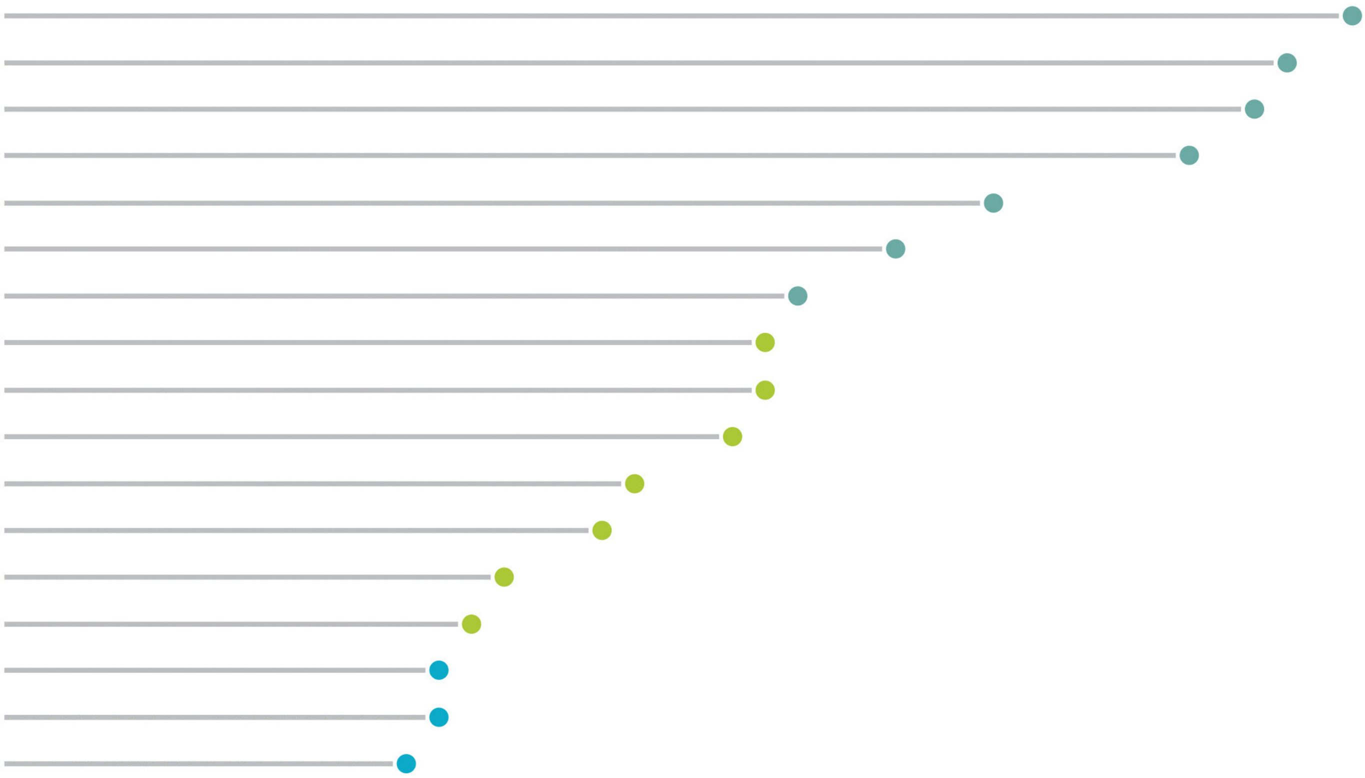
MORNINGSTAR® | SUSTAINALYTICS

Material Risk Engagement

2023 Annual Report



Material Risk Engagement promotes and protects long-term value by engaging with high-risk companies on financially-material ESG issues.

Contents

Material Risk Engagement Approach

Morningstar Sustainalytics' Material Risk Engagement (MRE) engages with high-risk companies on the material ESG issues with the greatest levels of unmanaged risks. The purpose is to protect and develop long-term value in our clients' portfolio companies. MRE is an engagement overlay of Sustainalytics' flagship product, ESG Risk Ratings.

The Stewardship team will engage with companies in Sustainalytics' Ratings universe, consisting of more than 4,500 investable issuers in developed and emerging markets, which have an ESG Risk Ratings score of 30 or more. The ESG Risk Ratings score reflects the unmanaged ESG risk, so the higher the score, the more risk the company is exposed to.

The engagement is driven by constructive dialogue. The research from the ESG Risk Ratings and the Controversies research are leveraged to encourage companies to cover gaps in Material ESG Issues risk management. Engagement response, progress, positive developments, and milestones are consistently tracked to measure commitment and capability to change in addition to the engagement activities conducted. When a company improves by bringing the ESG Risk Ratings score to below 28, the MRE case will be considered resolved.

Executive Summary

Palle Ellemann
Director and Product Manager
for Material Risk Engagement

We are delighted to report on the activities and results of the Material Risk Engagement (MRE) programme for Q4 and the full year of 2023. It has proven to be a year where the engagement activities have contributed to significant impact and we have been able to resolve a record-number of engagements successfully. During 2023, we have resolved 30 engagements, which is the step taken when the companies we engage improve to an ESG Risk Rating score below 28, indicating a move into the medium ESG Risk Rating category, and lower unmanaged ESG risk. As a reference, we resolved seven engagements in 2022.

By the end of 2023, MRE engages with 348 companies compared to 363 companies as we started out the year. During 2023, we have engaged with a total of 410 companies, and since the beginning of the MRE programme in March 2020, we have in total engaged with 573 companies.

Besides resolved engagements, we tracked 354 Positive Developments in relation to engagement objectives and suggested actions, which is also record-high and 15% better than 2022. By the end of 2022, we implemented the milestone structure, where we track progress over five milestones towards the end goal of moving the companies into the medium-risk category. During 2023, we have collectively recorded 221 milestones achieved.

The engagement results are produced by engagement managers developing strong and constructive engagement dialogues with the companies. During 2023, the MRE team has conducted 233 meetings and exchanged 1,478 emails/phone calls. The suggested actions we deliver to companies are guiding them in an ESG space that is increasingly overwhelming companies new to the area. For the more experienced companies, we are helping them to finetune and raise the bar for ESG risk management practices and to provide investors with relevant and insightful ESG disclosure.

Focus on Impact

In order to develop a better understanding of the impact of the engagement within the MRE programme, the Positive Developments have been mapped against the 17 Sustainable Development Goals (SDG). The mapping shows that more than 300 Positive Developments contribute to SDG 16 Peace, Justice and Strong Institutions. The second-most frequent impact on the SDGs is related with SDG 13 Climate Action. We are also delighted to see that again in 2023 the companies we have engaged with a minimum of two meetings improve their ESG risk management three times faster than average companies.

Is there a Sustainable Solution for Oil Sands?

Our Canada-based engagement manager, Shane Tiley, has elaborated an article sharing insight to the analysis and engagement dialogue with Canadian oil sands producers. The energy intensive oil production is exploring opportunities for carbon capture and storage (CCS) as a pathway in the low carbon transition.

Investor Involvement in the Post-SDG Agenda

Our engagement manager with a background in the UN-system, Matthew Gray, is sharing insight to investors' opportunities to influence what should come next to the Sustainable Development Goals post 2030. He argues that investors, ESG and emerging market corporations should play a vital role in the next sustainable development initiatives coming from the UN.

Looking Ahead

In 2024, we anticipate our engagement activities will remain high and we will continue to replace resolved engagements with new companies. We look forward to launching the new initiative with Client Consultation Panels, to provide clients with the opportunity to discuss ideas for improvements and how we can ensure clients maximum value of their participation in MRE. If you are not yet signed up to this initiative or want to hear more, feel free to reach out to **MRE@sustainalytics.com**.

As a reminder, we have moved our reporting period to align with calendar quarters and this annual report also includes Q4 2023 reporting. The next quarterly report will be delivered to clients by mid-April covering Q1 2024.

As always, clients are welcome and encouraged to participate in Sustainalytics' engagement activities. You can follow our scheduled meetings in the calendar found in Global Access, or via the weekly engagement brief. For general questions or feedback regarding Material Risk Engagement, please email mre@sustainalytics.com or your client team.

Engagement Overview

347
Engagements as of December 31, 2023

43
New engagements

573
Companies engaged since March 2020

SDG 13
Linked to 61% active engagements

Asia Pacific Region with the largest number of engagements

Oil & Gas Producers and Utilities
Industries with most engagements

Disclosure
Top material ESG topic in engagement dialogues

Engagement Status

When we open an engagement, the status is Engage. We will then pursue engagement until we change status to:

Resolved The company has achieved the engagement objective.

Archived Engagement is concluded, the engagement objective has not been achieved.

Disengage Engagement is deemed unlikely to succeed.

