div></div>
7 companies	Incomplete/insufficient data provided to CDP to conduct analysis (Aer Lingus Group PLC, Asiana Airlines, easyJet, Gol Linhas Aereas Inteligentes S.A., TAM S.A., Virgin Australia Holdings, WestJet Airlines Ltd.).			
Non reporters	All other companies did not respond to CDP			
5 companies	Reviewed but excluded from analysis (Air Partner Plc, Hong Kong Aircraft Engineering, IBERIA, International Consolidated Airlines Group, S.A., SAS).			
Satisfactory data		Insufficient data		Not included in analysis
<div>Positive results, could discuss potential to optimise</div>		<div>Results provisional due to data uncertainty, request additional data to confirm rating</div>		<div>Out of scope</div>
<div>Request clarification of results and discuss potential to improve</div>		<div>Data provided is insufficient to conduct analysis, require more information</div>		

Carbon Action

- ▼ Over 300 investors with US\$25 trillion in assets working to accelerate action
- ▼ Targets 1,300 high-emitting companies globally, considering both direct (Scopes 1 & 2) and indirect (Scope 3) emissions
- ▼ No additional reporting burden for the companies targeted

**Make
emissions
reductions**

**Publicly disclose
emissions
reduction targets**

**Invest in emissions
reduction projects
with a positive
return**

Carbon Action results in 2016

Targets



1305

Companies targeted by Carbon Action.

818

Responded to CDP.

86%

have set an emissions reduction target.

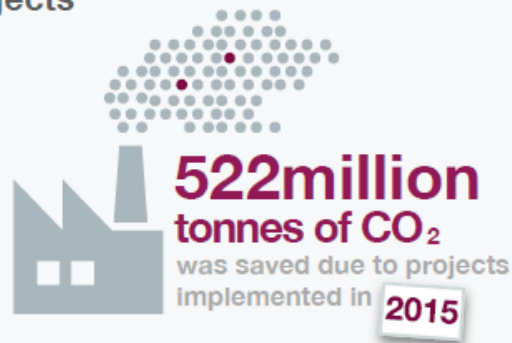
62%

have absolute and/or intensity targets covering 90-100% of their operations for scope 1+2.

8%

have absolute and or intensity targets covering 90-100% of their operations for scopes 1,2 and 3.

Projects



For every

US \$5

invested in such projects

1 tonne of

is saved.



CDP sector research for investors

- Focus on environmental metrics for key sectors: Transport, Utilities, Materials/Chemicals, Metals & Mining, Consumer Goods, & Oil & Gas
- Flags **material environmental and regulatory issues** within each sector and the potential impact on companies' financials
- Combines metrics to create a 'super league table'
- Identifies topics for company dialogue and benchmarking for engagement



Cement



League Table rank	2016 League Table rank	Company	Ticker	Stock exchange listing	Average market cap 2017 (US\$bn) ^(a)	2016 cement production (million tonnes) ^(b)	League Table weighted rank	Transition risks rank	Physical risks rank	Transition opportunities rank	Climate governance & strategy rank
1	n/a	Dalmia Bharat	DBEL IN	NSE India	3.4	15	4.64	1	9	2	4
2	n/a	Ambuja Cement ^(c)	ACEM IN	NSE India	7.7	21	5.62	3	11	12	1
3	5	Cementos Argos	CEMARGOS CB	Colombia SE	5.3	14	5.90	7	2	7	2
4	2	Shree Cement	SRCM IN	NSE India	9.4	20	5.91	2	13	3	7
5	1	LafargeHolcim ^(d)	LHN SW	SIX Swiss SE	34.8	233	6.03	8	6	4	3
6	6	HeidelbergCement	HEI GR	Deutsche Borse	19.3	125	6.08	9	7	1	5
7	4	CRH	CRH ID	Irish SE	29.7	34	6.85	6	4	5	9
8	n/a	ACC ^(e)	ACC IN	NSE India	4.7	23	7.02	4	10	6	10
9	8	UltraTech Cement	UTCEN IN	NSE India	17.0	48	7.32	5	12	10	8
10	7	CEMEX	CEMEXCPO MM	Mexico SE	12.6	67	8.04	12	8	8	6
11	10	Taiheiyo Cement	5233 JP	Tokyo SE	4.7	32	8.58	11	1	11	12
12	11	Cementir Holding	CEM IM	Borsa Italiana	1.1	10	9.00	10	5	9	13
13	n/a	Asia Cement Corporation ^(f)	1102 TT	Taiwan SE	3.1	34	9.80	13	3	13	11

