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SUSTAINABLE IMPACT FRAMEWORK

Resources

Sectors:

- Metals
- Mining
- Machinery

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An affiliate of: NATIXIS INVESTMENT MANAGERS

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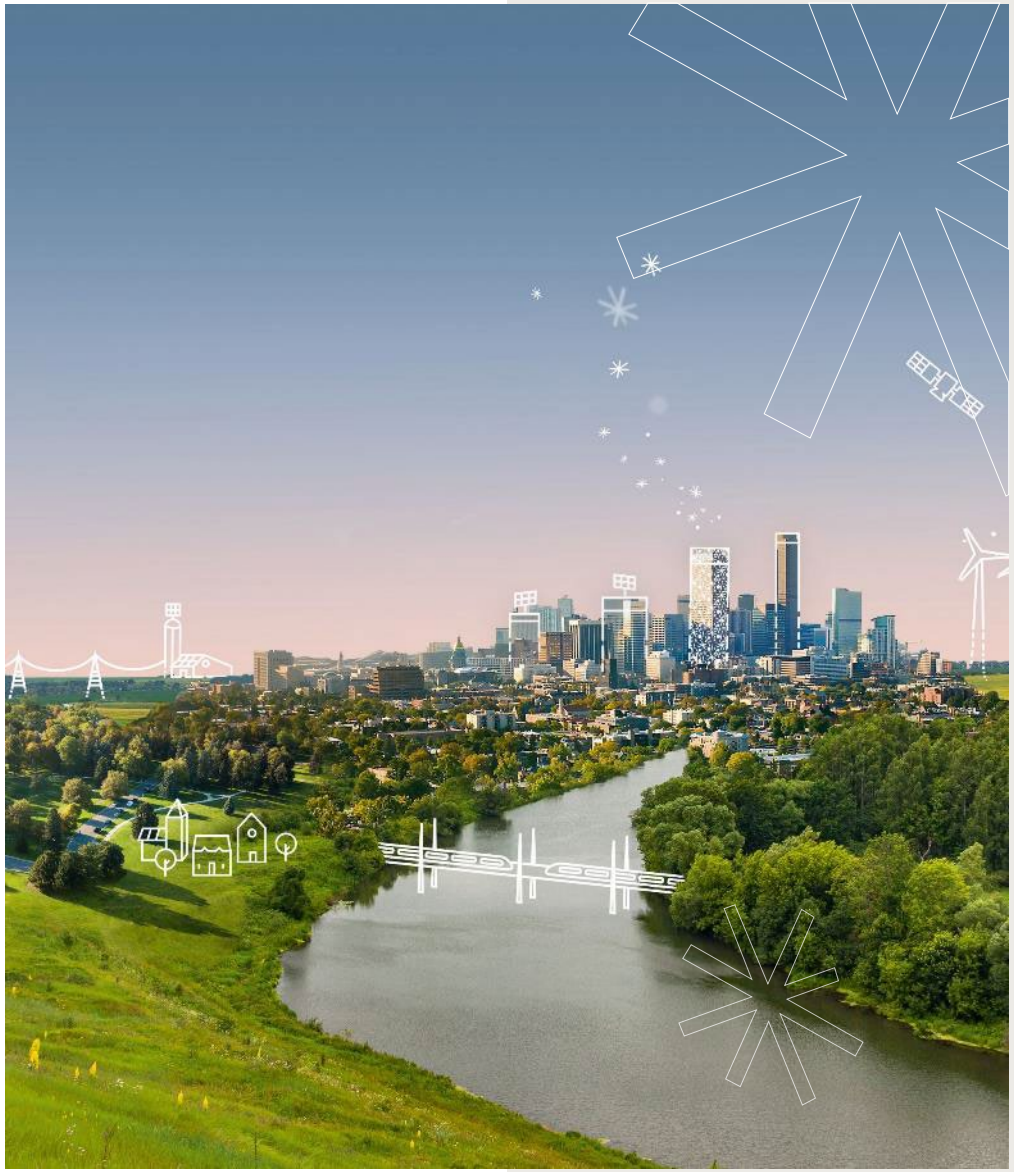
Executive Summary



Resources – Metals and Mining

As we strive for net-zero emissions by 2050 through various technologies, the demand for essential minerals is on the rise. The World Economic Forum recently cited a figure from BloombergNEF, projecting that between 2024 and 2050, we will need 3 billion tons of metals and minerals—equivalent to the weight of 300,000 Eiffel Towers[1]. While the mining sector plays a vital role in meeting this demand, it is essential to approach mining with a sense of responsibility. The sector currently grapples with challenges, including a negative reputation stemming from its environmental and social impacts as well as its links to fossil fuel extraction. At Mirova, we believe that investors can positively influence this emerging chapter in mineral and metal supply by channeling capital towards responsible mining and refining practices and advocating for standards that emphasize sustainability and transparency within the industry.

4-7% of the global GHG emissions[2]

The mining and metals sector accounts for around 4-7% of the global GHG emissions. For pure play miners, between 75 to 95 % of their GHG emissions fall under scope 3, reflecting the diverse emissions profile associated with different commodities. For instance, in gold mining, about 60% of emissions is related to the extraction process, while for aluminum, smelting contributes to around 80-85% of emissions[2]. There are various strategies that can help lower the GHG intensity of the production methods such as increasing the use of renewable energy, developing zero-emission mobile equipment and implementing circular economy principles. We are beginning to see mining companies commit to net zero scope 1 and 2 as well as short term reduction targets, however, few have made similar commitments for scope 3. Despite these efforts, progress has been slow, with the top 20 major mining companies showing little significant reduction in the last few years[3].

40% of mines with at least one allegation related to human rights[4]

Historically, the mining and metals sector has faced scrutiny for its negative impact on human rights throughout various stages of the value chain, particularly concerning issues such as child labor and the infringement of land rights for indigenous communities. This situation persists today, with 40% of mines linked to at least one allegation related to a publicly available human rights policy[4]. Such challenges have resulted in reputational harm that can influence investment decisions. As the industry increasingly operates in less developed regions and encounters heightened public scrutiny, it is essential to develop and implement human rights due diligence practices and benefit-sharing mechanisms with affected communities. When executed effectively, these initiatives can generate jobs and infrastructure, fostering a cycle of positive economic growth for the regions involved.

Over 50% of lithium and copper production in areas with high water stress levels[5]

Mining activities can severely impact the surrounding ecosystem and require significant land-use changes, with the extent of this impact varying based on factors such as the type of mine, the mineral being extracted, and the local context. Additionally, mining operations are frequently associated with substantial demand for water resources; for instance, copper facilities alone withdrew over 1.3 billion cubic meters of water in 2006[5], leading to competition with agricultural, domestic, and industrial needs. Mining operations may also contribute to contamination of water resources as a result of acid mine drainage, wastewater discharge, and tailings disposal. To minimize their environmental footprint and address potential climate risks like droughts, the mining sector, in collaboration with multiple stakeholders, must implement effective water and waste management policies.