363 Engagements as of January 01, 2023

43 New Engagements

30 Resolved Engagements

37 Archived Engagements

0 Disengaged Engagements

348 Engagements as of December 31, 2023

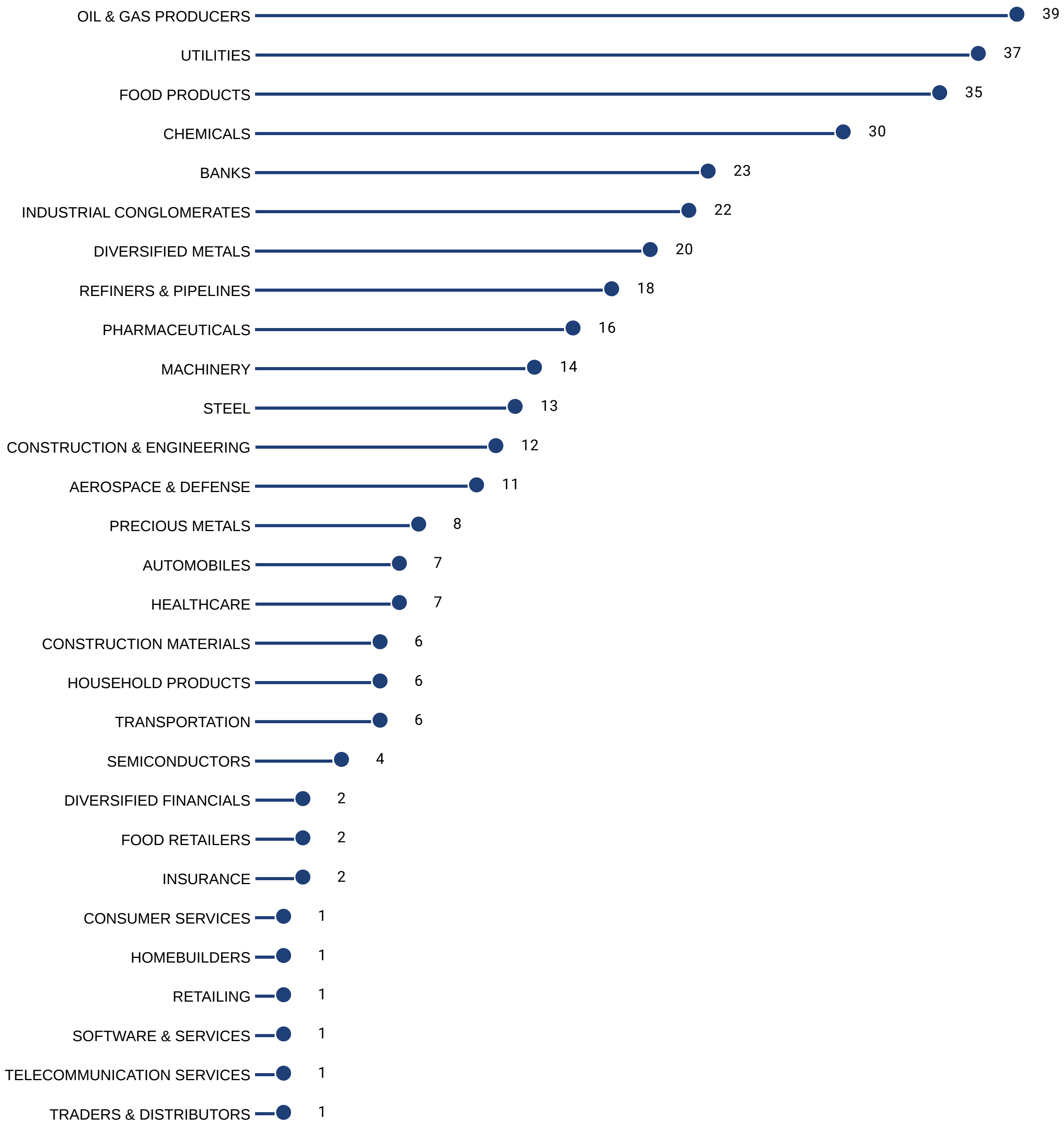
In total, 410 engagements during Year 2023

Active Engagements by ESG Risk Ratings Categories

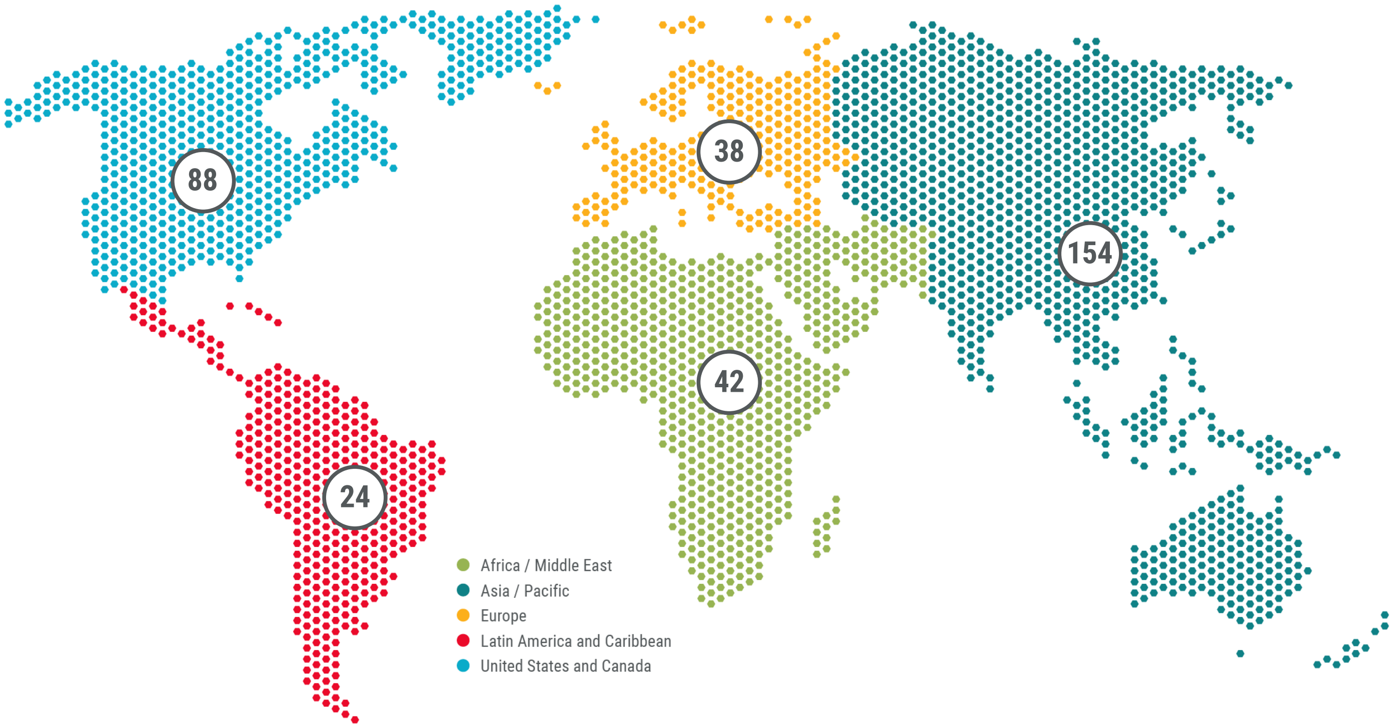
Active Engagements by ESG Risk Ratings Categories

Negligible (0-10)	Low (10-20)	Medium (20-30)	High (30-40)	Severe (40+)
		16% (28-30)	66%	18%

Industry Distribution



Engagements by Headquarter Location



E, S and G Overview

E, S and G Overview

Note : Stewardship can cover one or more issues and objectives reflected in overlapping issue statistics.

Engagement Topics

During the reporting period, our engagements addressed a number of topics across the environmental, social, and governance pillars.

ENGAGEMENT TOPICS	ENGAGEMENTS
Disclosure	154
Net Zero Decarbonization	129
ESG Governance	115
Climate Change	77
Product Quality and Safety	67
Water Security	58
Community Relations	50
Human Capital	50
Business Ethics, Bribery and Corruption	49
Occupational Health and Safety	42
Water Quality	39

Engagement Topics Cont.

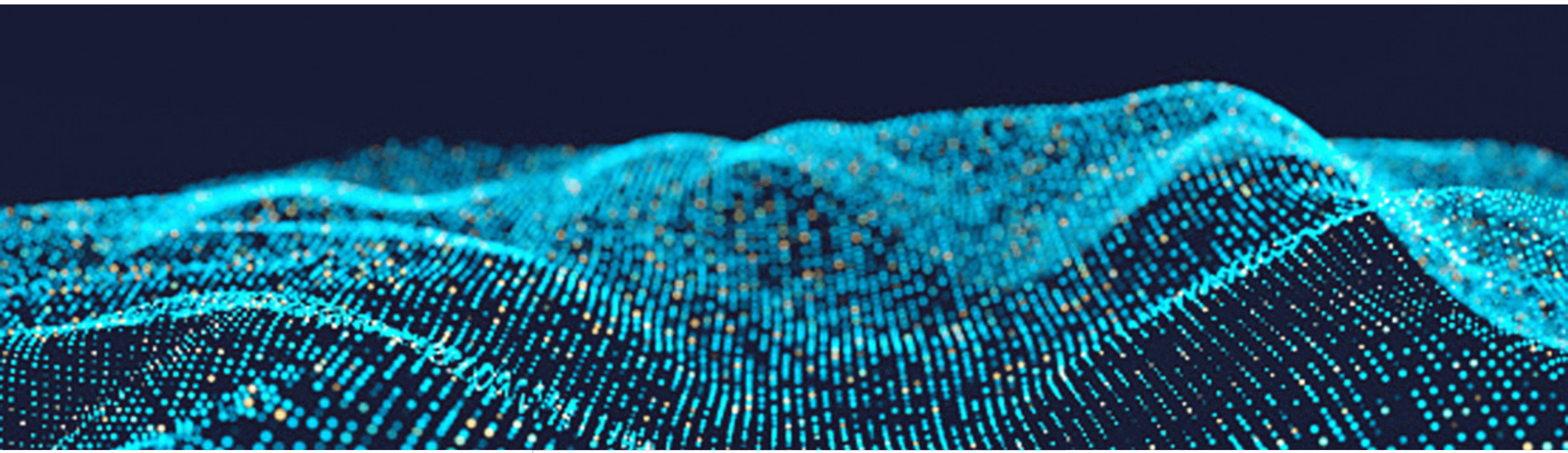
ENGAGEMENT TOPICS	ENGAGEMENTS
Board Composition	32
Human Rights	31
Waste Management	27
Diversity, Equity and Inclusion (DEI)	25
Biodiversity	22
Land Pollution and Spills	18
Indigenous People	16
Labour Rights	16
Natural Resource Use	13
Data Privacy and Security	12
Deforestation	11
Child Labour	9
Marketing Practices	8
Air Pollutant Emissions	6
Circular Economy	4
Forced Labour	3
High-Risk Territories	3
Weapons	3
Shareholders Rights	2
Just Transition	1

Sustainable Development Goals – Mapping Engagements

All engagements are mapped to the 17 UN Sustainable Development Goals (SDGs). The mapping is done by Sustainalytics and refers to the focus and objective(s) of the engagement.

