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Investing in sustainability

Energy: Fossil Fuels

Sustainable Development Sector Analysis Framework

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This is a methodological document aimed at clarifying how Mirova takes into account sustainable development issues in the framework of the environmental, social and governance analysis of each sub-sector of activity.

An affiliate of: NATIXIS INVESTMENT MANAGERS

Fossil fuels have historically driven economic growth, but not without side effects: the now-alarming severity of climate change is directly linked to our fossil fuel use. Phasing out coal, oil, and gas as quickly as possible, in that order, is the only way to avoid the catastrophic global impacts of unchecked climate change.

Companies in the fossil fuel industry must undergo a complicated transition. Demand for their products must decrease to stave off climate change, so companies have two options: redesign their business models, or perpetuate their negative climate impacts until they are required to stop by external forces. Ideally, fossil fuel companies would reorient their investments towards clean energy solutions like renewable energy systems, electricity generation, advanced biofuels, electricity storage, carbon capture and storage, and more.

Sectors: Oil & gas companies operating upstream (drilling, equipment & services, exploration & production) or downstream (refining & marketing, storage & transportation), and coal & consumable fuels

1 Second generation biofuels generated from non-food biomass.

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Sustainability Opportunities

Decarbonization of Energy

Burning fossil fuels – no matter whether coal, gas, or oil – instantly releases the carbon they stored in the Earth's crust for millions of years in the form of carbon dioxide. Because carbon dioxide is a heat trapping gas, burning fossil fuels warms Earth's atmosphere and surface.

Emissions since the industrial revolution have led to alarmingly fast warming. Should this continue beyond >2°C (relative to pre-industrial averages), the overall impact would be devastating more extreme weather events, famine, drought, sea-level rise, migration, and much more.

Avoiding the most catastrophic effects of climate change means phasing out global fossil fuel use across all sectors as quickly as possible. The phase-out timeline depends on the carbon content of each: coal creates the highest emissions per unit of energy produced. Oil emits about ¾ as much as coal for the same energy content, and gas emits about ½ (ADEME, 2014). Coal must be the first to go, followed by oil and gas.

It follows that a company's exposure to sustainability opportunities differs depending on its product portfolio and its position in the value chain. While marginal improvements in operational emissions may be possible, all opportunities in this sector are linked to reducing carbon intensity of products, either by focusing output on less carbon intensive products (typically moving from coal/oil to gas), or by investing directly in low-carbon energy systems like wind, solar, or energy storage.

Coal

Producing and marketing coal

Coal use is incompatible with climate change mitigation, so these companies would need to overhaul their business models to be eligible for investment.

Oil

Upstream: *oil extraction & production (E&P), equipment and service providers*

Downstream: *oil transportation, refining, trading*

Since continued oil use over the medium to long-term is at odds with the energy transition, companies deriving a substantial portion of their revenues from oil are not eligible for investment.

Nevertheless, there may be opportunities for companies that transfer their existing knowledge and skills towards lower-carbon activities (e.g. offshore oil platforms translate well to offshore wind energy). Companies can also diversify their upstream activities into lower-carbon activities, either through making investments or acquisitions. Renewable energy systems, renewable energy project development, energy storage, electric vehicle charging, and electricity generation are examples.

Equipment and service providers' exposure to sustainability opportunities is based on the diversification of their product mix. The greater share of non-fossil fuel related products, especially products related to renewable energy systems, the more likely they are to be considered for investment. Fully integrated oil companies are more able than oil extraction & production pure-players to quickly adapt their product portfolios by focusing their efforts on gas.

Downstream, opportunities are related to changes in the services or products delivered, like refinery retrofits to process biofuels or diversification into electricity transmission and distribution.

Gas

Upstream: *gas extraction and production (E&P)*

Downstream: *gas transportation (including liquified natural gas condensation, shipping, and regasification)*

Gas can serve as a transition fuel under certain circumstances, but near-complete decarbonization will be necessary over the long term to limit warming to <2°C.