1. https://www.weforum.org/stories/2025/01/critical-minerals-india-securing-low-carbon-global-economy/ ; 2. ICMM - Metals and Mining: Scope 3 Emissions; 3. IEA - Sustainable and Responsible Critical Mineral Supply Chains – Guidance for policy makers; 4. Business & Human Rights Resource Centre - Transition Minerals Tracker: 2024 Analysis; 5. IEA – The Role of Critical Minerals in Clean Energy Transition

Drivers of contribution and obstruction to sustainability goals

	Activities	Practices
Positive Impact	**Sustainable Activities** Industrial Efficiency for Climate Critical minerals for clean energy technologies Products from recycled raw materials Circular business models (reuse, upcycle) Automotive/Industrial safety	**Advanced Practices** Human Capital Management: • Diversity and inclusion • Job quality Climate Biodiversity *Advanced governance models*
Residual ESG Risks	**Harmful Activities[1]** Fossil Fuel Exposure / Expansion	**Risk Mitigation** Climate and GHG emissions Exposure to climate risks Biodiversity footprint Employees' labor rights Local community and indigenous people Human rights in the workforce and supply-chain Governance of sustainability Business ethics Tax practices

1. See: Minimum standards and exclusions, Mirova

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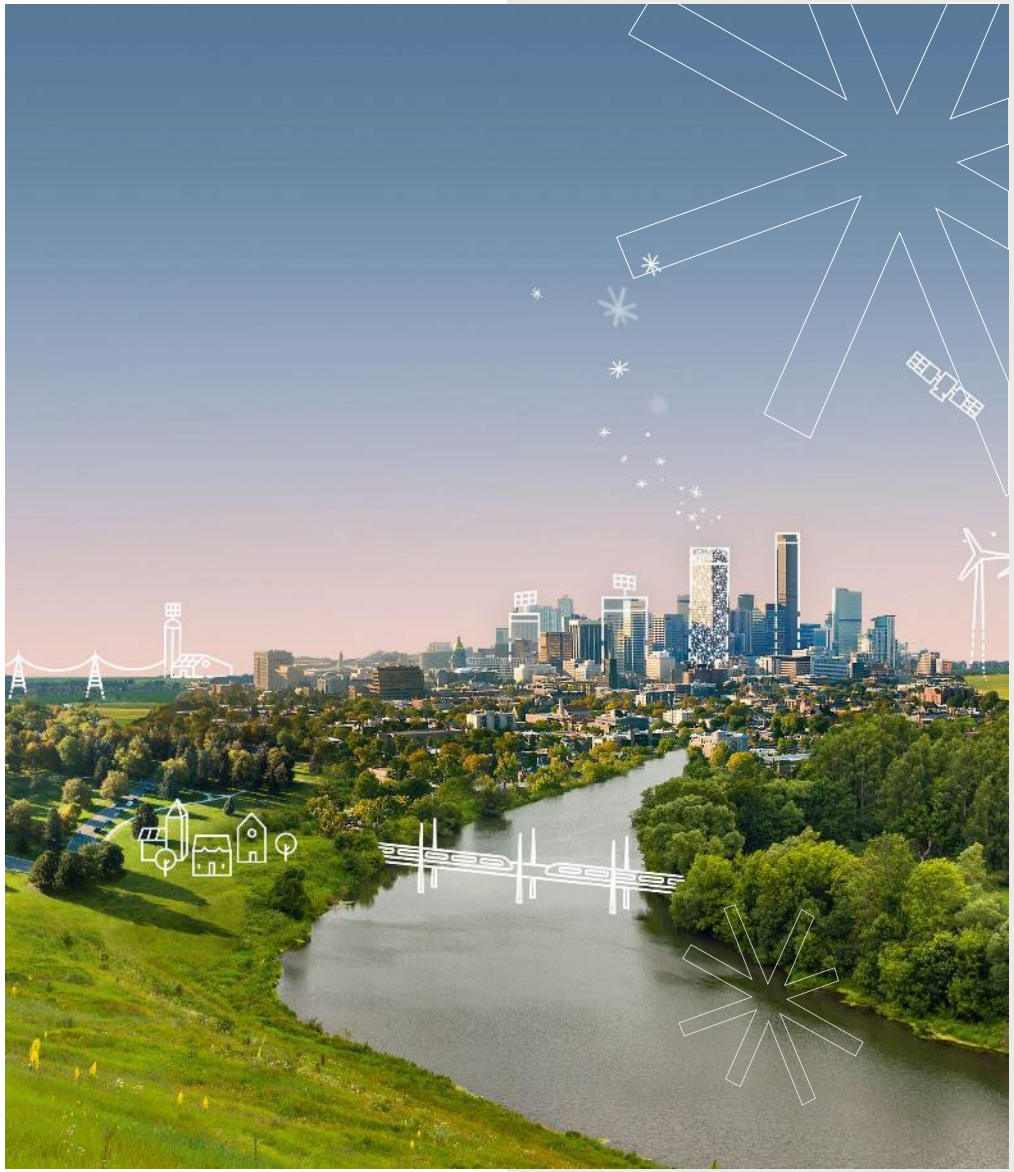
Positive Impact



Sustainable Activities

	CONTEXT	SUSTAINABLE ACTIVITY
CLIMATE	At the mine site level, various decarbonization strategies can be implemented, particularly by adopting less energy-intensive processes and fleets, which are major emission sources. The future of mining is expected to be electric, with advancements in fuel cell, battery, and hydrogen-powered equipment replacing diesel machinery. Currently, decarbonization efforts are more advanced for underground fleets and smaller mobile equipment, such as drills and loaders, than for larger surface equipment like excavators and haulage trucks. Innovations in this area from industrial machinery companies could lead to significant environmental benefits for the mining sector overall, including reduced carbon emissions and lower water consumption through closed-loop processing systems.	**Industrial Efficiency for Climate** ***[for GICS-3 Machinery Companies]*** Development, manufacturing, and/or distribution of the following type of products: • Energy efficient equipment and products aimed at reducing net greenhouses gases emissions; • Equipment and products aimed at providing environmentally efficient equipment or process monitoring for waste/water/pollution reduction.
BIODIVERSITY	Recycling plays a crucial role in enhancing the sustainability and security of critical minerals needed for the climate transition. It transforms 100 billion tonnes of mining waste[2] into valuable resources, reducing reliance on new mining operations and potentially lowering the need for such activities by 25-40% by 2050[2]. By expanding recycling infrastructure, we can mitigate environmental and social impacts while also decreasing greenhouse gas emissions from mineral production by up to 80%[2] and save 95% of the energy needed for aluminium[3]. This approach supports energy security, particularly in regions with limited mineral resources, and in line with regulatory frameworks.	**Products from recycled raw materials** • Companies manufacturing products containing high level of post-consumer recycled inputs such as recycled aluminum and steel. **Circular business models (reuse, upcycle)** • Companies recovering minerals from mine waste, e-waste, EV batteries and end-of-life scrap; • Companies integrating circular product design, repair, refurbishing, reuse and repurposing.

LOW POSITIVE IMPACT	MODERATE POSITIVE IMPACT	HIGH POSITIVE IMPACT
> 10% sustainable activities	> 20% to 50% sustainable activities	> 50% sustainable activities

1. ICMM – Safety Performance Report 2024, 2. IEA – Recycling of Critical Minerals, 3. International Aluminium

Focus on Critical Minerals in the Energy Transition

CONTEXT

The energy transition cannot happen without metals, and insufficient or delayed investment in critical energy materials may create significant bottlenecks in the anticipated transition. There is currently no universally accepted definition or list of critical minerals; classifications vary based on the needs and priorities of policymakers and industries, and they can change over time such as the US Department of Energy lists 50 critical minerals whereas the European Union focuses on 34. Generally, minerals are deemed critical when they are essential for economic and technological development but face potential supply risks due to factors such as scarcity, supply concentration, or geopolitical issues. The International Energy Agency identifies several critical minerals, including lithium, nickel, cobalt, manganese, and graphite, which are commonly used in clean energy technologies like electric vehicles and power generation (including solar, wind, hydropower, geothermal, and hydrogen). Copper is also crucial for electrifying power grids and rare earths are used in magnets for wind turbines and electric car motors. Additionally, platinum, palladium, and rhodium are essential for catalytic converters, while vanadium, nickel, and aluminum play important roles in energy storage. While we recognize these minerals as critical for advancing clean technologies, it's important to remember that they must be responsibly sourced and produced.