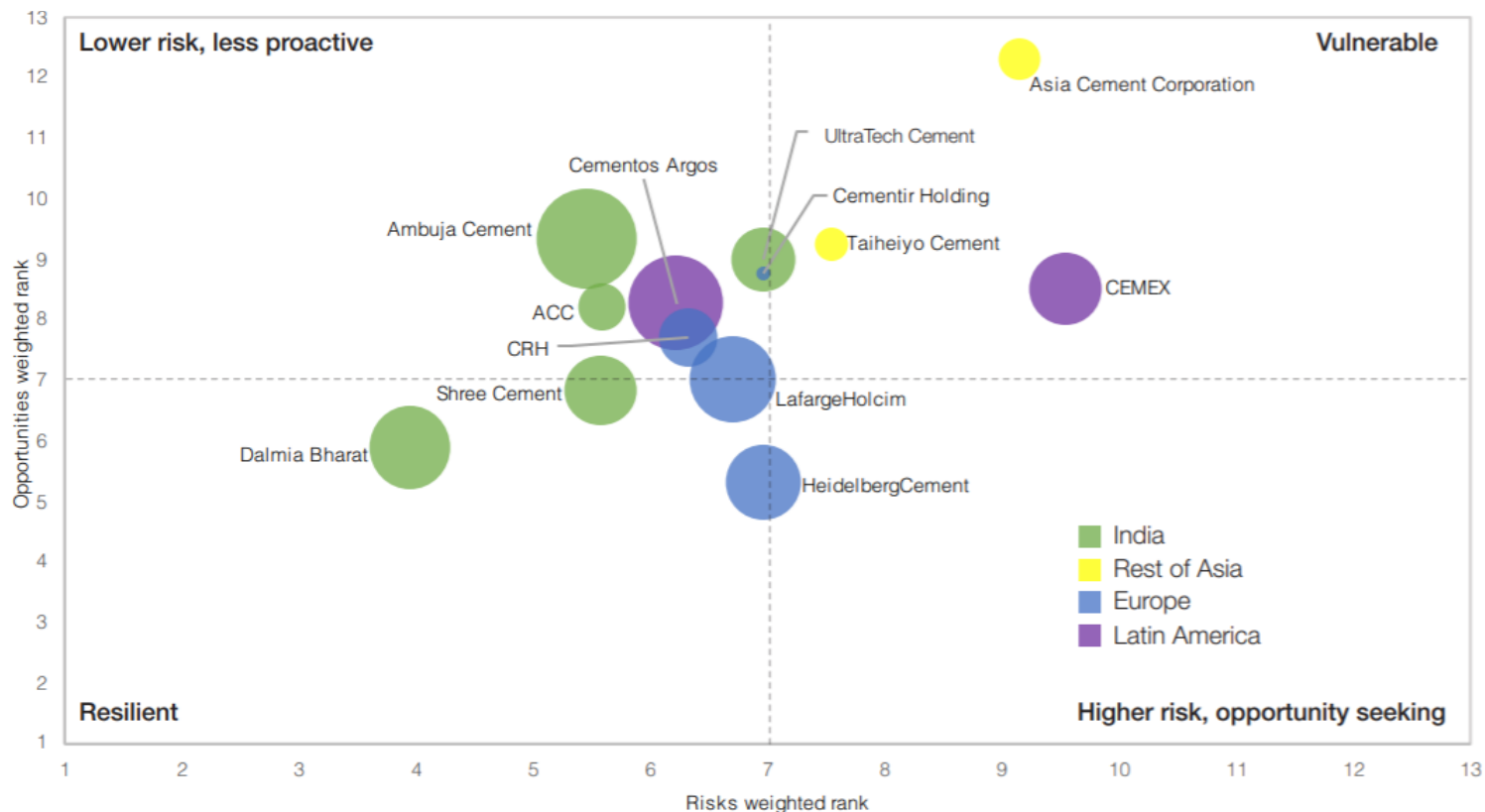
Weighting

<https://www.cdp.net/en/investor/sector-research/cement-report>

www.cdp.net | @CDP

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Steel – opportunity vs risk for low-carbon transition



Bubble size: Larger bubble = stronger performance on climate governance & strategy
Source: CDP

Sector League Table – Steel



League table rank	Company	Country	Market cap 2015 average (US\$m)	2015 steel production (m tonnes)	League Table score	Emissions & energy management	Emissions pathways & targets	Carbon cost exposure	Low carbon technology development	Water resilience	Climate governance
1	POSCO	South Korea	16,984	42	4.6	A	C	B	A	A	B
2	SSAB	Sweden	2,437	8	4.9	B	A	B	A	B	C
3	ThyssenKrupp	Germany	13,570	17	5.2	C	B	A	C	A	B
4	Hyundai Steel	South Korea	6,841	20	5.4	A	A	A	D	D	C
5	ArcelorMittal	Luxembourg	14,115	97	5.7	A	C	C	A	B	E
6	Nippon Steel & Sumitomo Metal Corp (NSSMC)	Japan	22,272	46	6.1	B	B	C	B	C	E
7	China Steel	Taiwan	11,314	15	6.4	B	C	D	B	C	A
8	JFE Holdings	Japan	12,097	30	7.1	C	C	D	B	D	D
9	Kobe Steel	Japan	5,713	8	7.8	D	E	C	B	C	C