SDG	Share	SDG	Share
1 No Poverty	1%	10 Reduced Inequality	2%
2 Zero Hunger	1%	11 Sustainable Cities and Communities	21%
3 Good Health and Well-Being	13%	12 Responsible Consumption and Production	44%
4 Quality Education	0%	13 Climate Action	61%
5 Gender Equality	4%	14 Life Below Water	1%
6 Clean Water and Sanitation	6%	15 Life on Land	5%
7 Affordable and Clean Energy	19%	16 Peace and Justice, Strong Institutions	60%
8 Decent Work and Economic Growth	21%	17 Partnerships to Achieve the Goal	3%
9 Industry, Innovation and Infrastructure	14%		

Engagement Results



233
Meetings, including 5 in-person meeting

1478
Emails and phone calls exchanged

30
Engagements resolved

221
Milestones Achieved

354
Positive Developments

56%
Engagements with good or excellent response

44%
Engagements with standard progress

Engagement Response

We rate the company response to the engagement dialogue and willingness to engage with investors on five-point scale:

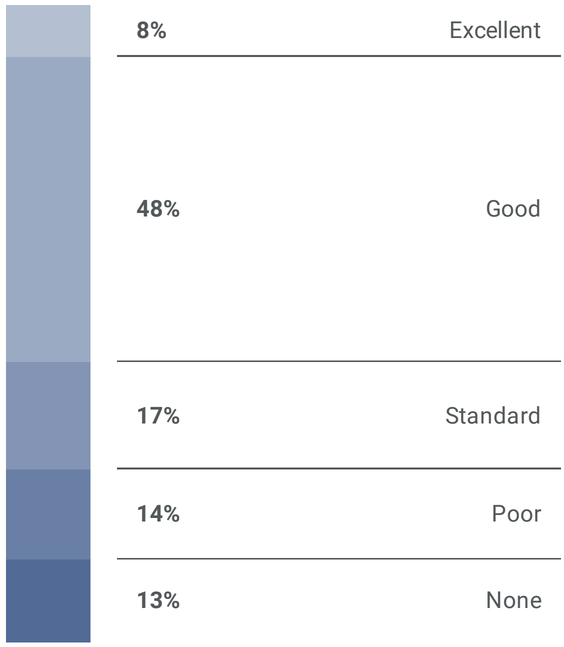
Excellent The company is proactive in communicating around the issues related to the change objective.

Good The company addresses all the issues related to the change objective.

Standard The company provides responses to some of the issues related to the change objective.

Poor The company has initially responded but not properly addressed the issues related to the change objective and is unwilling to engage further with us.

None The company has not responded to the inquiries.



Engagement Progress

The rating of Progress reflects the pace and scope of changes towards the engagement objective that the company is making. We rate progress according to a five-point scale:

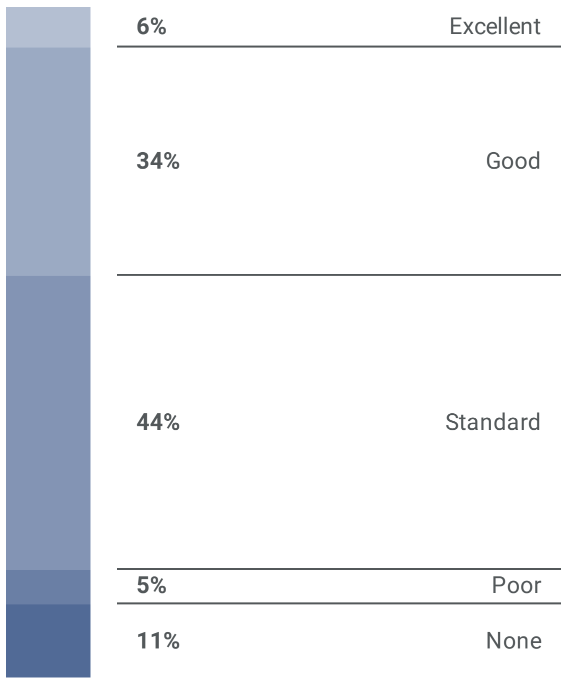
Excellent The company has adopted a proactive approach and addressed the issues related to the change objective.

Good The company has taken sufficient measures to address the issues related to the change objective.

Standard The company has undertaken a number of measures to address the issues related to the change objective.

Poor The company has indicated willingness to addressing the issues related to the change objective, but no measures have been taken yet.

None The company has not made any progress against the engagement objective.

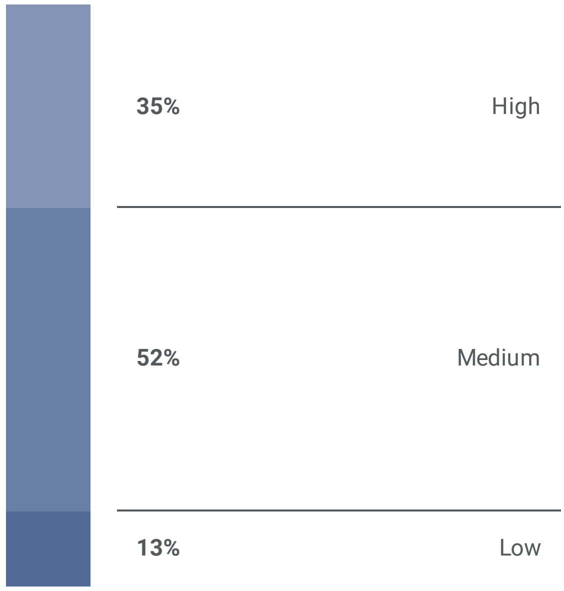


Engagement Performance

High Good or excellent Response in combination with good or excellent Progress.

Medium Standard level of Response and Progress.

Poor Poor or no Response in combination with poor or no Progress.



Quarterly Overview of Engagement Results

	Q1	Q2	Q3	Q4	FULL YEAR
Emails/Phone Calls Exchanged	330	426	401	321	1,478
Meetings Conducted	46	60	54	73	233
Positive Developments	82	119	72	81	354
Milestones Achieved	54	80	44	43	221
Engagements Resolved	2	11	4	13	30

Engagements Resolved

COMPANY	COUNTRY	INDUSTRY	ISSUE	QUARTER
Arjo AB	Sweden	Healthcare	Focus on Risk Assessment and ESG Disclosure	Q4
China Merchants Bank Co., Ltd.	China	Banks	Focus on ESG Integration Financials	Q4
Contemporary Amperex Technology Co., Ltd.	China	Electrical Equipment	Focus on ESG Disclosure	Q4
Demant A/S	Denmark	Healthcare	Focus on Risk Assessment and ESG Disclosure	Q4
easyJet Plc	United Kingdom	Transportation	Focus on Carbon Own Operations	Q4
FMC Corp.	United States of America	Chemicals	Focus on Emissions, Effluents and Waste and Community Relations	Q4
Horizon Therapeutics Plc	Ireland	Pharmaceuticals	Focus on Corporate Governance and Business Ethics	Q4
Impala Platinum Holdings Ltd.	South Africa	Precious Metals	Focus on Occupational Health and Safety	Q4
Nissan Motor Co., Ltd.	Japan	Automobiles	Focus on Carbon Products and Services	Q4
POSCO Holdings Inc.	South Korea	Steel	Focus on Risk Assessment and Corporate Governance	Q4
Sumitomo Heavy Industries, Ltd.	Japan	Machinery	Focus on Human Capital	Q4
thyssenkrupp AG	Germany	Industrial Conglomerates	Focus on Carbon Own Operations	Q4
TransAlta Corp.	Canada	Utilities	Focus on Emissions, Effluents and Waste and Resource Use	Q4
MTN Group Ltd.	South Africa	Telecommunication Services	Focus on Data Privacy and Security	Q3