POSITIVE IMPACT

SUSTAINABLE ACTIVITY	IMPACT CRITERIA
Critical minerals for clean energy technologies Extraction and processing of critical minerals that are a key asset in the transition to clean energy and decarbonization demonstrating a primary application towards end-use green economic activities.	• Understanding the role of critical minerals in advancing new technologies and solutions for clean energy and climate change • Analyzing the greenhouse gas emissions associated with the entire lifecycle of critical minerals, from extraction through production to end use and recycling • Assessing the sustainability of their extraction and processing (environmental and social)

CONDITION FOR ELIGIBILITY

Be part of one of the following **key list**:

- 2023 DOE Critical Materials List
- IEA List of Critical Minerals 2022
- Fifth list 2023 of critical raw materials for the EU
- Australia's Critical Minerals List and Strategic Materials List
- Japan's List of Critical Minerals
- UK Government's Critical Minerals Strategy
- OECD Report on Critical Minerals; and

Demonstrate that the mineral **primary application is towards end-use green economic activities** such as renewable energy technologies, ZEVs and production of hydrogen; and

Responsibly extracted and processed.

LOW POSITIVE IMPACT	MODERATE POSITIVE IMPACT	HIGH POSITIVE IMPACT
> 10% sustainable activities	> 20% to 50% sustainable activities	> 50% sustainable activities

POSITIVE IMPACT

Sustainable Practices

	CONTEXT	SUSTAINABLE PRACTICE	
		Practices/measures expected:	Impact indicators examples:
HUMAN CAPITAL	**Job Quality** The decline of the coal sector is expected to significantly affect the livelihoods of communities dependent on it, while the increasing demand for energy transition minerals presents a vital opportunity for a just transition. This involves proactive and targeted measures to ensure that any negative social, environmental, or economic impacts of the energy transition are minimized for those who are disproportionately affected. It must prioritize labor rights, ensuring fair wages, safe working conditions, and the right to collective bargaining. Transparent social dialogue is crucial for managing mine closures and workforce changes, as well as for reskilling and compensating affected workers. The mining industry is also currently grappling with a talent shortage, with 71% of leaders reporting difficulties in recruiting and retaining skilled workers[1], particularly in specialized roles. This challenge is compounded by negative perceptions of the industry due to safety failures and cultural and diversity issues, as well as the inadequate infrastructure found in many remote mining locations. To address these challenges, companies need to establish a robust, long-term talent strategy that aligns with their production goals and anticipates future workforce needs.	1. **Develop employees' skills recognized on the labor market and anticipate shifts in skills.** 2. **Ensure fair remuneration and social benefits are sufficient for good living conditions.** 3. **Ensure employee satisfaction and wellbeing.**	Training hours per employee, % of workforce trained, Qualitative analysis of the training offering including upskilling and re-training programs, mentorships focused on young talents, and leadership development Measures in place for employees impacted by restructuring (financial severance, job-search assistance) Creation of internal universities / academies targeting actionable skillsets and accessible to most employees, Analysis of employees', executives' and shareholders' remunerations Existing and effective employees' association mechanisms Workplace wellbeing measures: flexible work arrangements, mental health support, counselling etc
	Diversity & Inclusion Diversity, equity, and inclusion remain significant challenges for the mining and metals sector, affecting talent attraction, workforce potential, and stakeholder expectations. Currently, women make up less than 15% of the global mining workforce and the sector has the 2nd largest median gender pay gap globally[2]. These disparities are due to multiple reasons, for example in some regions, cultural barriers prevent women from participating in mining activities due to religious or social constraints, as seen at Centamin's Sukari mine in Egypt[2]. Additionally, many mining operations are in countries where access to education and training for women is limited, making it difficult to enhance gender diversity unless companies take the initiative to provide these resources themselves. The sector should increase its efforts to remove inequalities within the industry through seeing the value of diverse and inclusive workplace by targeting to achieve gender equality, putting in place actions to eliminate all forms of harassment and discrimination as well as collaborate with stakeholders to attract minorities to mining-related study and jobs.	1. **Improve female and diverse representation especially at management/leadership level.** 2. **Ensure equal opportunities and increase awareness to overcome inequalities.** 3. **Ensure adapted and flexible career options.**	Percentage of women in the Executive Committee, difference between women representation in the workforce and Executive Committee, C-Suite female representation (CEO, CFO, CIO, CTO, CCO) Wage gap or credible target to reach pay equality & unadjusted pay gap, as well as move towards living wage Succession planning including at least one woman as a possible candidate for every Senior position Roadmap to improve recruitment of minorities and local/national employees as well as unbiased recruitment Gender-neutral leave policy and use of inclusive language Provision of daycare options (affordable and/or paid by the company) and work flexibility options

LOW POSITIVE IMPACT

> Advanced practices - Medium Stake topic

> Credible strategy to achieve advanced practices

MODERATE POSITIVE IMPACT

> Advanced practices - High Stake issues

1. McKinsey & Company - Has mining lost its luster? Why talent is moving elsewhere and how to bring them back; 2. ICMM - It Starts With Us — Taking Action on Diversity, Equity and Inclusion

Sustainable Practices

	CONTEXT	SUSTAINABLE PRACTICE	
		Practices/measures expected:	Impact indicators examples:
CLIMATE	As international commitments under the Paris Agreement grow as well as expectations from end clients, the mining industry looks to confront the challenge of producing more while emitting less. It is also important to acknowledge that the mining sector is not homogenous and energy intensity, and GHG emissions, vary widely across minerals. To improve carbon efficiency, mining and metal companies can adopt renewable energy, electrify their equipment as well have propre maintenance of machinery, and incorporate recycling of materials into their processes. Establishing clear science based long-term targets for achieving net zero emissions or carbon neutrality will further demonstrate their commitment to sustainable practices and contribute to a greener future for the industry. It is crucial for management incentives to align with these initiatives to reduce their carbon footprint.	**Implement robust decarbonization strategy on all three scopes**	GHG[1] emissions reduction targets on all 3 scopes, preferably aligned with the Science Based Target Initiative (SBTi) and effective reduction in emissions Scope 1 & 2[3] : emission by machines and vehicles fleets for mining and processing operations such as miling and smelting, fugitive methane, indirect emissions from electricity purchase Scope 3[4] : suppliers' emissions, purchased goods and services, waste generated in operations, business travel, downstream transportation and distribution, processing and use of sold products, end of life treatment Decreasing trend of GHG emissions on all 3 scopes Loss of CO2 absorption from mining projects
BIODIVERSITY	Biodiversity is essential for sustaining human livelihoods and life itself, and it holds significant importance for many indigenous peoples whose cultures and histories are deeply intertwined with it. As the mining and metal industries face increasing scrutiny from NGOs and local communities, it is crucial to better understand the links between these activities and their potential negative impacts on biodiversity. To address these challenges, the sector should implement improved biodiversity policies during the early stages of exploration and pre-feasibility studies, as well as throughout all phases of mining, processing and smelting operations and a mine closure plan. Risks also arise during the closure of a mine or a refining plant; therefore, establishing clear mitigation and rehabilitation objectives for affected areas is vital for achieving optimal environmental and social outcomes. Additionally, there is a strong emphasis on ensuring shared water use and maintaining water quality in collaboration with local communities, particularly in regions experiencing significant water stress, such as Chile, Central Asia, and Eastern Australia.	1. **Transparent disclosure** 2. **Sustainable management of water sources and air/water pollution reduction** 3. **Conservation of ecosystems and rehabilitation/restoration plans** 4. **Targets standardized such as SBTN, LEAP, TNFD**	Screening and scoping of biodiversity issues in Environmental & Social Impact Assessments Specialist expertise to establish a biodiversity baseline Disclosure of a biodiversity action plan aligned with the CSRD guidelines and/or the TNFD framework as well as disclosure of spendings linked to achieve the plan Biodiversity and ecosystem protection objectives and targets aligned the SBTn framework , Influx Management plan Improved biodiversity and/or ecosystem services Effective consultation and engagement tools with key stakeholders to support biodiversity protection and enhancement Use the locate-evaluate-assess-prepare (LEAP) approach