10	JSW Steel	India	3,506	12	8.2	C	D	D	D	E	A
11	CSN	Brazil	2,222	5	8.6	D	E	C	E	A	B
12	Evrast	United Kingdom	2,890	14	9.0	D	E	C	E	D	C
13	Tata Steel	India	4,517	26	10.1	E	D	E	C	E	C
14	US Steel	USA	2,715	15	10.3	E	E	E	E	C	D

Steel – Non-responders to CDP

Non-responders to CDP

Company	Country	Market cap 2015 average (US\$m)	2015 crude steel production (million tonnes)	First year approached by CDP	Public disclosure of carbon emissions
Wuhan Iron and Steel (A)	China	7,477	26	2009	No quantitative data
Nucor Corporation	USA	14,247	20	2006	No quantitative data
Novolipetsk Steel OJSC	Russia	7,410	16	2010	Partial (emissions intensity)
Steel Authority of India	India	3,968	14	2007	Partial (emissions intensity)
Inner Mongolian Baotou Steel Union (A)	China	19,845	12	2009	None
Severstal PAO	Russia	9,019	12	2009	No quantitative data

Source: CDP, Bloomberg, World Steel Association

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2018 supply chain members: 115 companies with over US\$3.3 trillion in combined purchasing power, requesting data from over 11,500 suppliers