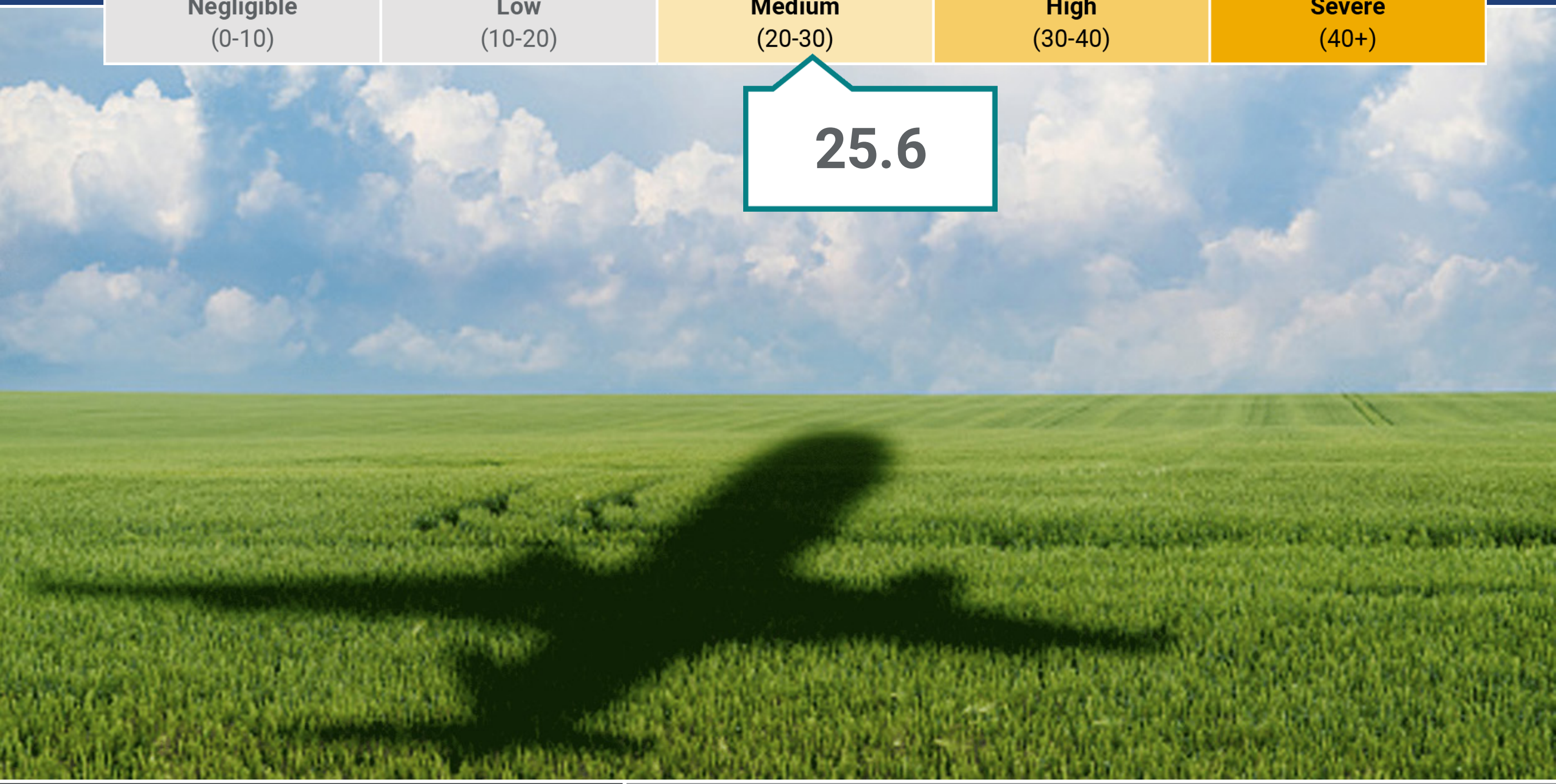
COMPANY	COUNTRY	INDUSTRY	ISSUE	QUARTER
Otsuka Holdings Co., Ltd.	Japan	Pharmaceuticals	Focus on ESG Disclosure	Q3
Tata Motors Ltd.	India	Automobiles	Focus on Carbon Products and Services	Q3
Uber Technologies, Inc.	United States	Software & Services	Focus on Business Ethics	Q3
Albemarle Corp.	United States	Chemicals	Focus on Emissions, Effluents and Waste	Q2
BAE Systems Plc	United Kingdom	Aerospace & Defense	Focus on Product Governance	Q2
Companhia Siderurgica Nacional	Brazil	Steel	Focus on Risk Assessment and Corporate Governance	Q2
Dr. Reddy's Laboratories Ltd.	India	Pharmaceuticals	Focus on Product Governance	Q2
FirstEnergy Corp.	United States	Utilities	Focus on Carbon Own Operations	Q2
Hankyu Hanshin Holdings, Inc.	Japan	Transportation	Focus on Carbon Own Operations	Q2
Hexagon Composites ASA	Norway	Machinery	Focus on Risk Assessment and ESG Disclosure	Q2
Melrose Industries Plc	United Kingdom	Industrial Conglomerates	Focus on Carbon and Resource Use	Q2
Nissin Foods Holdings Co., Ltd.	Japan	Food Products	Focus on Corporate Governance	Q2
RUMO SA	Brazil	Transportation	Focus on Carbon and Community Relations	Q2
Sime Darby Plantation Bhd.	Malaysia	Food Products	Focus on Occupational Health and Safety and Human Capital	Q2
Grieg Seafood ASA	Norway	Food Products	Focus on Product Governance	Q1
Skyworks Solutions, Inc.	United States	Semiconductors	Focus on Carbon and Resource Use	Q1

Resolved - BAE Systems PLC

ESG Risk Ratings Score

Negligible (0-10)	Low (10-20)	Medium (20-30)	High (30-40)	Severe (40+)

25.6



INDUSTRY:
Aerospace and Defense

BASE LOCATION:
United Kingdom

ENGAGEMENT FOCUS:
Product Governance
Carbon – Products and Services
Data Privacy and Security

RATIONALE FOR RESOLVED STATUS:
BAE Systems PLC has improved their ESG Risk Rating score to below 28.

Positive Development Highlights:

- In its 2022 annual disclosure, BAE Systems formally recognized ESG as important in its long-term financial sustainability by introducing an ESG component to it long-term incentive plan with a 10% weight.
- The company's website explains that product safety is assessed as part of the Operational Assurance Statement, which is a key biannual governance process owned by the Internal Audit function. As part of this process, relevant incidents undergo appropriate independent investigations.
- In its 2022 annual disclosure, BAE Systems provided information on its cyber resilience infrastructure, including how its Security Operations Centres in the UK and the US perform continual monitoring of the core networks. The company explained the application of the Cyber Incident Response plan in the event of a cyber incident, how it feeds into the Group's crisis management system, and regular testing of the procedures across the business and up to the Executive Committee.
- In its 2022 annual disclosure, BAE Systems sharpened its climate disclosure providing investors with a clearer and a more focused overview of its net zero roadmap, including reduction levers and activities with time horizons, progress made in 2022, and pipeline. In addition, the issuer improved the quality and comprehensiveness of its TCFD reporting.

In the latest update of the ESG Risk Rating, BAE Systems has improved its Risk Rating score by 4.9 points, bringing it into the medium risk category and below our 28-point threshold for engagement.

Resolved - Contemporary Amperex Technology Co., Ltd.

ESG Risk Ratings Score

Negligible	Low	Medium	High	Severe
(0-10)	(10-20)	(20-30)	(30-40)	(40+)

19.2

INDUSTRY:
Electrical Equipment

BASE LOCATION:
China

ENGAGEMENT FOCUS:
Product Governance
Corporate Governance
Whistleblowing
Human Capital

RATIONALE FOR RESOLVED STATUS:
Contemporary Amperex Technology Co., Ltd. has improved their ESG Risk Rating score to below 28.

Positive Development Highlights:

- The 2022 ESG Reports provides an overview of integrity training including all employees and the extensive governance structure for compliance management. Additionally, it shows clearly the procedures involved in managing incoming reports in the different whistleblowing channels.
- CATL provides in the 2022 ESG report further insight to the number of cases investigated violating code of ethics and how many have been transferred to legal actions.
- The updated Code of Conducts clarifies that local languages are allowed for whistleblowing and that it is allowed to report anonymously.
- In 2022, all production units in the company have been certified in accordance with IATF 16949: 2016 Automobile Quality Management System Standard or ISO 9001: 2015 Quality Management System.
- By the end of 2022, 100% of the production facilities with stable operations and certification qualification have passed the ISO 45001:2018 occupational health and safety management system certification.

In the latest update of the ESG Risk Rating, CATL's management score improved by more than 26 points, bringing the company into the low risk category and below the 28-point threshold for engagement.

Resolved - FirstEnergy Corp.

ESG Risk Ratings Score

Negligible (0-10)	Low (10-20)	Medium (20-30)	High (30-40)	Severe (40+)

25.6

INDUSTRY:
Utilities

BASE LOCATION:
United States of America

ENGAGEMENT FOCUS:
Carbon – Own Operations
Business Ethics
Occupational Health and Safety

RATIONALE FOR RESOLVED STATUS:
FirstEnergy Corp. has improved their ESG Risk Rating score to below 28.

Positive Development Highlights:

- FirstEnergy disclosed progress against the company's GHG emission reduction and carbon neutrality goals, including updates for its plan to transition away from coal and its investments in clean energy transition initiatives such as $10B from 2021-2025 to support a more resilient electric grid.
- In its 2021 Corporate Responsibility Report, FirstEnergy disclosed details of its Contractor Safety programme including information about contractor pre-qualification, contractor safety requirements, contractor oversight and evaluation of onsite safety performance.
- To understand the extent and locations of biologically important areas, FirstEnergy conducted a biodiversity exposure assessment of its fee-owned lands and rights-of-way. FirstEnergy does not operate within World Heritage sites. It does, however, maintain limited critical infrastructure within classified protected areas designated by the International Union for the Conservation of Nature (IUCN) and Key Biodiversity Areas. The company has set a goal to create 225 acres of biodiverse pollinator habitats by 2025 by planting seed mix in its transmission rights-of-way.

In the latest update of the ESG Risk Rating, FirstEnergy has improved its Risk Rating score by 3.8 points, bringing it into the medium risk category and below our 28-point threshold for engagement.