LOW POSITIVE IMPACT

> Advanced practices - Medium Stake topic

> Credible strategy to achieve advanced practices

MODERATE POSITIVE IMPACT

> Advanced practices - High Stake issues

The information provided reflects Mirova's opinion/the situation as of the date of this document and is subject to change without notice. 1. Greenhouse gases. 2. The Shift Project, 2021 3. Direct emissions created by a company's activities and Emissions from the electricity a company uses in its operations. 4. Indirect emissions from a company's supply chain, distribution, use of products, and product disposal. 5. OECD, 2018. Source: Mirova

Advanced governance model

CONTEXT

Mirova aims to promote the development of a corporate vision focused on the creation of collective value over the long term. Corporate governance should be shaped to include the interests of its key stakeholders. We believe that the creation of wealth requires a long-term perspective, which takes into account sustainability issues. Mirova encourages companies to include environmental and social issues in its purpose, and to adapt their articles of association accordingly. We feel that shareholders have a role to play in spreading this vision of what a company should be. Thus, we are promoting the development of a long-term shareholder base, the creation of governing bodies that serve all stakeholders and address CSR[1] issues, the introduction of a compensation policy which is not only fair to its stakeholders, but which also promotes sustainable growth, and -increased transparency and a better quality of both financial and extra financial information, through annual audited reports covering all these issues. Advanced governance practices only foster sustainability but is not a standalone driver of impact.

ADVANCED GOVERNANCE MODEL DETAILS

Practices/measures expected	Impact indicators examples
Commitment to long-term shared value creation	Demonstrate how value created is shared fairly amongst company stakeholders. Strive towards the model of a purpose-driven organization or/and a B-Corp organization.
Integrate stakeholders in the decision-making process	Create a Sustainable Development Committee or sustainability representative at the board level, with regular meetings throughout the year. Sustainability items are systematically integrated into the board's agenda.
Fair taxes & governance	Provide country-by-country reporting on tax payments.

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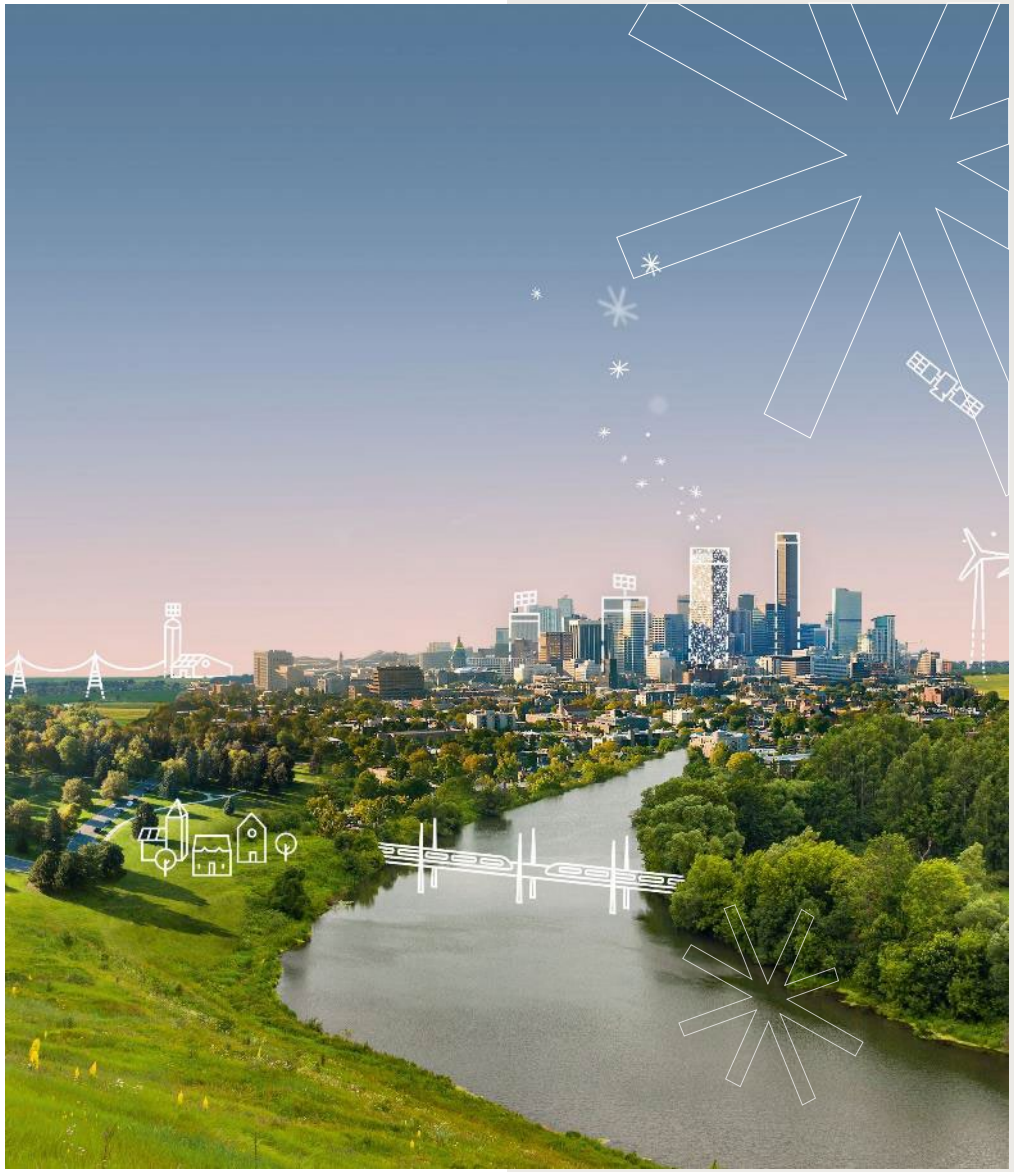
ESG Risks



Climate

CONTEXT

The mining and metal sector faces significant risks related to climate change, including regulatory pressures to reduce greenhouse gas emissions and increasing costs due to carbon pricing. To navigate these challenges, companies must enhance their data transparency, develop clear transition roadmaps, and establish science-based long-term goals for achieving net zero or carbon neutrality. These steps are crucial for aligning with the Paris Agreement and adapting to evolving regulatory landscapes.

The industry faces significant vulnerabilities to the physical impacts of climate change, primarily due to the nature and location of its operations, which frequently involve logistics elements such as ports and railroads. As climate change leads to more frequent droughts and extreme weather events, companies must assess physical risks and integrate climate resilience into their sustainability strategies and operations. Additionally, it's important to consider the potential increase in competition for water resources with local communities, given that mining operations have substantial water requirements. Therefore, it is important that they implement thorough planning, comprehensive geohydrological modeling, and effective monitoring programs.