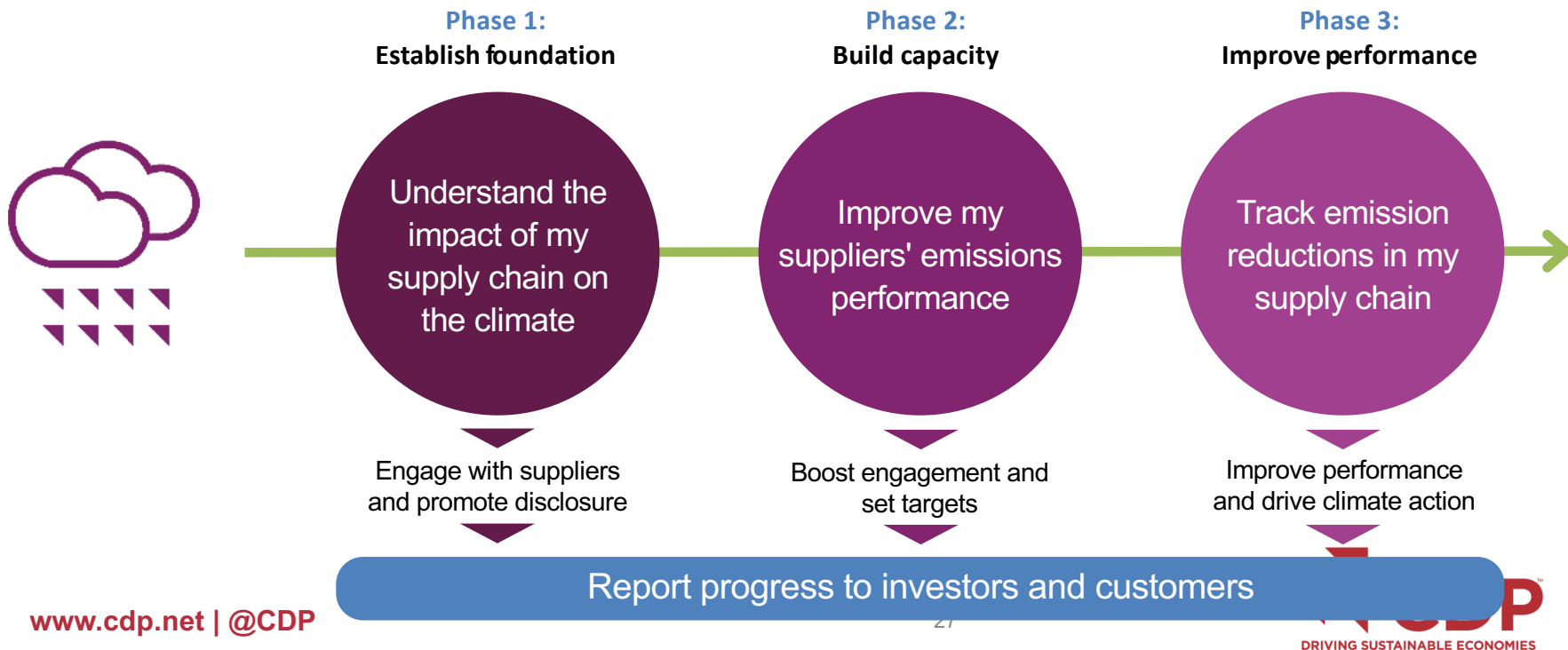


Risks in the supply chain are material business issues

- ▼ Scale of emissions
- ▼ Investor pressure to improve climate performance
- ▼ Potential business disruption
- ▼ Increased costs of new regulations
- ▼ Reputational risk from extended responsibility
- ▼ Untapped efficiency gains driving unnecessary cost increases
- ▼ Loss of market share from shifting customer demands



Roadmap for members' supplier engagement strategy



Roadmap for responding suppliers

Disclosure works



Phase 1: Establish foundation

Phase 2: Build capacity

Phase 3: Improve performance

Supplier improvement over time

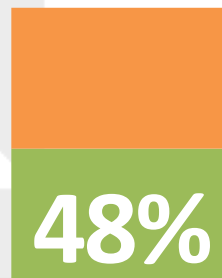
Disclosure works

First-time disclosers

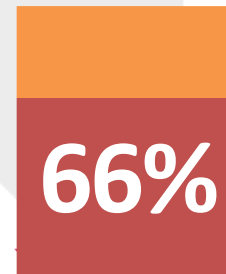
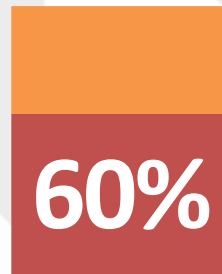
Second-time disclosers