As a result, while new gas infrastructure may help to lower emissions over the short term, it may also lead to lock-in effects over time, extending fossil fuel use over the long-term. The gas supply chain is particularly risky and difficult to manage, with the potential for high fugitive greenhouse gas emissions, which can reduce its climate benefit substantially.

As a result, companies mainly exposed to gas, whether through extraction & production, shipping, liquified natural gas, or otherwise are typically considered neither positively or negatively exposed to sustainability opportunities.

To contribute to the energy transition rather than work against it, companies in the fossil fuel sector should direct their investments towards low carbon and renewable energy sources.

KEY INDICATORS

- Share of fuel mix, extraction, and refining activities dedicated to low-carbon energy
- Capex and/or R&D dedicated to low-carbon energy sources
- Targets and timeline to reduce lifecycle carbon intensity

Exposure to Opportunities

Indicators considered :
- **Integrated and upstream**: Fuel mix breakdown (in reserves and production)
- **Downstream**: Portion of refining capacity dedicated to alternative fuels
- **Equipment/Service:** Portion of revenues destined for fossil fuel sector
- **All:** Portion of capital expenditures and R&D dedicated to alternative fuels and renewables

High exposure	• >50% dedicated to renewables, advanced biofuels, or other low-carbon fuels • <20% coal/oil	Strategic commitments (and evidence thereof) will also be considered on a qualitative basis. This assessment is based on capex planned and realized, acquisitions and divestments, and other efforts to align products and practices with a 2°C climate scenario.
Significant exposure	• 20%-50% dedicated to renewables, advanced biofuels, or other low-carbon fuels • <20% coal/oil	
Low or no exposure	• 80%-100% gas • Diversified equipment/services companies (<50% of revenues from fossil fuel sector)	
Negative exposure	• >20% oil/coal • Dedicated equipment/services companies (>50% of revenues from fossil fuel sector)	

Environmental and Social Risk

Environmental Impact of Processes

Fossil fuel companies are exposed to substantial operational environmental risk. They must work to mitigate climate change by reducing their operational greenhouse gas emissions, reduce their air and water pollution, and protect the wildlife near extraction sites.

Climate Change

Most of a fossil fuel company's greenhouse gas emissions (about 80% of the total) come from the use of its products: burning coal, oil, or gas to create electricity or power transportation. Since they are linked to use of the company's products, the main way to address these emissions is by (i) changing the company's product portfolio (as discussed in the "Opportunities" section), or (ii) improving efficiency in end-use sectors. It is difficult for fossil fuel companies to address these emissions directly. Even if operational emissions are a secondary contributor to fossil fuel companies' carbon footprints, they are far simpler to address.

Coal and oil are typically accompanied by deposits of natural gas and other vapors. To avoid pressure imbalances for extraction equipment, this is either captured, released into the atmosphere ("venting"), or burned prior to release ("flaring"), depending on its composition. Both flaring and venting can represent a loss in the total value of produced gas, so companies are incentivized to recapture and reuse or sell it when possible.

Natural gas is mostly composed of methane, which is 30 times more effective at warming the planet than CO2 over a 100-year span. As a result, releasing methane into the atmosphere can quickly lead to severe, negative climate impacts. Although it may seem counterintuitive, flaring - burning the hydrocarbon-rich gas prior to release - converts methane and other hydrocarbons to carbon dioxide, a molecule with lower warming potential, reducing climate impact.[2]

While flares/vents must exist to avoid safety risks (i.e. fire and explosion), flaring and venting should be limited as much as possible to mitigate the operational climate impact of fossil fuel companies. Companies can make greater efforts to commercialize the gas that would otherwise be flared/vented, implement automatic ignition systems that eliminate the need for small amounts of gas to burn continuously, or re-inject the gas. As countries' fossil fuel industry develops, regulation often begins to address flaring and venting by implementing controls and standards, including stricter metering requirements: gas flaring has decreased by about 35% since 1996, with a 50% reduction in countries that have implemented strict rules around it versus a 25% reduction in countries that have not (World Bank, 2019).

Pollution

Beyond the air pollution caused by use of fossil fuels, there is a high risk of air, water, and ground pollution resulting from company operations.