Resolved - Nissan Motor

ESG Risk Ratings Score

Negligible (0-10)	Low (10-20)	Medium (20-30)	High (30-40)	Severe (40+)

27.3

INDUSTRY:
Automobiles

BASE LOCATION:
Japan

ENGAGEMENT FOCUS:
Product Governance
Carbon – Own Operations
Corporate Governance

RATIONALE FOR RESOLVED STATUS:
Nissan Motor has improved their ESG Risk Rating score to below 28.

Positive Development Highlights:

- Nissan has developed an integrated materiality analysis covering the full scale of ESG. This has led to a more consistent and integrated ESG risk management structure and a broad framework for performance management.
- Nissan has integrated two ESG metrics in the long term incentive plan carrying a total weight of 10%. Product quality also carries a 15% weight in executive variable pay. This is building accountability to ESG in the top management.
- Nissan has started to report product recalls in the 2021 ESG report, which is giving investors insight to an important cost and potential reputational and liability risk.

In the latest update of the ESG Risk Rating, Nissan's management score improved by 13.6 points, bringing the company into the medium risk category and below the 28-point threshold for engagement.

Resolved - Posco Holdings, Inc.

ESG Risk Ratings Score

Negligible	Low	Medium	High	Severe
(0-10)	(10-20)	(20-30)	(30-40)	(40+)

24.2

INDUSTRY:
Steel

BASE LOCATION:
South Korea

ENGAGEMENT FOCUS:
ESG Governance
Human Rights
Carbon – Own Operations
Compliance Management

RATIONALE FOR RESOLVED STATUS:
Posco Holdings, Inc. has improved their ESG Risk Rating score to below 28.

Positive Development Highlights:

- Posco has over the years significantly improved ESG risk management on the group level, putting structure to strategies guided by materiality analysis and providing investors with relevant insight to risk management and performance.
- Posco is conducting human rights risk review of affiliated companies in the group.
- Posco has started to report according to the TCFD framework and publishes a separate climate changes report.
- Posco provides good disclosure on incoming reports and the outcome of them to the Unethical Behaviour Reporting Centre.
- The compliance management groupwide is organized and managed by the ESG team and there is a clear structure for policies and management systems.
- Posco has established a board ESG committee and recruited a new board member with environmental expertise.
- In March 2022, Posco has appointed a new outside director in the board with expertise in new technologies like rechargeable battery and advanced materials and commercializing such technologies.
- Posco is planning to replace coal in the steel production with green hydrogen and become carbon neutral by 2050. Posco will invest to produce the green hydrogen themselves.

In the latest update of the ESG Risk Rating, Posco's management score improved by more than 19 points, bringing the company into the medium risk category and below the 28-point threshold for engagement.

Resolved - TransAlta Corp.

ESG Risk Ratings Score

Negligible (0-10)	Low (10-20)	Medium (20-30)	High (30-40)	Severe (40+)

26.1

INDUSTRY:

Independent Power Production and Traders

BASE LOCATION:

Canada

ENGAGEMENT FOCUS:

Emissions, Effluents and Waste
Carbon – Own Operations
Resource Use

RATIONALE FOR RESOLVED STATUS:

TransAlta Corp. has improved their ESG Risk Rating score to below 28.

Positive Development Highlights:

- TransAlta reports for FY22 that it has reduced GHG emissions by 68 per cent since 2015, which according to the company has contributed to approximately 10 per cent of Canada's Paris Agreement target. In addition, the company has accelerated its long-term decarbonization goal by adopting a net zero by 2045 target. The company's decarbonization plan includes a commitment to invest $3.6 billion in clean generation growth and currently has 678 MW of construction projects underway with over $1.35 billion allocated to see these projects reach the finish line throughout 2023.
- TransAlta developed a consolidated Climate Transition Plan in 2022 which lays out the company's approach to reducing operational and value chain emissions to deliver net-zero operations by 2045. The Climate Transition Plan defines TransAlta's past, short-term (2023-2025) and medium- to long-term actions (beyond 2026) and articulates the technologies the company anticipates employing through its decarbonization activities.
- TransAlta has developed and disclosed a new Environmental Policy which includes formal commitments for the protection of the public and the environment, stakeholder engagement and consultation on environmental matters, Board and management oversight of its EMS and climate and nature related risks and opportunities, promotion of environmental awareness and training with employees, enabling biodiversity conservation, and reporting, investigating and following up on environmental incidents and emergency situations to identify weakness and take corrective actions.
- In its 2022 Integrated Report, TransAlta disclosed a scope 3 total emissions estimate of four million tonnes of CO_2e along with goals to verify and disclose 80 per cent of its scope 3 emissions by 2024, update its scope 3 emissions reporting methodology by 2025, and to consider developing a scope 3 emissions target beyond 2026.

In the latest update of the ESG Risk Rating, TransAlta's management score improved by 6.6 points, bringing the company into the medium risk category and below the 28-point threshold for engagement.

Engagement Milestones

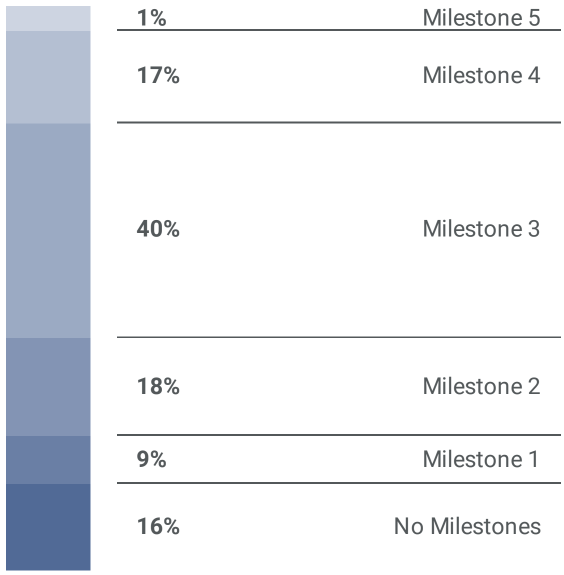
Milestones are our five-stage tracking of progress in achieving the engagement objective.

221
milestones achieved in
Year 2023

Milestone Framework Structure

Milestone 5	Change objective is considered fulfilled.
Milestone 4	Implementation of strategy has advanced meaningfully, and related issuer disclosure maturing.
Milestone 3	Strategy is well formed and has moved into early stages of implementation.
Milestone 2	ESG risk management and strategy established.
Milestone 1	Acknowledge of issue(s) and commitment to mitigation.

Engagements by Highest Milestone Achieved



Looking at Impact from Material Risk Engagement

Palle Ellemann
Director and Product Manager
for Material Risk Engagement

The Material Risk Engagement programme is designed to engage with companies on a case-by-case basis, adapting engagement objectives and strategies to each individual company. But like many little streams can make a mighty river, so can change on individual company-level contribute to broader-scale impact on society, climate and nature.

In MRE, engagement results are tracked in various ways. One of the clearest connections between engagement and change is illustrated by the Positive Developments defined as initiatives taken by the companies that are associated with the suggested actions we have provided to the companies. In other words, there has to be a clear link between what we have recommended the company to do and what it has effectively done in order to be a Positive Development.

Since the start of MRE in 2020, we have recorded more than 1,000 Positive Developments—354 in 2023 alone. In order to develop a better understanding of impact, the Positive Developments have been mapped against the 17 Sustainable Development Goals defined by the UN. The mapping shows that 40% of the Positive Developments have contributed to SDG 16 Peace, Justice and Strong Institutions.

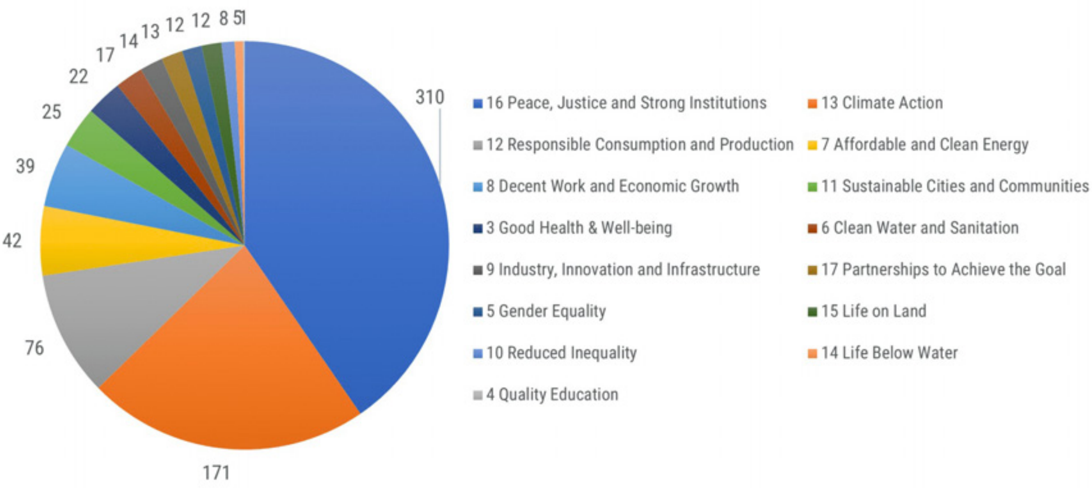
This is the SDG associated with corporate governance, where many suggested actions to the companies engaged are focused on building accountability – setting up robust ESG governance structures, clear systems for efficient ESG risk and performance management and relevant public ESG disclosure to stakeholders, including investors. The engagement dialogue often starts with a focus on these corporate governance issues in order to build the right foundation for the implementation of more sophisticated ESG practices and the integration of ESG into business strategies.