Third-time disclosers

Percent of disclosers who have
emissions reduction initiatives



Percent of disclosers who have set
company-wide targets and goals



US\$12.4 billion

savings from emissions reduction
projections reported by 2,151 supplier
respondents

US\$100,000

Minimum savings reported for over one third of
emissions reduction projects



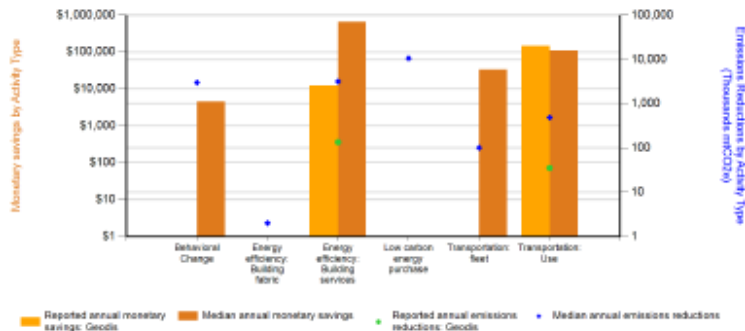
Action Exchange

CDP Action Exchange supplier action plan report prepared for DEMO SUPPLIER



Opportunities for DEMO SUPPLIER to reduce emissions

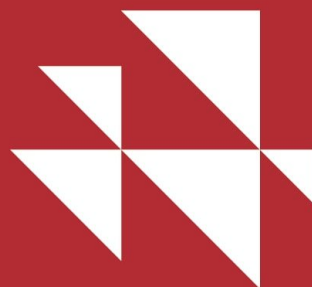
Emissions and monetary savings reported by companies in the Air Freight transportation and Logistics industry in 2016



Companies in the Air Freight transportation and Logistics Industry Group reported significant emissions reductions through the CDP Supply Chain questionnaire. Here is how your company stacks up against the most high-impact project types reported by your peers in 2016.

CDP's summary recommendations

- As a leading company recognized by CDP you have already implemented many emission reduction activities. When looking at other leaders across the sectors we are seeing increased levels of digitization driving emission reductions in operations and logistics. Typically the introduction of digital starts with sporadic asset level monitoring. However companies are taking the next steps to consolidate and manage data across plants and fleets, applying analytics to gain insights, implementing predictive analytics and optimizing performance in a more comprehensive way.
- For the 3rd year in a row CDP has heard from companies in your sector that upgrading a companies lighting systems to more energy efficient units has quick rate of returns on investments (payback period of under 2 years). A slight change we are seeing come into the market is companies talking to vendors about lighting as a service as opposed to a capital expenditure.
- Consider procurement of renewable electricity sourced from generators and suppliers in the market: This can take the form of green electricity contracts with utilities, Power Purchase Agreements (PPAs) or renewable electricity certificates. If you are looking to find out more CDP would recommend investigating RE100. RE100 is an initiative of businesses who have set a public goal to procure 100% of their electricity from renewable sources of energy by a specified year. <http://there100.org>



CDP™
**ACCREDITED
PROVIDER
2018**

Case study – Action Exchange

Creative incorporated recommendations from CDP's action plan into their sustainability goals/business plan and implemented them.

Replaced hydraulic machines with all-electric:

50% reduction in energy consumption

Investment payback period: 2.5 years

**Worked with a CDP recommended solutions provider –
Phillips Lighting – to switch all lighting to LED.**



Creative Group of Industries


Plastics manufacturer based in India

Supplier to Unilever and Walmart

Potential savings for Creative as a result of AEX

GHG reductions: 20,000 MtCO₂e

Cost: US\$2million a year



You can't say you're stuck in traffic, because you are part of the traffic jam. Similarly, you can't say you have a supply chain, because you are part of a supply chain.