- Coal mining can create pollution through insecure storage of chemicals and hazardous substances used during the ore refining process in nearby valleys or natural land depressions. These toxic "ponds" can leak into nearby land and rivers, causing extensive contamination.

- Certain unconventional oil and gas resources (e.g. shale gas, oil sands) are extracted by injecting chemical compounds into the Earth's crust. If appropriate environmental

2 Flaring gas creates the same climate impact as burning it in a power plant. But, while burning gas in a power plant creates electricity that can then serve a variety of end-uses, flaring it produces no such economic value.

protection measures are not in place, these hazardous chemicals can seep into water resources. Waste chemicals from these processes can also leach into the land and groundwater when storage is not secure.

- Oil spills can create severe, extensive pollution and are often directly linked to how comprehensive (and how well enforced) a company's risk mitigation plans are. Offshore spills have historically led to the most dramatic environmental impacts (e.g. the 1989 ExxonValdez spill in in Alaska, the 2010 Macondo spill in the Gulf of Mexico), exposing major flaws in risk management procedures, including a pervasive lack of transparency and insufficient plans for mitigating the potential environmental impacts of accidents.

On an ongoing basis, onshore oil spills can also have strongly negative environmental impacts. Companies often cite sabotage and theft as a major contributor to spill volumes: in Nigeria, repeated spills, as much as 90% of which have been attributed to sabotage and theft, have led to devastating pollution in the Niger Delta. The total oil spilled in the region between 1998 and 2010 is estimated to be around twice the size of ExxonValdez (ShareAction, 2016). Each year, hundreds of court cases are brought against oil companies in Nigeria, charging companies with negligence around spill prevention, from theft or otherwise, and cleaning up the spills for which it is responsible.

Fossil fuel companies must adequately mitigate their environmental risks, including securing waste storage to making sure that chemicals used in the extraction process are contained correctly. Reducing spills requires a heightened focus on security of oil and gas facilities and pipelines, including proactively maintaining infrastructure to prevent leaks.

Companies must further avoid the tempatation of exceptionally high-risk areas, like ice-covered Arctic waters. Because of the region's sensitivity and limited accessibility to transportation infrastructure and clean-up supplies, we do not consider the environmental and social risks manageable in these cases.

Biodiversity

Fossil fuel extraction can take up substantial surface area and ruin the ecosystems that were once present: mines and their waste pools, in particular, reshape the landscape, destroying flora and fauna in the process. Marine ecosystems can be disturbed by offshore oil platforms. Onshore oil and gas infrastructure onshore can alter the land permanently, to the detriment of local biodiversity.

Companies committed to reducing their negative impacts on biodiversity should conduct environmental impact assessments at each project site before construction begins, regardless of whether these studies are mandated by local regulation. Based on the results, companies should either amend their plans or put mitigation measures into place to reduce negative effects on local plants and wildlife.

Fossil fuel companies should invest in technological and procedural solutions for reducing the environmental impacts of their processes, including:

- **Implementing monitoring and alternatives to flaring/venting**
- **Minimizing the environmental footprint of extraction and processing operations**
- **Implementing proactive and comprehensive environmental risk management systems, including for contractors or external partners**
- **Conducting thorough environmental (and social) due diligence prior to construction on new projects**

KEY INDICATORS

- Extent of involvement in unconventional extraction methods with high operational risks
- Presence of a groupwide policy to avoid and reduce pollutant emissions to air, water and land
- Presence of a groupwide oil spill policy and contingency plans
- Presence of targets to reduce greenhouse gas emissions, including reduction of flaring/venting
- Presence of a biodiversity impact reduction policy

Product Impacts

Pollution accompanies fossil fuels. The surest way for companies to address this is to diversify their product portfolio away from fossil fuels (see “Opportunities” section).

Besides carbon dioxide, burning fossil fuels emits pollutants into the air, including nitrogen oxides (NOx), sulphur dioxide (SOx), carbon monoxide, and particulate matter. These pollutants lead to smog and acid rain, which have negative impacts on the health of humans and ecosystems.