EXAMPLES OF POSITIVE DEVELOPMENTS ASSOCIATED WITH SDG 16

- S-Oil has established the ESG Committee under the Board of Directors which oversees its ESG strategies.
- Cosan has integrated more ESG metrics in the variable pay system and encourages each business unit to integrate more business specific metrics.
- The board level reporting on ESG at Hyundai Motor has become much more structured and frequent (quarterly) leading to more feedback from the board.
- Jardine Matheson has developed the first group-wide sustainability report providing investors with a much better insight to ESG risk management in the group.

Climate Action is the SDG with the second-most Positive Developments. There is a significant focus on climate action among investors as well as corporates, so it is expected to see a lot of initiatives to address climate risks.

POSITIVE DEVELOPMENT IMPACT ON SUSTAINABLE DEVELOPMENT GOALS



Note: Study includes Positive Developments of all active engagements. N=767.

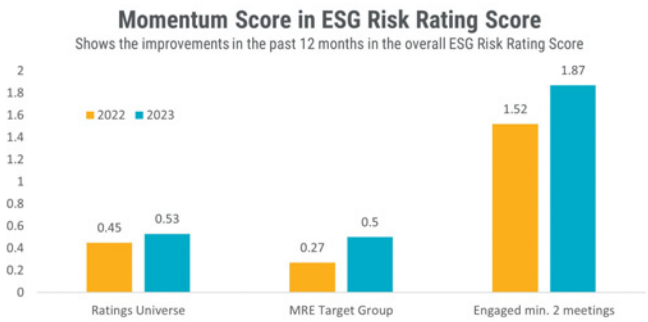
EXAMPLES OF POSITIVE DEVELOPMENTS ASSOCIATED WITH SDG 13

- China Mengniu has adopted the TCFD framework and developed an assessment of physical risk from climate changes, including impact on supply chain.
- Caterpillar published the inaugural TCFD report in 2023, aligning disclosures with the 11 components under TCFD's recommended framework. The report discusses in detail transition risks, physical risks, business opportunities as well as the resilience of Caterpillar's business strategy based on scenario analysis. Further, Caterpillar has disclosed its estimated scope 3 GHG emissions for the last five years for the first time in the 2022 Sustainability Report. The company's scope 1, 2, and 3 emissions inventory was calculated in alignment with the GHG Protocol and has received limited assurance.
- TransAlta developed a consolidated Climate Transition Plan in 2022 which lays out the company's approach to reducing operational and value chain emissions to deliver net-zero operations by 2045. The Climate Transition Plan defines TransAlta's past, short-term (2023-2025) and medium- to long-term actions (beyond 2026) and articulates the technologies the company anticipates employing through its decarbonization activities.

The MRE does not limit the engagement to any specific issues and the mapping shows that the Positive Developments can be associated with 15 out of the 17 SDGs.

Reduced Risk for Investors

Results for MRE are ultimately measured by the ESG Risk Ratings that we use to determine which companies to engage with and which management gaps to focus on. Engagements are considered resolved, when the ESG Risk Rating score improves to less than 28. Progress towards that goal can be assessed by the Momentum Score, which indicates the change in the ESG Risk Rating score in the past twelve months. The graph shows a benchmark of Momentum Scores between the companies we have engaged with over time (conducted minimum two meetings) and the MRE target group (30+ ESG Risk Rating score) and the entire Ratings universe. The benchmark shows that companies we engage with improve their scores more than three times faster than both of those benchmarks.



Source: Sustainalytics ESG Risk Rating. The Momentum Score shows the change in the ESG Risk Rating score in the past 12 months. As the ESG Risk Rating score reflects the level of unmanaged risk, the actual scores are negative because the unmanaged risks are getting smaller.
Note: Sustainalytics has had a minimum of two engagement meetings with 225 companies in 2023 and 201 companies in 2022.

Lines in the Sand: Can Innovation Spur Opportunity for the Canadian Oil and Gas Sector?

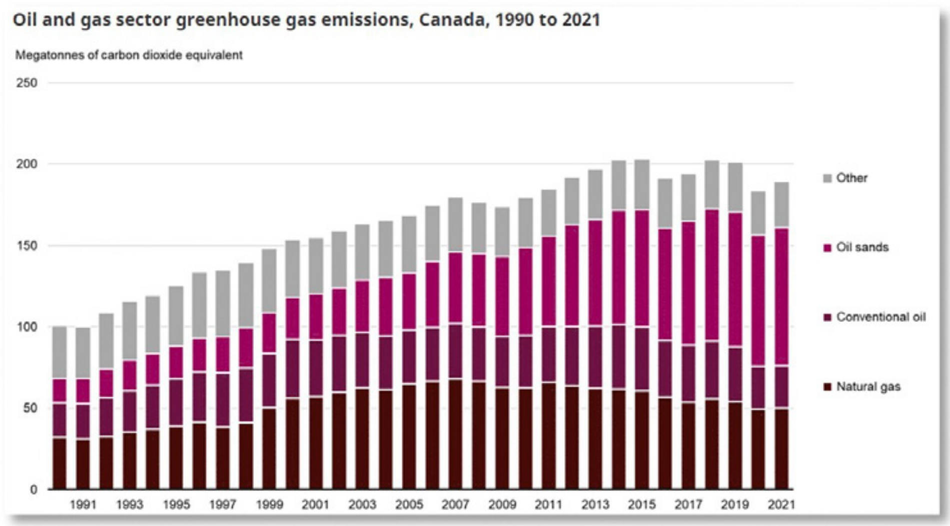
Shane Tiley
Engagement Manager, Morningstar Sustainalytics

Following COP28, the world has largely agreed to transition away from fossil fuels. Canada's oil sands producers could be uniquely positioned to decarbonize and avoid stranded assets by not only diversifying business streams—but also by capitalizing on hydrocarbon uses beyond combustion.

Unconventional Oil in a Unique Environment

Alberta's oil sands are the fourth largest proven crude oil reserve in the world,[i] making up 94 per cent of Canada's oil reserves[ii] and approximately 10 per cent of the world's proven reserves.[iii] Northern Alberta offers expansive unconventional hydrocarbon resources of low-grade crude oil called bitumen. Bitumen is thick and viscous with a tar like consistency, making it much more difficult to recover than traditional hydrocarbons elsewhere in the world. However, because bitumen oil takes a lot of energy to mine and separate the oil from the sands, oil sands extraction typically releases more greenhouse gases (GHGs) than other forms of oil production. Between 1990 and 2021, Canada's GHG emissions from conventional oil production increased by 24 per cent, while emissions from oil sands production increased by 463 per cent - mainly driven by a rapid increase in production.[iv]

Apart from the unique attributes of its hydrocarbon resources, the oil sands present additional material ESG issues, such as community relations and biodiversity loss, that have the potential to impact the oil and gas producers operating there. The oil sands are located in Canada's boreal forest, which is a unique ecosystem stretching 5,000 km across the country from coast to coast. In addition, many of the surface mining deposits in the oil sands flank the Athabasca River, an important waterway providing support for multiple Indigenous communities across Alberta and crucial habitats for endangered wildlife. Effectively preventing and managing environmental spills and releases in the oil sands is critical to preserving surrounding ecosystems and securing and maintaining a social license to operate.



Source: www.canada.ca/environmental-indicators

Banking on Carbon Capture and Storage for Scope 1 and 2 Decarbonization

According to the Global Carbon Capture and Storage (CCS) Institute,[v] their findings have confirmed that the Western Canadian Sedimentary Basin (WCSB) is one of the largest and most suitable basins for CCS globally. With this advantage, oil sands producers appear to be banking on CCS as the main lever to decarbonize Alberta's resource rich economy.

Alberta's six largest oil and gas producers formed The Pathways Alliance, which aims to work with the Federal and Alberta governments to achieve net-zero GHG emissions from oil sands operations by 2050.

The alliance's three-phase plan includes reducing current oil sands GHG emissions by approximately 22 megatonnes of C02 emissions (scope 1 and 2) per year by 2030 and planned investments of CAD $24.5 billion on CCS and other major emissions reduction projects and technologies.[vi]

A CCS hub and transportation network proposed by The Pathways Alliance would transport and store GHG emissions from over 20 smaller CCS facilities across the oil sands, with aims to sequester more than 10 megatonnes of carbon per year. With support from the Government of Alberta, the project is moving ahead with pore space (underground storage rights) being awarded to the Pathways Alliance, and drilling tests and engineering work underway.

However, The Pathways Alliance's activity (and the long-term success of the proposed CO2 hub) is heavily contingent on fiscal frameworks—at both the provincial and federal levels—as well as results of the formal consultation currently taking place with 25 Indigenous communities located around the proposed pore space and C02 transportation line.

Additional Challenges to Lowering Emissions

Oil sands producers are relying heavily on CCS to meet their decarbonization targets. Adding to their net zero challenges is the fact that Alberta's energy grid is mainly powered by natural gas.[vii] As the Alberta Utilities Commission instituted a moratorium on approving wind and solar power projects greater than one megawatt in August of 2023,[viii] producers now have limited short-term opportunity to replace generation with renewable solutions (and therefore lower scope 2 emissions sources for producers).