MINIMUM STANDARDS

Type of ESG risk:	Risk assessment indicators examples:	
Climate footprint	Definition of a decarbonization strategy to reduce major sources of emissions	
	Calculation of GHG Emissions on all 3 scopes or ongoing evaluation	
	Use CDP's disclosure platform, which includes guidance on climate change, forests, water security, biodiversity and plastics.	PAI #1 PAI #2 PAI #5
Exposure to climate risks	Conducting geolocated asset level analysis to determine assets in areas of high physical risks (TCFD)	
	Incorporating climate resilience and business continuity planning in climate plans	
	Investing in climate-ready infrastructure to ensure resilience such as restoration of mangrove forests and wetlands	

MINIMUM STANDARDS REQUIREMENTS – Focus Coal and Fossil Fuel Exposure

PAI #4

A 2020 study by McKinsey[1] estimates that the mining sector, specifically extraction and processing of coal mining is responsible for 4% to 7% of direct GHG emissions globally. The study highlights that between 75% and 85% of these GHG emissions come from fugitive methane emissions from coal mines, which account for about 3% to 6% of total global emissions. The rest (roughly 1% of global GHG emissions from the mining sector) is attributed to mining extraction and processing, both of which are Scope 1 and Scope 2 emissions (Delevingne et al., 2020). Multiple mining companies operate in a diversified manner, extracting various minerals, which can include an exposure to fossil fuels. This raises conflicts with our minimum standards as detailed below:

FOSSIL FUEL EXPOSURE

Exclusion applies to companies deriving:

- Coal: >1% of their revenues from exploration, mining, extraction, distribution or refining of hard coal and lignite.
- Unconventional oil & gas: > 5% of their revenues from hydraulic fracturing, arctic drilling or oil sands.
- Oil: >10% of their revenues from the exploration, extraction, distribution or refining of oil fuels.
- Natural gas: 50% of sales derived from the exploration, extraction, manufacturing or distribution of gaseous fuels.
- Power generation from fossil fuels: >50% of their revenues from electricity generation with a GHG intensity of more than 100 g CO_2 e/kWh.
- Total fossil fuel exposure: >50% of their revenues from coal, oil, natural gas, fossil fuel power and fossil fuel services.

FOSSIL FUEL EXPANSION

Exclusion applies to companies involved in:

- Coal: New project related to the exploration, mining, extraction, distribution or refining of hard coal and lignite.
- Upstream Oil & gas: Exploration or development of new oil and gas fields, or in the expansion of existing fields.

1. McKinsey - Climate risk and decarbonization: What every mining CEO needs to know

Biodiversity

CONTEXT

Mining operations require significant water for tasks like ore processing, dust suppression, and machinery cooling, which can strain local water supplies. For instance, extracting one ton of lithium can consume up to half a million gallons of brine water[1]. Although recent advancements and regulations aim to mitigate these risks, over 16% of the world's critical mineral mines are situated in regions already experiencing high or extreme water stress[1]. Therefore, enhancing water stewardship, setting measurable targets, and implementing actions like increasing water recycling and utilizing alternative water sources are essential.

Mining activities and processing operations can lead to pollution of land, freshwater, and oceans through the leaching of toxic chemicals and heavy metals, as well as the discharge of highly saline or acidified wastewater and elevated-temperature water, all of which can harm aquatic life and human health. Additionally, mining and metal processing release dust, particulate matter, and other pollutants into the atmosphere, including cyanide vapor and byproducts from explosives. Unaddressed mine pollutants can alter the geochemistry of land and water, making it crucial to improving extraction efficiency rate, and developing sustainable or natural chemical and non chemical extraction techniques

Globally, 8% of known mining properties overlap with IUCN Protected Areas, 7% with Key Biodiversity Areas (KBAs), and 16% with Remaining Wilderness. Additionally, nearly one-third of the world's mine tailings are located within or near protected conservation areas. Between 2001 and 2019, gold mining led to the highest levels of direct deforestation from mining activities, followed by bauxite, iron ore, and copper. It's important to note that the area affected by mining operations is typically larger than the direct physical footprint of the projects. If these risks are not effectively managed, they can lead to regulatory penalties, damage to a company's reputation, loss of habitats for endangered species, and eroded trust among local communities and stakeholders.

MINIMUM STANDARDS

Type of ESG risk:	Risk assessment indicators examples:	
Water usage and dependency	Management and monitoring of own operations' water and completing water footprint assessment, as well as public reporting	
	Take inspiration from the technical guidance provided for freshwater and land by SBTN	
	Assessment for long term water treatment project and adaptive management plan	PAI #8 PAI #9
Contaminations and pollution from hazardous chemicals	Management plan for hazardous materials developed by professionals as to prevent all risks and impacts on human health or safety, biodiversity, or the environment	
	Procedures for safe transportation (to the site and associated facilities), handling, storage, re-use, recycling, treatment and disposal of hazardous chemicals	
	Monitor and evaluate	
Tailings management and protected areas	Orientate waste to waste disposal providers that are working in compliance with applicable standards & regulations, depending on geographies, decommissioning of obsolete network facilities	
	Managing tailings safely and efficiently in line with international standards	
	Management and monitoring of own operations' waste and aim for waste reduction	

Focus on Deep Sea mining and Tailings disposal in the sea:
With the need for more minerals, different actors are starting to look to other mineral deposits notably deep sea mineral resources and disposals of tailings in the sea. Currently, they are multiple exploration contracts in "the Area" issued by the International Seabed Authority (ISA). Deep-sea mining poses substantial risks, including economic and technical challenges related to the unique technologies needed for underwater resource extraction, which differ significantly from those used in traditional mining. Additionally, the potential for severe environmental impacts, such as habitat disturbance and sediment plumes that can harm marine ecosystems, raises concerns about biodiversity loss and the long-term ecological effects, prompting calls for thorough assessments and regulatory frameworks before proceeding with this type of mining activities.

1. World Economic Forum - Nature Positive: Role of the Mining and Metals Sector

Working conditions, human rights and local communities

CONTEXT

Mines and refining plants are dynamic and complex environments characterized by the constant use of heavy vehicles and equipment, hazardous chemicals, and the movement of large volumes of materials, often in remote and challenging locations. Although most companies claim a commitment to safe working conditions, only two-thirds allocate adequate resources to uphold this commitment[1]. By establishing robust internal practices, companies can reduce the risk of harm and fatalities for workers, contractors, and the public through safety assessments, monitoring systems, and training programs. Ensuring compliance with labor laws, promoting living wages, and collaborating with suppliers to maintain ethical labor standards are essential steps. Furthermore, offering upskilling training is vital to support workers and communities affected by mine closures.

With over 50% of known reserves of minerals located on or near Indigenous lands[2], if they are not adequately regulated, they can have severe negative effects on communities, including forced relocations. These issues can create social tensions and lead to violent conflicts. As a result, companies risk damaging their reputation, which could lead to the withdrawal of exploration requests, the revocation of mining permits, or a decline in further investments. To mitigate these impacts and create potential value for local communities, companies must engage and consult with communities before starting a project, support local job creation, and invest in community development to foster positive relationships and ensure that the benefits of mining projects are shared with those most affected.

The mining industry faces significant human rights risks, especially in areas impacted by conflict and violence. Issues such as child labor, forced evictions, and unsafe working conditions are often more pronounced in these regions. While large-scale mining operations run by international companies generally encounter lower risks, they frequently interact with artisanal and small-scale mining (ASM) activities, which can heighten the potential for human rights abuses. For instance, child labor has been reported in approximately 30% of artisanal cobalt mining sites in the Democratic Republic of Congo[3]. To address and mitigate these risks, mining companies should establish clear policies and procedures, including a Supplier Code of Conduct. Implementing thorough background checks on workers, conducting due diligence on suppliers and subcontractors, and creating a whistleblower system are essential steps in protecting human rights within the industry.