Coal creates much of the fossil fuel sector’s sulfur emissions when burned, as well as NOx, particulate matter, and toxic heavy metals. Utilities that burn coal must make efforts to put filtering mechanisms into place to reduce these pollutants; coal extraction companies have limited ability to change this themselves.

As for oil and gas, polluting additives like lead have been largely removed from gasoline supply. Sulfur (SO2), however, occurs naturally in crude oil but has not been uniformly eliminated in gasoline and diesel fuels across countries (Global Comparison: Fuels, 2014). In the EU, the US and Japan, stringent standards require refineries to reduce sulfur content, while other countries lag behind. Presence of sulfur further hinders the ability of catalytic converters in automobiles to effectively reduce harmful pollutants. Companies that produce low-sulfur fuels are taking a first step to manage their products’ environmental risks.

Both crude oil and natural gas are also used as feedstock to produce plastics. However, as the negative environmental impacts of plastics becomes clear, plastics are increasingly exposed to risk. Focusing on recyclable or bio-plastics may help companies reduce their associated environmental, demand, and regulatory risks.

Companies can reduce the air, water, and ground pollution generated by their products and services by making marginal improvements to existing processes, like eliminiating sulfur from gasoline and diesel.

KEY INDICATORS

- Initiatives to reduce fuel consumption and end-use pollutant emissions
- Share of non-fossil fuels or related activities in the energy portfolio
- Investments dedicated to reducing pollutant emissions (R&D and capex)

Worker Health and Safety

Although the fossil fuel sector has made progress in reducing accident frequency rates over recent years, safety standards vary dramatically across countries and extraction type. Underground coal mining, for example, is more dangerous than surface extraction due to the risk of explosions.

The decrease in conventional oil and gas reserves over the past three decades has also led to a shift toward non-conventional resources, many of which pose new operational challenges

and threaten occupational health and safety. Operations in politically unstable regions can represent an additional risk to employees and contractors.

Although performance across the sector has improved over the years, contractors remain insufficiently covered by company health and safety management policies. In 2018, for instance, 29 of 31 fatal accidents were related to contractors (International Association of Oil & Gas Producers, 2018). This calls for greater vigilance and more training initiatives, especially in countries where health and safety performance lags behind industry average.

Companies should implement occupational health and safety policies, management systems, and targets.

Both company employees and workers should be covered by health and safety management systems.

KEY INDICATORS

- Policy, performance indicators, quantified targets on safety issues
- Training, presence in industry groups for the improvement of safety standards

Human Rights of Communities

The fossil fuel industry faces complex human rights-related issues due to its high land use needs and the variety of locations in which it is present.

Mining sometimes implies land seizures around excavation sites, including deforestation and relocation of local communities, both of which are often met with opposition. Although governments are mainly responsible for enforcing and protecting human rights issues, companies are equally responsible for adopting best practices and engaging in constructive dialogue with communities both prior to and during mining operations.

For oil and gas, offshore drilling reduces companies' exposure to community resistance and potential human rights issues relative to onshore projects or mining. Onshore oil's exposure to theft and sabotage may involve private security and use of force, with high potential for breaches of human rights. Companies should train their security contractors in human rights issues to minimize use of force and must that local communities are protected from any adverse impacts arising from environmental accidents like oil spills.

Companies must implement policies and systems to protect human rights, including through community consultations, training for security forces, and monitoring/grievance mechanisms. All formal human rights policies and risk management systems should apply to both companies' direct operations and their contractors.

Transparency on indicators related to human rights is of utmost importance: companies should disclose information related to the community consultation, grievances received, theft/sabotage events, and use of force.

KEY INDICATORS

- Presence of a formal human rights policy that applies to both the company and its contractors
- Presence of a human rights risk management system
- Transparency around community outreach, grievances, use of force, etc.

Human Resources

Since volatility in fossil fuel prices has a direct impact on the industry's profitability, it is prone to periods of large divestments of both physical and human capital.

For example, falling coal prices and low demand growth have led to job cuts in coal mining. China, the world's largest coal producer and consumer, has closed hundreds of coal mines since 2016, leading to over one million jobs lost. As a result, 2.3 million Chinese coal miners are estimated to be out of work by 2020 (International Institute for Sustainable Development, 2017).