~ Bruno Sarda



Case study: Walmart



DRIVING AMBITIOUS CORPORATE CLIMATE ACTION

ProjectGigaton™

Six Pillars of the Program



Fleet

- An “on-ramp” and accelerator
- Suppliers can report through CDP or by pillar
- Walmart encourages public targets + reporting

Walmart was the first retailer with a science based target – which includes:

- **18% reduction in absolute emissions** in own operations (Scopes 1 & 2) by 2025
- **Project Gigaton** – working with suppliers to eliminate **1 billion metric tons of GHG by 2030** in value chain (Scope 3)



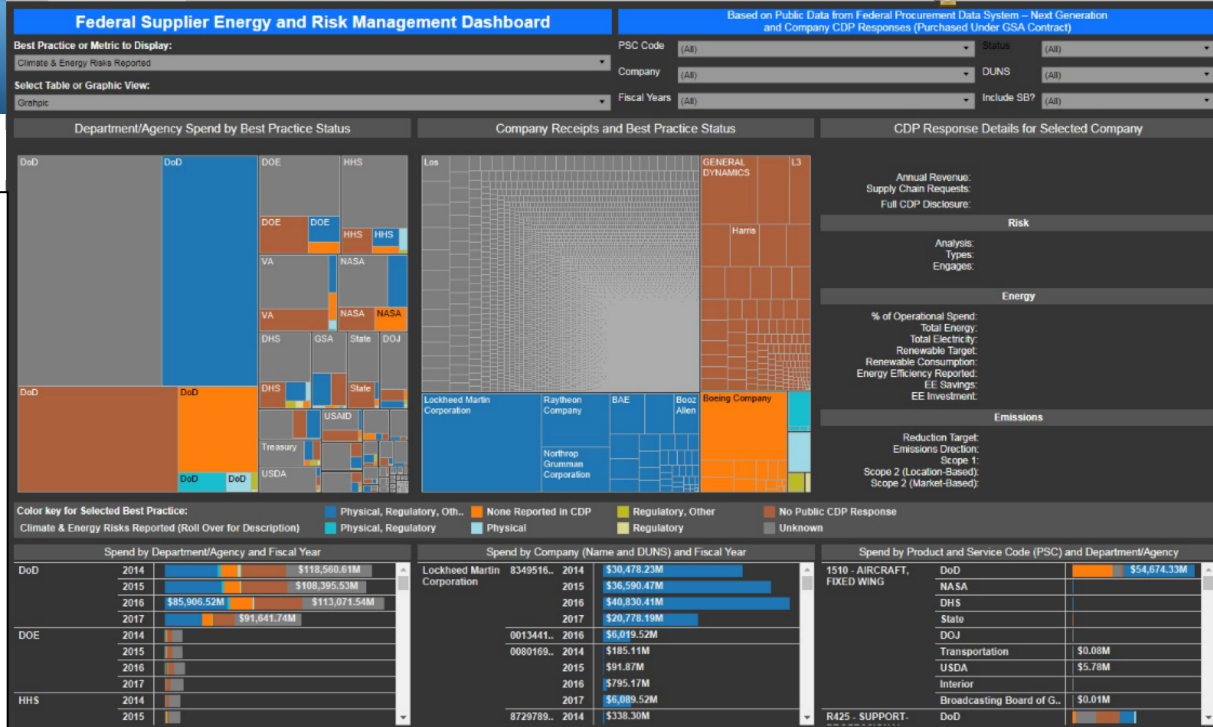
Case study: GSA



Council on Environmental Quality

Federal Supplier Greenhouse Gas Management Scorecard

Company	Total USG Contracts FY 2016	Discloses Emissions	Emissions Target(s)	Discloses Climate Risk
Lockheed Martin	\$ 36,250,911,071	●	●	●
Boeing	\$ 16,640,781,380	●	●	●
General Dynamics	\$ 13,632,984,914	●	●	●
Raytheon	\$ 13,114,246,705	●	●	●
Northrop Grumman	\$ 10,637,246,771	●	●	●
McKesson Corporation	\$ 8,358,491,281	●	●	●
United Technologies Corporation	\$ 6,792,039,706	●	●	●
L-3 Communications	\$ 5,450,824,010	●	●	●
Bechtel	\$ 4,645,069,050	●	●	●
BAE Systems	\$ 4,436,736,025	●	●	●
AECOM [1]	\$ 4,062,295,723	●	●	●
Huntington Ingalls Industries	\$ 3,658,243,434	●	●	●
Humana	\$ 3,606,978,123	●	●	●
SAIC	\$ 4,582,349,017	●	●	●
Booz Allen Hamilton	\$ 3,297,743,554	●	●	●
Harris Corporation [2]	\$ 3,237,669,460	●	●	●