MINIMUM STANDARDS

Type of ESG risk	Risk assessment indicators examples
Employees' labor rights	Basic measures in place for employees impacted by restructuring (financial severance, re-training, job-search assistance etc) Measures to promote fair working conditions and a sustained social dialogue in countries with less stringent regulations, meeting minimum wage Anonymous reporting channel to report non-ethical behaviors in the workplace Frequency and severity of health & safety accidents (direct workers and contractors) decreasing overtime, ISO 45001 certification of sites Measures to reduce the use harmful substances in the production process
Local community and Indigenous people	Indigenous and Community Relationships Protocol Obtain the free, prior and informed consent (FPIC) of Indigenous Peoples where significant adverse impacts are likely to occur, as a result of relocation, disturbance of lands and territories or of critical cultural heritage (UNDRIP; ILO 169, OECD Guidance) Resettlement Action Plan (RAP) or equivalent Awareness and training on the history, traditions and rights of Indigenous peoples to all employees
Human Rights in the workforce	Existence of a Code of Conduct for Employees and Suppliers that includes Human Rights and Labor Rights considerations (preventing forced and child labor) Join a multistakeholder industry initiative and promote the development of ambitious environmental standards in the supply-chain (e.g. Initiative for Responsible Mining Association (IRMA), Responsible Minerals Initiative (RMI), Copper Mark, ASM Cobalt Framework, etc.) Violation of UNGC principles and OECD Guidelines for Multinational Enterprises and implementation of corrective measures Implementation of a policy to monitor compliance with UNGC principles or OECD guidelines for multinational enterprises

PAI #10
PAI #11
PAI #16

The information provided reflects Mirova's opinion/the situation as of the date of this document and is subject to change without notice. Source: Mirova.

1. IEA – The Role of Critical Minerals in Clean Energy Transition; 2. Just Transition Finance Lab – Unjust minerals: investing in the changes needed for a just transition in the mining sector; 3. IEA – Sustainable and Responsible Critical Mineral Supply Chains

Governance

CONTEXT

The credibility and robustness of the company's sustainability strategy is supported by a comprehensive ESG governance structure and the integration of ESG criteria in the management remuneration. Additionally, business ethics is a critical concern, and companies must take measures to mitigate the risks associated with internal misconduct, including corruption, fraud, and bribery.

The mining sector faces distinct challenges, particularly as countries with low scores on Transparency International's Corruption Perceptions Index, contested governments, or ongoing conflicts hold a significant portion of the world's remaining mineral wealth[1]. This share is expected to grow as resources become scarcer, intensifying competition between governments and corporations for access to valuable minerals. Consequently, mining companies are often exposed to increased risks related to corruption and political instability. A survey of foreign bribery enforcement actions by the Organization for Economic Co-operation and Development found that almost 20% of cases occurred in the extractive sector[2], highlighting the need for robust governance systems.

To navigate these challenges effectively, mining companies must prioritize the development of high-quality governance structures. Positive measures have already been implemented, such as anti-corruption policies, employee training programs, "whistleblower" initiatives to promote ethical behavior, and compliance with national regulations on board independence.
However, substantial obstacles remain in consolidating and improving governance standards, especially in regions with heightened risks. Addressing these challenges is crucial to ensure the rapid deployment of low-carbon technologies necessary for combating the climate crisis while maintaining the mining sector's contributions to sustainable development. Failing to do so can deter investment, create unpredictable regulatory environments, and expose companies to long-term liabilities and sanctions.

MINIMUM STANDARDS

Type of ESG risk	Risk assessment indicators examples
Governance of sustainability	Existing governance structure enabling the mitigation of environmental and social risks Disclose breakdown of value among stakeholders, improving transparency around employee remuneration and payroll Integration of ambitious and binding sustainability criteria – assessed through predetermined, quantifiable metrics– into the variable compensation of top executives All Board members are trained on sustainability topics Presence of employee representatives at board level (beyond regulatory requirements) Unadjusted gender pay gap and board gender diversity **PAI #12** **PAI #13**
Business Ethics	Robust Business ethics policies covering anti-corruption, anti-competitive and bribery policies Transparency about lobbying practices and objectives and to publicly disclose facilitation payments Evidence of effective whistleblower channels and transparency around cases reported and actions implemented Systematic training on Company's and Suppliers' Code of Conduct **PAI #17**
Tax practices	Effective tax rate vs. equal statutory tax rate Absence of controversies or evidence of aggressive tax optimization practices Estimated exposure to tax havens* or tax non-cooperative jurisdictions with no real activity in the country

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1. Natural Resource Governance Institute - Preventing Corruption in Energy Transition Mineral Supply Chains; 2. IEA – The Role of Critical Minerals in Clean Energy Transition
* As defined in Mirova's Minimum Standards Policy.