In countries with large fossil resource, fossil fuel-related jobs can support a sizeable portion of the workforce. Since the oil and gas industry is becoming increasingly involved in complex unconventional projects, it must continue to attract and retain technically skilled employees.

However, although reduction of fossil fuel use is essential for meeting global environmental and climate objectives, large-scale layoffs can present social risk and can jeopardize local support for environmental initiatives. It is therefore essential that companies in the sector restructure as responsibly as possible by providing opportunities for retraining or continuing education.

We expect companies to attract and retain talent, and to adopt responsible policies when restructuring.

KEY INDICATORS

- Policies around responsible workforce restructuring
- Mechanisms to attract and retain talent

Business Ethics

Many large fossil fuel companies are found in places with limited law enforcement and transparency; according to Transparency International's Bribe Payers Index the sector and its suppliers rank poorly, all in the bottom 25% (Transparency International, 2011).

Many fossil fuel companies are also partially or fully state-owned, which implies interaction between government officials and the company. Coupled with high competition for oil and gas resources, this interaction magnifies corruption risk, especially for companies active in many regions.

Finally, questions also loom around transparency, namely royalties paid to governments for the natural resource extraction. If mismanaged, the wealth created by the resource extraction can bring about conflict between governments, its citizens, companies, and more.

We encourage companies to implement anti-corruption policies and systems that span their international operations. Companies should go beyond local requirements, including providing whistleblowing systems and involving the Board of Directors.

We also emphasize disclosure, and push companies to engage with policy-makers to encourage transparency in countries where robust standards are not implemented.

KEY INDICATORS

- Groupwide anti-corruption policy and mechanisms that includes contractors
- Presence and disclosure of whistleblowing data
- Reporting on royalty payments
- Severe controversies relating to business ethics and company responses

Sustainable Development Governance

Given the high environmental and social stakes of their businesses, fossil fuel companies should consider sustainability issues at Board-level to ensure that they are not overlooked.

We expect companies to integrate environmental and social criteria in executive, middle management, and employee remuneration schemes: indicators related to climate change mitigation, health and safety performance, volumes spilled, etc. should be reflected in both short-term and long-term variable components.

Beyond incentivizing sustainable practices, environmental and social issues should increasingly drive strategic decision making. As such, companies should also appoint representatives to the Board with sustainability experience in the sector and set up a sustainability committee to the Board. This can help ensure that high-level decisions incorporate a thorough consideration of the company's broader stakeholders.

Finally, transparency around sustainability issues remains crucial for fossil fuel companies. Investor demand around 2°C alignment, R&D, and expenditures, both current and planned, in renewable and alternative energy technologies is only growing.

We encourage companies to set up sustainability targets and reflect them in variable remuneration of management.

Companies should also add sustainability expertise to the Board (preferably by creating a sustainability committee) that can advise on environmental and social matters.

Finally, we seek to measure and understand companies' efforts related to the energy transition. Companies should thus disclose their expenditures (both investments and R&D) by type of technology. We are also interested in the way they view their future role in the global energy system, including 2°C scenario alignment and information about the parameters used in scenario analyses.

KEY INDICATORS

- Sustainability performance indicators and targets in annual reports
- Disclosure of capex and R&D spending per type of technology, plus the company's alignment with a 2°C scenario
- Presence of measurable environmental and social criteria in variable remuneration schemes

Risk Assessment

	Criteria
Positive	Does not meet "risk" criteria AND Absence of severe and/or recurrent controversies AND comprehensive policy for reduction of environmental and social impacts: - health and safety management systems that apply to both workers and contractors, with targets and indicators figuring into bonuses - satisfactory stakeholder consultations, leading to proactive management of human rights issues - minimization of operational environmental impacts, including formalization of environmental risk assessment and management procedures, reductions in gas flaring/venting, plans for reduction of local pollution (i.e. oil spills) AND a comprehensive code of ethics, with adequate management and company response to environmental, social, and governance controversies should they arise
Neutral	All other cases
Risk	- Repeated controversies with inadequate company response OR - Insufficient health and safety management systems, especially in the context of high-risk activities OR - Activities with potentially significant negative environmental impact and the absence of advanced management systems to mitigate these risks

Conclusion

In our view, fossil fuel companies do not provide sustainability opportunities. Though some have started to set targets around increasing the share of alternative fuels and renewables in their product mixes, fossil fuels remain central to their business models.