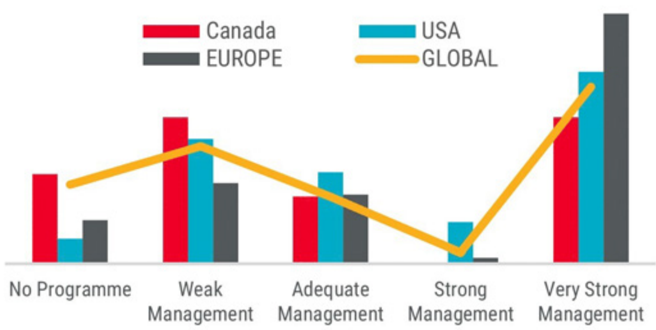
Phase 2 (2031 – 2040) of The Pathways Alliance net zero plan includes investment in more research and development for alternative power sources. This includes potentially using hydrogen, more electrification, and small modular reactors.[ix] And already in early 2024, an agreement has been reached between an Alberta power producer and one of North America's most diverse electricity generators to jointly assess the development and deployment of grid-scale small modular reactors (SMRs) to advance nuclear in Alberta and create net zero power solutions.[x]

A November 2023 report from the International Energy Agency (IEA) warns against banking on CCS as the planet continues to warm. The report states oil and gas companies need to consider diversifying into clean energy rather than simply counting on carbon capture to help them maintain the status quo.[xi]

With so much riding on the success of CCS in the oil sands, it's important to consider if producers have additional risk mitigation strategies in place to increase the chances of a smooth ride through the low-carbon transition—especially in relation to their scope 3 emissions, which essentially continue to remain unmanaged.

Figure 1 demonstrates the strength of GHG risk management programs for Canadian Oil and Gas producers as compared to global peers. As we can see, Canada is lagging US and European producers, but more closely aligned to global management levels.

FIGURE 1: EVALUATION OF O&G PRODUCERS GHG RISK MANAGEMENT PROGRAMMES



Source: Morningstar Sustainalytics. The data for this analysis was retrieved on December 21, 2023, from Sustainalytics Risk Rating Universe. Analysis of O&G sector companies includes 40 Canadian companies, 54 US companies, 72 EU companies, and 244 global companies. For informational purposed only.

Alternative Opportunities

One of the steps oil and gas producers are taking in response to climate related transition risks is diversifying their product portfolios to include sustainable or lower-carbon fuels and alternative streams of business. We are seeing this already with producers investing in technologies such as renewable diesel, sustainable aviation fuel, and hydrogen production.

In fact, Alberta is now Canada's hydrogen leader with plans for a world-class hub in Edmonton.[xii] The province also offers opportunity in the global critical minerals race, with the opening of Alberta's first lithium extraction pilot project. Alberta is home to one of the world's largest lithium deposits and until recently, there has been little interest in developing this deposit.[xiii] However, lithium is now a key focus of the Federal Government's CAD $3.8 billion eight-year critical minerals strategy, which aims to increase domestic extraction and production.[xiv] A Calgary-based junior resource company has developed a technology to extract naturally occurring lithium from oil field brines, and local producers are partnering with, and investing in, such companies to provide technical and development support.[xv]

Figure 2 shows that some Canadian Oil and Gas producers are ahead of US producers in terms of introducing and receiving revenue from sustainable products and services. However, both Canadian and US companies are not diversifying their product portfolios with the same rigor as their European peers, or global peers.

FIGURE 2: O&G PRODUCERS REVENUE FROM SUSTAINABLE PRODUCTS AND SERVICES

Source: Morningstar Sustainalytics. The data for this analysis was retrieved on December 21, 2023, from Sustainalytics Risk Rating Universe. Analysis of O&G sector companies includes 40 Canadian companies, 57 US companies, 73 EU companies, and 244 global companies. For informational purposed only.

The Next Frontier: Bitumen Beyond Combustion (BBC)

There are also diversification opportunities related specifically to Canada's unconventional bitumen oil. Where light crude oil is primarily made into fuel, heavy bitumen oil has many potential uses beyond burning it.

Alberta Innovates[xvi] has developed a vision for Bitumen Beyond Combustion (BBC), believing that the Alberta oil sands could contribute to achieving net zero emissions goals if this resource was used to create valued products and not just combustible fuels. The BBC strategy calls for a greater portion of bitumen production to be diverted away from fuel production and dedicated to the manufacture of high-value materials, such as asphalt binders or carbon fibre. In doing so, the carbon from the bitumen would remain trapped within the products and not released into the atmosphere.[xvii]

Analysis by Alberta Innovates shows that BBC can create more economic value and reduce GHG emissions, with potential total annual revenue exceeding CAD $100 billion per year by 2050.[xviii] A recent study has also shown that oil sands production would have to drop by as much as 90 per cent for Alberta to achieve net-zero emissions by 2050 in the absence of a BBC strategy. However, if BBC was implemented, bitumen production could be maintained or even increased in net-zero by 2050 scenarios.[xix]

Nevertheless, significant investment and policy support would be required to turn the bitumen beyond combustion vision into reality.

Drawing the line

Participating nations in COP28 have come to a final agreement that calls for the orderly transition away from fossil fuels. As investors consider their options with the oil and gas sector, it's important to understand the unique risks and opportunities specific to where and how producers operate. Although the pathway to decarbonize the Canadian oil sands via (what could be) one of the world's leading CCS hubs seems promising, producers could be in for a bumpy ride on their net zero journey if not considering alternative and innovative opportunities to diversify away from fossil fuel combustion.

Forced innovation leads to opportunity!

About the Author:

Shane Tiley is an engagement manager for Morningstar Sustainalytics Material Risk Engagement Stewardship Services. Throughout 2023, Shane has been following and engaging with multiple high-risk North American oil and gas producers to better understand how these companies are navigating the transition to a low carbon economy and managing transition-related risks. Investors who are interested to participate in direct engagement with North America's high-risk oil and gas producers can connect with Shane to learn more about her 2024 engagement agenda and express interest in attending in-person meetings and site visits. Email: Shane.Tiley@Morningstar.com

OPINION: The UN's Sustainable Development Goals are Missing more than their Targets: They are Missing Investor Voices.

Matthew Gray
Associate Director
Material Risk Engagement
Eurasia's Emerging Markets

It is high time for investors and the United Nations (UN) to work together to harvest any yields from the Sustainable Development Goals (SDGs), and perhaps more importantly: to shape the Post-SDG Agenda. As we reflect on 2023's midway point of the SDGs (where 15% of the targets have been met and many are backsliding)[xx] , we need to look ahead, while identifying opportunity for increased cooperation.

In order to gain further influence, investors need to understand the UN structure to engage with the SDGs and the UN at large. There are three UN pillars: these can be summarized by the blue, the black, and the rainbow. The blue is the most visible, focusing on development, humanitarian aid and peacekeeping where the UN operates in 80+ countries. Investor engagement with the 'blue UN' (ie: UNICEF, UN Refugee Agency, World Health Organization, etc) is minimal, and for these UN agencies the SDGs are used to leverage local governments and communicate with populations - not to inform investors or corporations. This part of the UN doesn't raise funds from investors, they fundraise mostly from a dozen Northern Governments, and they have limited experience of corporate engagement (ie: working with a company's foundation is not corporate engagement). The 'black UN' is the political side, mostly concentrated around New York and a few transatlantic capitals, where debate and resolutions take place and some political and development global agendas are set, including, the SDGs in 2014 and the Millenium Development Goals (MDGs) in 2001. The black UN has a few bodies which look at responsible investment (Principles for Responsible Investment is limited and not a part the UN), though it is passive. Then there is the 'rainbow UN'—the SDGs—which is both a UN communications tool, and a driver of metrics for wider stakeholder alignment towards a more sustainable and fairer world. They have become an interface for investors and companies to engage with the UN, though there is more opportunity to engage (explained below). Of the three, investors need to engage with the rainbow, though this is not easily done as rainbow UN is more of a framework than it is an office in a capital or in a refugee camp, and therefore, it requires strategic interpretation rather than direct engagement.

We see two main ways for investors to engage with the UN—to capitalise on the SDGs and influence the Post-SDG Agenda.

The first is in shaping what will come after the SDGs with investors as a key contributor. The international community is now beginning to reflect on the current SDGs, and gaps are starting to emerge to build upon the SDGs from 2030. Foremost, is the gap in investor inputs, which was lacking in building the current SDGs. Next is the gap in representation of market-leading corporations from emerging markets. And finally, is the need of an increasing role of ESG and its measurable—and even monetized—metrics. These three gaps will need to raise in prominence when the post-SDG architecture begins to form, and this will start from 2024.

At the UN, the world of 2030-2045 will be shaped in the next 18 months. The seminal event is the 'Summit of the Future'[xxi] hosted by the UN in September 2024 which will start discussing the post-SDG framework structure. It may seem pre-emptive, but these processes take time. The SDGs took nearly 4 years to develop and agree on. Leading up to the Summit, the UN will be working with stakeholders, and will begin to set up committees. Investor voices need to be represented on those committees, not as individual investors, though as a collective voice. Morningstar Sustainalytics plans to leverage our UN access to support investor and ESG positioning and be around those committee tables and bring our clients and corporate perspectives into the post-SDG world.

The second way for investors to capitalise on the SDGs is utilising the SDGs in the current form. As the SDGs sit now, investors can contribute to the SDGs and benefit from SDG association. For example, investing in funds, or equities directly which have operations that address numerous SDGs. Let's consider a real-life scenario such as investing in a company which has large government approved plans, such as a hydro power station which also has an offset of a hydrogen pilot. Perhaps the company is also issuing a green bond or a sustainability linked bond. The power station is in an area with rampant poverty, poor roads (i.e. access to markets), low levels of secondary healthcare provision, few girls in secondary education, and a lack of small-scale business and manufacturing. Establishing the plant requires water assessments and environmental impact and awareness, a focus on river systems, aquaculture and agriculture, and therefore indirectly impacting livelihoods and community engagement and then empowerment. All of these external factors of one energy plant can contribute to nine SDGs. In other words: an energy project needs not to be just an energy project, because investing in the SDGs is investing in an integrated system—which is how the SDGs were set up to be.