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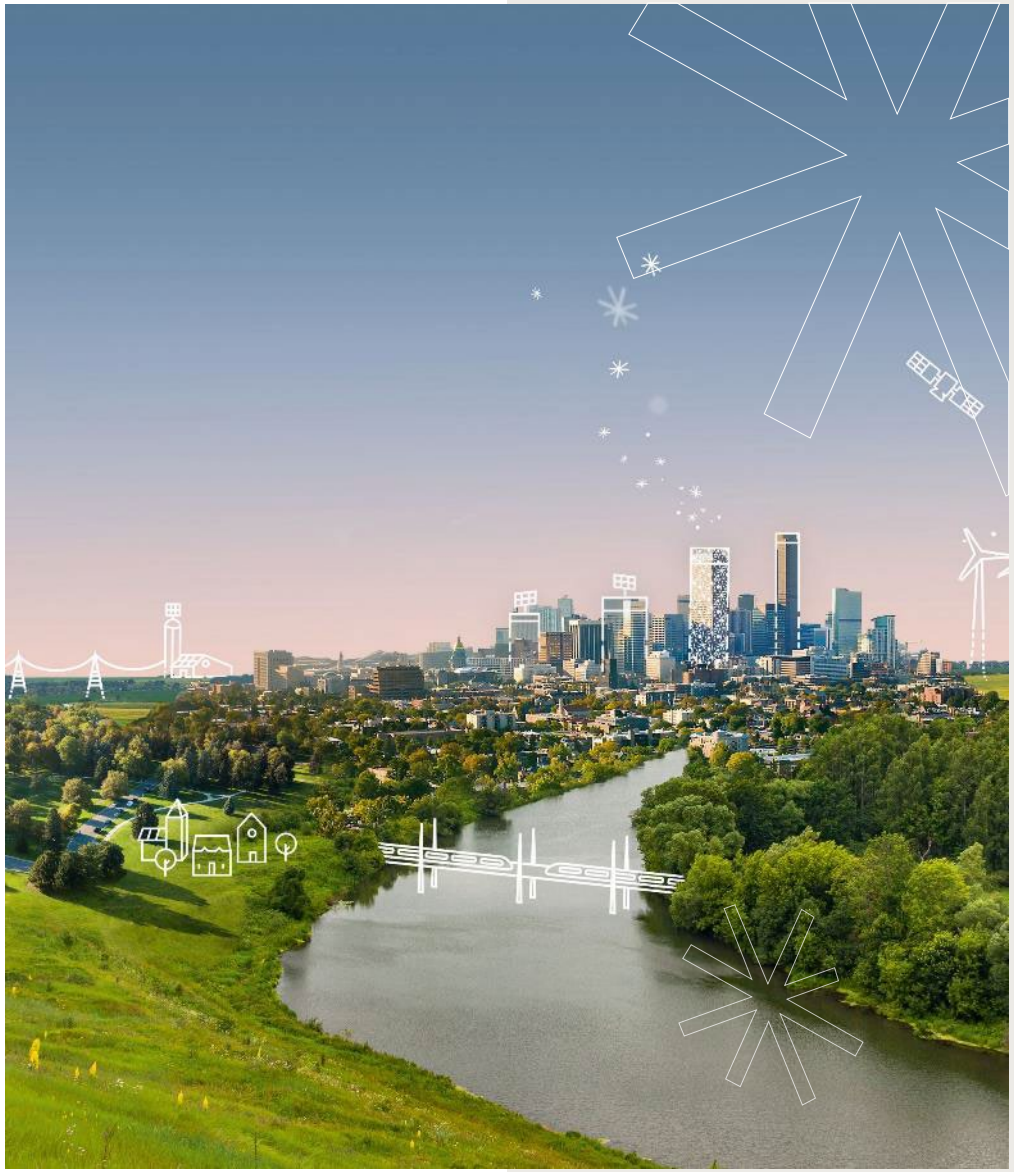
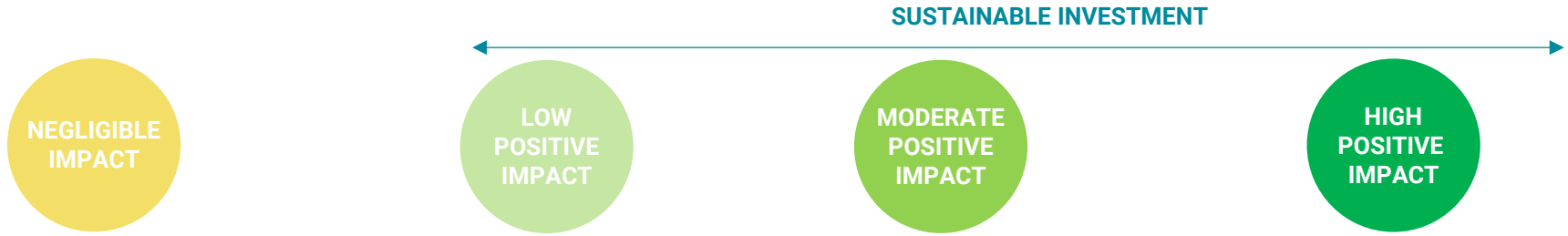
Appendices



Positive Impact

According to Mirova's internal methodology, contribution to the SDGs can be grouped into two main categories, which are often complementary.

- The **"activities"** i.e. the products and services they offer.
- The "**practices**" i.e. the way operations can contribute to create sustainable and inclusive jobs, or by having strong commitments to net zero targets beyond their green products offerings, etc.



ACTIVITIES	Marginal or no exposure to sustainable activities.	From 10% to 20% revenues from sustainable activities.	From 20% to 50% revenues from sustainable activities.	> 50% revenues from sustainable activities.
	In these sectors, the positive contribution is mainly analyzed through revenues exposure but not only. We complement this exposure with a qualitative review of the solution's impact. ESG KPIs to assess the level of impact generated can include among others: tons of recycled or secondary content, share of sales minerals that will be used in clean energy technologies, number of jobs created, investment in infrastructures, KwH of energy/GHG emissions saved by the product etc.			
PRACTICES	Absence of advanced practices.	One or more **Advanced practices** on Medium Stake issues. or credible strategy to transition to advanced practices.	One or more **Advanced practices** on High Stake issues.	
	For the purpose of defining High/Medium Stakes, Mirova relies on external classifications, to the extent possible. Indicative High Stake sectors are defined as follows, but may be adapted on a case-by-case basis, notably depending on a company/project effective exposure to high stake activities. • Climate: Mirova relies on the list defined by NZIF and retains Nace codes A to H and J to L as High Stake. • Biodiversity: Mirova relies on the definition of its supplier Iceberg Datalab and retains all GICS except from GICS 5020, 4510, 5010 and 3510 as High Stake. • Human Capital: Mirova considers sectors that are most exposed to arduous working conditions as High Stakes and all GICS except from GICS 5020, 4010, 4020, 4030, 4510, 3520, 6010 and 6020.			

ESG risks

SECTOR INHERENT RISK LEVEL: HIGH

As the demand for renewable energy surges, so too will the need for critical minerals and metals essential for clean technologies. However, the sector remains one of the most carbon-intensive industries, presenting significant environmental and social challenges. Mining operations and processing often result in land disruption, deforestation, and loss of biodiversity, with extraction processes contributing to soil erosion and water contamination. Furthermore, the industry is under increasing pressure from clients and regulators to reduce greenhouse gas emissions. Community relations also pose challenges, particularly concerning land rights disputes that may displace local and Indigenous populations. Conversely, mining and metal companies are increasingly expected to play a role in the economic development of these regions by creating jobs and investing in local infrastructure. Additionally, labor practices within the industry raise serious concerns about worker safety, health risks, forced labor, and unsafe working conditions. Upholding fair wages and benefits, while respecting workers' rights, is essential for fostering a motivated and committed workforce.

COMPANY INHERENT RISK LEVEL

A company inherent risk level may differ from the inherent risk level of the sector.
The definition of the company inherent risk level may also be determined by the specificities of the business model, the nature of the activities and their locations as well as that of their suppliers (incl. country specific risks).

MAIN ESG RISKS FACTORS

- Climate change
- Exposure to climate risks
- Water usage and dependency
- Contaminations and pollution from hazardous chemicals
- Tailings management and protected areas
- Labor and Human Rights
- Governance of Sustainability
- Business Ethics
- Tax practices

RESIDUAL ESG RISK LEVEL

LOW RESIDUAL RISK	Satisfactory management of the company's or project's main sustainability risks on most material issues.
MEDIUM RESIDUAL RISK	Current management in place does not fully cover all ESG risks but these are considered as moderate and current practices are deemed acceptable.
HIGH RESIDUAL RISK	Companies demonstrating significant mitigation efforts operating in sectors with industry-wide complex and unaddressed challenges - systematically under targeted engagement.
SIGNIFICANT HARM	Not eligible for investment.