The sector can and must play an important role in the energy transition. We therefore encourage companies to make significant investments in shifting their portfolios toward more sustainable energy sources and diversifying into more sustainable activities.

Ensuring operational health and safety, respect for human rights, and minimizing the environmental impacts of processes are all additional challenges for fossil fuel companies. They must implement stringent risk management standards to ensure that their operations avoid negatively impacting their stakeholders and the local environment.

Companies must manage both their opportunities and risks to be considered a part of the investable universe. Companies with low-carbon transition plans in place but fail to manage their sustainability risks appropriately will not be eligible for investment. Conversely, companies with no intention of reducing the climate impacts of their products will not be considered eligible, even if their risk management practices are excellent.

Our Approach to sustainability assessment

Acting as a responsible investor requires interpreting the economic world within its social and environmental context. This approach calls for understanding the interactions between different private-public players, small-medium-large companies, developed and developing economies to ensure that each player's growth is consistent with the balance of the rest of the system. It is a long-term approach that guarantees that today's choices will not lead to negative consequences for future generations. Understanding these complex relationships demands:

- Clear understanding of sustainable development issues facing our societies,
- Assessing the possible interactions between the assets of our investment strategies and these sustainability issues.

The SDGs as a Guide

Following the Millennium Development Goals created in 2000, the United Nations set out a new framework for sustainable development in 2015. It contains 17 Sustainable Development Goals (SDGs), broken down into 169 specific targets designed to address the main social and environmental issues between 2015 and 2030. In addition to having been adopted by all members of the United Nations, the SGDs offer several advantages.

First, they establish a comprehensive framework concerning environmental and social issues, applicable to all economies regardless of their level of development. Thus, while some issues such as ending hunger or ensuring access to water for all are often more relevant for low- and middle-income countries, other objectives such as fighting climate change or making cities safe, resilient and sustainable, are applicable at all levels of development.

Moreover, the SDGs can be considered as a frame of reference for sustainable development issues for a variety of actors, from governments to companies and investors. The private sphere is increasingly considering environmental and social issues, illustrating new forms of governance where subjects of general interest are no longer solely the prerogative of the public sphere. Considering the SDGs can help companies to think on how they create environmental, economic, and social value.

Finally, the SDGs help investors to question the long-term resilience of their assets and portfolios to the ongoing transformations. Then, investors can go even further by looking at their exposure to new solutions and economic models that will respond to long-term economic transformations. For example, the targets associated with the SDGs to significantly increase the share of renewable energy and to double energy efficiency by 2030 imply a profound transformation within the energy sector.

We consider the SDGs squarely in line with our mission. As a result, in 2016, Mirova decided to use this framework to define its responsible investment approach.

Figure 1: The 17 Sustainable Development Goals

	End poverty in all its forms everywhere		Reduce inequalities within and among countries
	End hunger, achieve food security and improved nutrition and promote sustainable agriculture		Make cities and human settlements inclusive, safe, resilient and sustainable
	Ensure healthy lives and promote well-being for all at all ages		Ensure sustainable consumption and production patterns
	Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all		Take urgent measures to combat climate change and its impacts
	Achieve gender equality and empower all women and girls		Conserve and sustainably use the oceans, seas and marine resources for sustainable development
	Ensure availability and sustainable management of water and sanitation for all		Protect, restore and promote sustainable use of territorial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss
	Ensure access to affordable, reliable, sustainable and modern energy for all		Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels
	Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all		Strengthen the means of implementation and revitalize the global partnership for sustainable development
	Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation		

Source: United Nations

Assessing Environmental and Social Quality by the SDGs

We believe that the SDGs will transform the economy as we know it. Acting as a responsible investor starts with taking a broader view of the way investors think about the environmental and social profile of the assets they finance. These interactions can be grouped into two categories:

- **Materiality**: how the current transitions are likely to affect the economic models of the assets financed either positively or negatively.
- **Impact:** how investors can play a role in the emergence of a more sustainable economy

We believe that these two approaches are closely linked. Our evaluation methodology thus seeks to capture the extent to which each asset contributes to the SDGs. From our perspective, this approach provides a relevant vision on both the “Materiality” and “Impact” aspects.