Health Net	\$ 3,020,424,385	●	●	●



<https://obamawhitehouse.archives.gov/administration/eop/ceq/initiatives/sustainability/supplier-GHG>

<https://d2d.gsa.gov/report/gsa-ogp-federal-supplier-energy-risk-management-erm-tool>

Case study:



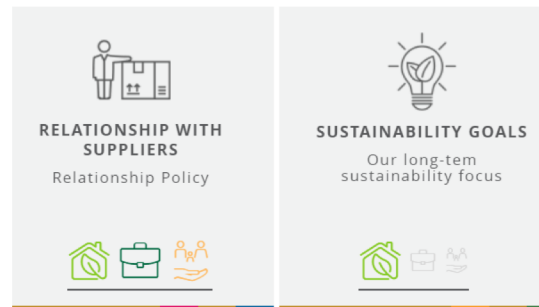
▼ One of the largest construction companies and land developers in Latin America – largest player in Brazil's mid-level to affordable housing market

▼ Engaging top 50 suppliers on CDP Climate and CDP Water disclosure

▼ Carbon Life Cycle analysis

▼ Internal carbon pricing to select products

▼ Analysis of vulnerability and risks regarding climate changes



▼ Engage suppliers of **steel** and **cement** (among other materials) to select the products for projects **based not only on price but also carbon data**.

Case study:



- ▼ One of the five so called Japanese "super general contractors"
- ▼ Committed to set a Science-Based Target (Scopes 1, 2 and 3)
- ▼ Engaging top 80 suppliers on CDP Climate disclosure (since 2014)
- ▼ Applying Green Procurement Guidelines: based on Japan's Green Procurement Act

Examples:

- ▼ Purchasing Steel products generated in an electric arc furnace (EAF)
- ▼ Purchasing Slag cement (B- and C-Type) with lower manufacturing emissions
- ▼ Using concrete without cement (80% less emissions)



Content

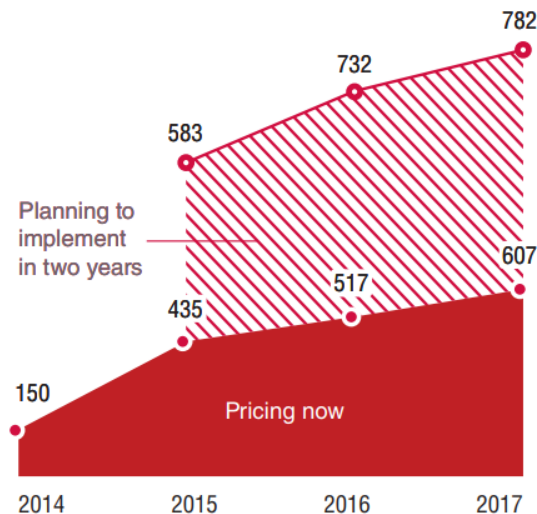
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Commit to Carbon Pricing