SUSTAINABLE INVESTMENT

Principal Adverse Impact Indicators

ADVERSE SUSTAINABILITY INDICATOR		MOST RELEVANT	Thresholds / Criteria
CLIMATE AND OTHER ENVIRONMENT-RELATED INDICATORS			
Greenhouse gas emissions	1. GHG emissions	X	Systematic integration in qualitative internal analysis
	2. Carbon Footprint	X	
	3. GHG intensity of investee companies		Not applicable
	4. Exposure to companies active in the fossil fuel sector	X	Systematic integration in qualitative internal analysis
	5. Share of non-renewable energy consumption and production	X	Systematic integration in qualitative internal analysis
	6. Energy consumption intensity per high impact climate sector		
Biodiversity	7. Activities negatively affecting biodiversity sensitive areas	X	Exclusion of companies or projects significantly harming biodiversity sensitive areas
Water	8. Emissions to water	X	Systematic integration in qualitative internal analysis
Waste	9. Hazardous waste and radioactive waste ratio	X	Systematic integration in qualitative internal analysis
INDICATORS FOR SOCIAL AND EMPLOYEE, RESPECT FOR HUMAN RIGHTS, ANTI-CORRUPTION AND ANTI-BRIBERY MATTERS			
Social and employee matters	10. Violations of UN Global Compact principles and Organization for Economic Cooperation and Development (OECD) Guidelines for Multinational Enterprises	X	Exclusion of companies violating UNGC and OECD principles Systematic integration in qualitative internal analysis Part of controversy monitoring
	11. Lack of processes and compliance mechanisms to monitor compliance with UN Global Compact principles and OECD Guidelines for Multinational Enterprises	X	
	12. Unadjusted gender pay gap	X	Systematic integration in qualitative internal analysis
	13. Board Gender Diversity	X	Engagement plans / ESAP with investees
	14. Exposure to controversial weapons (anti-personnel mines, cluster munitions, chemical weapons and biological weapons)		Exclusion of companies or projects exposed to controversial weapons or involved in the production of re-exportable weapons
INDICATORS FOR SOCIAL AND EMPLOYEE, RESPECT FOR HUMAN RIGHTS, ANTI-CORRUPTION AND ANTI-BRIBERY MATTERS			
Human Rights	16. Number of identified cases of severe human rights issues and incidents	X	Systematic integration in qualitative internal analysis Part of controversy monitoring
Anti-corruption and anti-bribery	17. Number of convictions and number of fines for violation of anti-corruption and antibribery laws	X	Systematic integration in qualitative internal analysis Part of controversy monitoring

Useful Resources

SFDR

- Sustainable Finance Disclosure Regulation (SFDR): positioning of Mirova Funds
- Description of the principal adverse impacts on sustainability factors

POLICIES AND METHODOLOGIES

- Our approach to impact
- Our approach to impact & ESG assessment
- Our Taxonomy Sustainable Solutions
- Minimum standards
- Voting and Engagement policies
- Temperature alignment of listed investment portfolios
- Transparency codes

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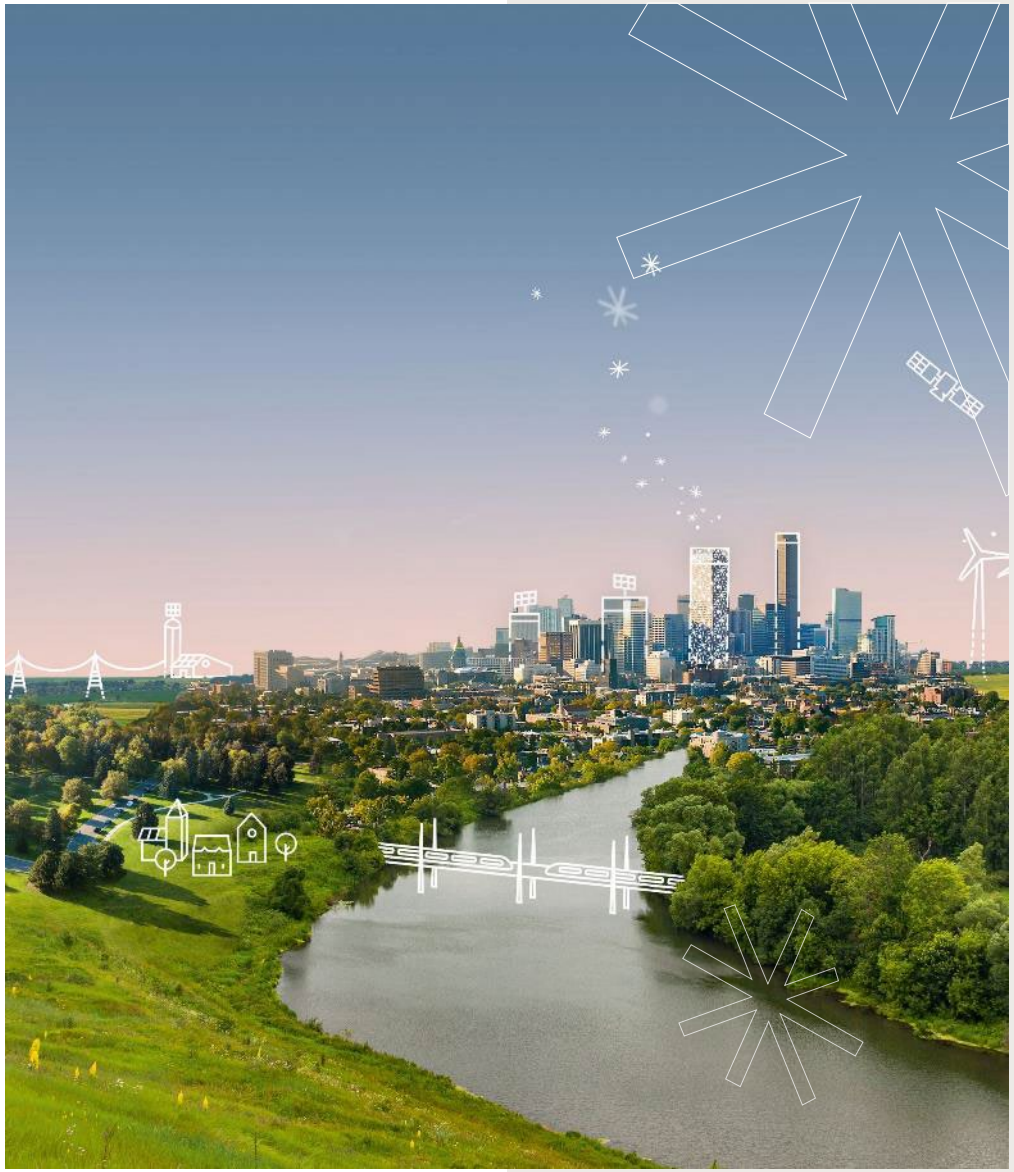
Disclaimer



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MAIN RISKS

ESG Investing Risk & Methodological limits

By using ESG criteria in the investment policy, the relevant Fund's objective would in particular be to better manage sustainability risk and generate sustainable, long-term returns. ESG criteria may be generated using Mirova's proprietary models, third party models and data or a combination of both. The assessment criteria may change over time or vary depending on the sector or industry in which the relevant issuer operates. Applying ESG criteria to the investment process may lead Mirova to invest in or exclude securities for non-financial reasons, irrespective of market opportunities available. ESG data received from third parties may be incomplete, inaccurate or unavailable from time to time. As a result, there is a risk that Mirova may incorrectly assess a security or issuer, resulting in the incorrect direct or indirect inclusion or exclusion of a security in the portfolio of a Fund.

Sustainability risks

The Sub-Funds are subject to sustainability risks as defined in the Regulation 2019/2088 (article 2(22)) by environmental, social or governance event or condition that, if it occurs, could cause an actual or a potential material negative impact on the value of the investment.

Sustainability Risks are principally linked to climate-related events resulting from climate change (i.e. Physical Risks) or to the society's response to climate change (i.e. Transition Risks), which may result in unanticipated losses that could affect the Sub-Funds' investments and financial condition. Social events (e.g. inequality, inclusiveness, labour relations, investment in human capital, accident prevention, changing customer behaviour, etc.) or governance shortcomings (e.g. recurrent significant breach of international agreements, bribery issues, products quality and safety, selling practices, etc.) may also translate into Sustainability Risks. Sustainability factors consist in environmental, social and employee matters, respect for human rights, anti-corruption and anti-bribery matters (the "Sustainability Factors"). Portfolio investment process includes binding and material ESG approach to focus on well rated securities from an ESG viewpoint in order to mitigate potential impact of Sustainability Risks on portfolio return. More information on the framework related to the incorporation of Sustainability Risks is to be found in the sustainability risk management policy of the Management Company on its website.

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