A Five-level Qualitative Analysis

Mirova has based its environmental and social evaluation method on four principles:

A RISK/OPPORTUNITY APPROACH

Achieving the SDGs requires taking two different dimensions into account that often go together.

- Capturing opportunities: when companies center their strategies on innovative business models and technologies focused on technological and societal transformation, they can often capture opportunities related to the SDGs.
- Managing risks: by proactively managing risks related to these transitions, companies can reduce and re-internalize their social and environmental externalities, which often takes the form of general management of sustainability issues.

This analysis structure gives equal importance to opportunities and risks. It is the first prism through which we analyze sustainable development issues.

A LIFE-CYCLE VISION

To identify the issues that could impact an asset, the analysis of environmental and social issues must consider the entire life cycle of products and services, from raw material extraction to end-of-life phase.

TARGETED AND DIFFERENTIATED ISSUES

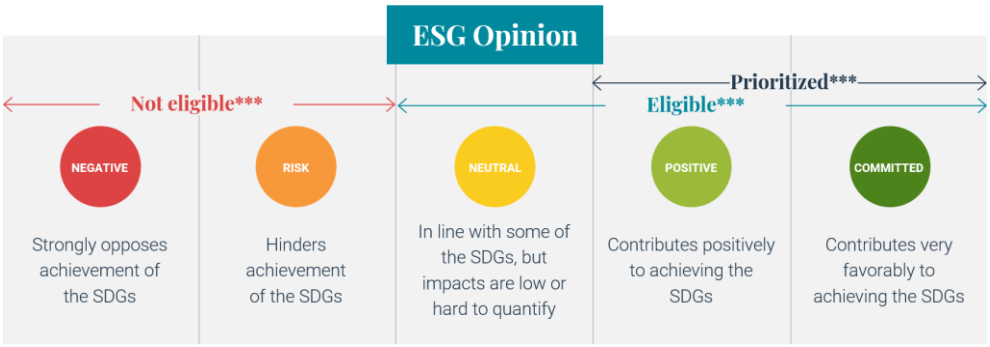
Our risk/opportunity analysis focuses on the elements most likely to have a real impact on the assets studied and on society in general. Additionally, the issues that economic players face

are very different depending on the sector, and can even vary within the same sector[3]. For example, it is important for us to focus on work conditions for suppliers in the textile industry, while for automobile manufacturers, the focus will be more on energy consumption during product use.

So, our analysis focuses on a limited number of issues adapted to the specificities of each asset.

A QUALITATIVE RATING SCALE

Our analyses are summarized through an overall qualitative opinion on five levels. This opinion assesses to what extent an asset contributes to the SDGs.



***[4]

This rating scale is based on the SDGs and their achievement. As a result, opinions are not assigned based on a distribution set in advance: we are not grading on a curve overall or by sector. Mirova does not exclude any industry on principle, and carries out a thorough analysis of the environmental and social impacts of any asset. For some sectors, this analysis may lead to the exclusion of all or some of its actors. For example, companies involved in fossil fuel extraction are considered “Risk” at best, while renewable energy companies are generally well rated.

An indicative grid provides some overall guidelines regarding the links between opportunities, risks and the overall sustainability opinion.

Sustainability Risks Review					
	Positive	Risk	Positive	Positive / Committed	Committed
	Neutral	Negative / Risk	Neutral	Neutral / Positive	Positive / Committed
	Risk	Negative	Negative / Risk	Risk	Risk
		Negative	Low or no	Significant	High
		Sustainability Opportunities Exposure			

3 For every sector, defining key issues is the subject of a specific study. This document is available on Mirova *website.* https://www.mirova.com/fr/recherche/comprendre#vision
4 *** For Mirova’s investments

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