Released in 2013: now carbon pricing on the increase

- ▼ In 2017 nearly 1,400 companies – including 100 Fortune 500 – disclosed that they are currently using, or planning to implement, an internal carbon price within two years.
- ▼ Setting an internal carbon price on the rise (8 fold increase in 4 years) for major multinationals (CDP 2017 report)
- ▼ Chinese companies pricing carbon have doubled since 2015; Asian companies pricing has increased from 0 in 2014 to 400 today

Growth of internal carbon pricing



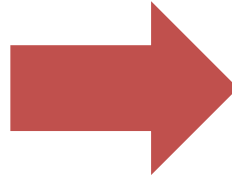
CARBON PRICING LEADERSHIP COALITION

<https://www.cdp.net/en/climate/carbon-pricing>

www.cdp.net | @CDP

Commit to 100% renewable energy

Companies joining **RE100** make a global, public commitment to **100% renewable electricity** through **procurement** and/or **production**.



RE



Interface[®]

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Set science-based targets

Setting GHG reduction targets in line with climate science demonstrates alignment with a below 2 degree future.

1. Commit to setting a target
2. Submit target
3. Have target approved by SBTi

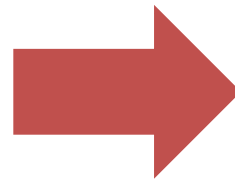
Walmart



SONY



MARS

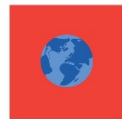


SCIENCE
BASED
TARGETS

DRIVING AMBITIOUS CORPORATE CLIMATE ACTION

ACT Project

ADEME



Agence de l'Environnement
et de la Maîtrise de l'Energie

Commitment

Has your company committed to a low-carbon future vision?

Are your emissions reduction targets ambitious enough to get there?

How quickly are you planning to act?

Transition plan

Do you have a transition plan to achieve your low-carbon vision?

Will it drive the evolution of your business?

Present

Does your current strategy lead to a decrease in emissions in the short-term?

Are your investment decisions today made with the long-term future in mind?

Legacy

How do the business decisions you made in the past influence your emissions trajectory?

Consistency

Is your business strategy consistent with your emissions reduction targets?

Do any of your activities undermine your ability to reach a low-carbon future?

ACT Rating

The ACT rating combines quantitative and qualitative information on your past, present and projected future to reveal your alignment with the low-carbon transition.



ACT | **ASSESSING LOW CARBON TRANSITION**

► Electric Utility, Auto
Manufacturers and
Retail sectors

► <http://actproject.net>

Influencing clean procurement for the cement and steel sectors

Employ the lever of clean procurement to:

- ▼ Recruit more Infrastructure, Construction and Real Estate Investment Trusts (REITs) to begin to engage their supply chains
- ▼ Use the power of clean procurement to reinforce the need for SBTs in the cement and steel sectors
- ▼ Change the assumptions long held by these industries – and their key stakeholders – that they cannot operate in a low carbon world by highlighting ‘first mover’ companies who have successfully transitioned their business models

New CDP questionnaires for 2020

Non-Financial Groups				Financial Sector
Energy	Transportation	Materials and Buildings	Agriculture, Food and Forest Products	
<ul style="list-style-type: none"> Oil and Gas Coal Electric Utilities 	<ul style="list-style-type: none"> Air Freight Passenger Air Transportation Maritime Transportation Rail Transportation Trucking Services Automobiles and Components 	<ul style="list-style-type: none"> Metals and Mining Chemicals Construction Materials Capital Goods Real Estate Management and Development 	<ul style="list-style-type: none"> Beverages Agriculture Packaged Foods and Meats Paper and Forest Products 	<ul style="list-style-type: none"> Banks Insurance Companies Asset Owners Asset Managers

- fully covered
- not covered or partially covered

*Opportunity for multiple rounds of open consultation

Thank you.

Betty Cremmins
Director, CDP West
betty@cdp.net