Another practical example: Assume we have a health company interested in expanding its presence in emerging markets. The company's operations contribute towards universal healthcare, require local investment in (gender balanced) education in health and administration. An externality of investing in girls' education is that the primary way to solve overpopulation and extended generational poverty is proven to be through the education of girls and keeping them in school. Further, this hospital would require subsequent water infrastructure systems to supply the health facilities, requirements on data security and IT systems and wider integration into government emergency services. Further, it would require the extension of schooling or daycare services, and also the increased awareness of health prevention including mal- and undernutrition household government programmes.

These examples provide a more holistic thinking to the challenges and opportunities which are more prominent in emerging markets who are expected to be the drivers of economic growth for the remainder of the 2030-SDGs with OECD annual growth expected at 1.8% compared with 3.9% in non-OECD countries, led by Asia at 4.7% per year. 3 The graph from the Economist Intelligence Unit shows the fastest growing markets towards 2050, that is the rest of the SDG and the Post-SDG Agenda.

Long Term Growth: Fast Growing Markets

From an investor perspective, this graph clearly illustrates the importance of connecting sustainable development in emerging markets with investment opportunities, so sustainable development and ESG can become catalysts for economic growth. In this perspective, it is important that investors bring in leading emerging market corporations to the UN table. This can define the Post-SDG Agenda as it is those corporations who are making the difference in local communities by driving employment, education, innovation, supply chain development, gender-balance and reducing poverty. Inevitably, the stakes are too high for the world to be under-represented.

Plans for 2024

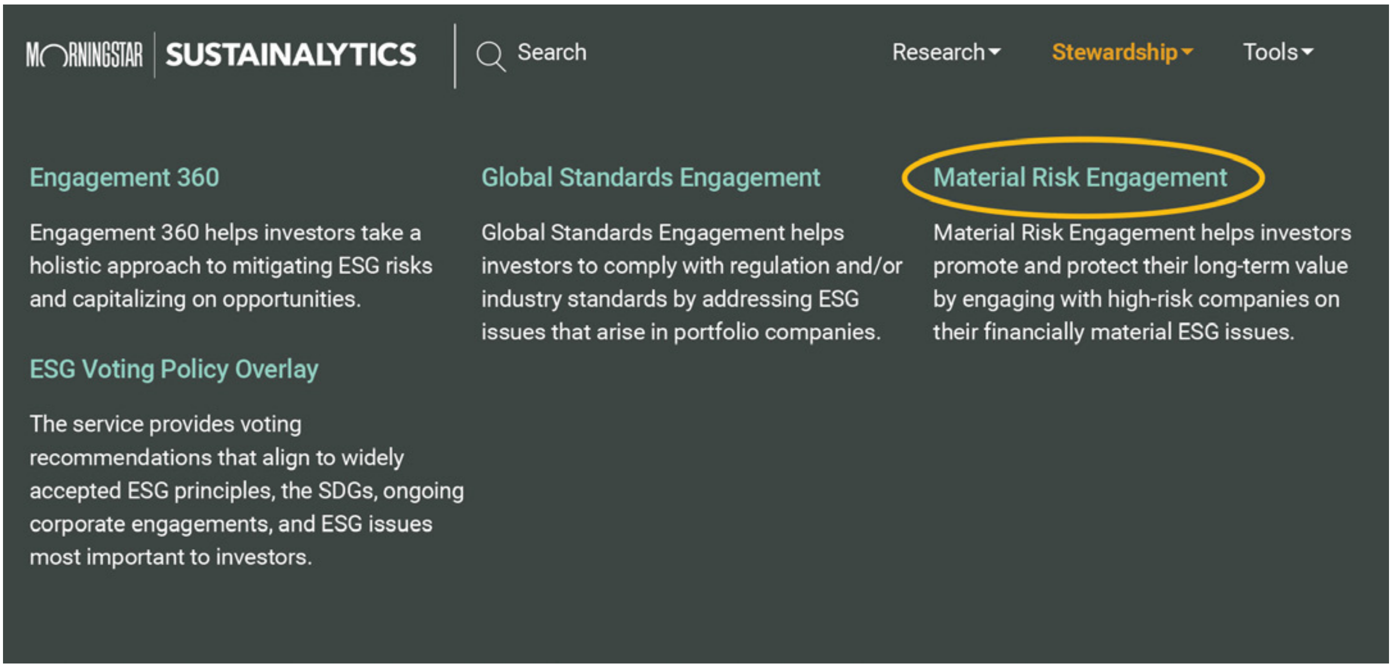
As we discussed in an article in the Q3 2023 report, mandatory corporate sustainability reporting from the European Union is expected to drive ESG risk management fast forward as it is taking effect in 2024. We are already seeing the companies adapting to the emerging framework and we expect that it will have implications and drive standardization and reporting scope beyond Europe. We will follow this closely as companies adopt the reporting framework and particularly pay attention to the materiality assessment that is part of the framework as it defines the material ESG issues that the companies are supposed to report on.

We will launch the Client Consultation Panels, where there will be a panel specifically dedicated to MRE. We expect to conduct 1-2 online panel sessions in 2024, where we will consult MRE clients on questions and ideas related to methodology, company selection, client participation and reporting. We look forward to involving clients more systematically in product development.

We expect to offer clients various opportunities to join in-person engagement meetings besides the online participation in conference calls. We will be organizing engagement trips to locations, where we can schedule several engagement meetings within a few days combined with site visits. Please follow the Engagement calendar and the Weekly Engagement Briefing (email coming out on Fridays) for more information on these trips.

How to Generate Reports from Global Access

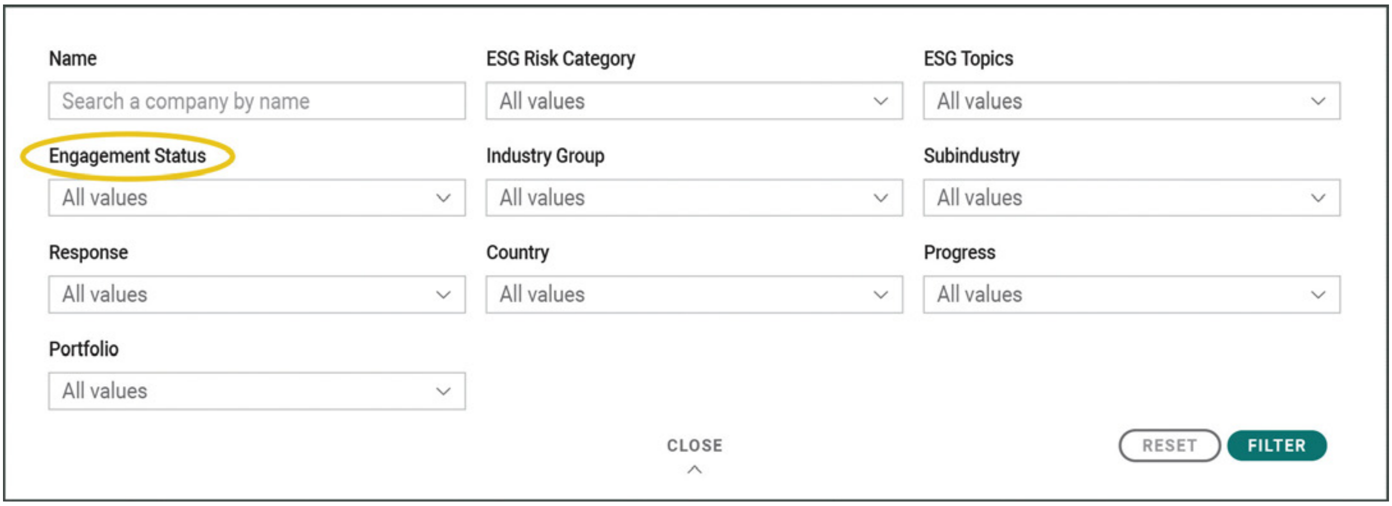
MRE clients can generate individual reports from Global Access, allowing visibility to the status of engagement activities and progress. From the landing page of **Global Access**, find **Material Risk Engagement** under the **Stewardship** tab.



On the **Material Risk Engagement** landing page, scroll down to the search section, to search for a specific company or filter by various criteria including ESG topics, industry group, country, response, and progress.

Reports can be generated for an individual portfolio if a portfolio has been uploaded to the user's account in the **Portfolios** section under the Tools tab. Once a portfolio is uploaded, it is available under the **Portfolio** filter in the search section, in addition to other standard research universes.

To see the number of engagements in a portfolio, select **Engage** under the **Engagement Status** and the portfolio under Portfolio. This will produce a report that includes multiple data points for the companies selected.



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About Morningstar Sustainalytics

Morningstar Sustainalytics is a leading ESG data, research, and ratings firm that supports investors around the world with the development and implementation of responsible investment strategies. For more than 30 years, the firm has been at the forefront of developing high-quality, innovative solutions to meet the evolving needs of global investors. Today, Morningstar Sustainalytics works with hundreds of the world's leading asset managers and pension funds who incorporate ESG information and assessments into their investment processes. The firm also works with hundreds of companies and their financial intermediaries to help them consider material sustainability factors in policies, practices, and capital projects. Morningstar Sustainalytics has analysts around the world with varied multidisciplinary expertise across more than 40 industry groups. For more information, visit www.sustainalytics.com.

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