



Polymetal International plc Green Financing Second Opinion

October 05, 2020

Polymetal International plc (together with its subsidiaries - “Polymetal”) is a Russian ore extractor and gold and silver producer with more than 12,000 employees. Their portfolio comprises 9 gold and silver mines as well as 2 major development projects across Russia and Kazakhstan. As a background, the global demand for gold is dominated by the jewelry and investment industry. Only 7.47% of demand is due to the technology industry. Nearly 8% of global demand for silver was due to photovoltaics (expected to increase in the future) and 56% due to electronics. Mining products are critical for a transition to a low carbon economy as, e.g., gold is used in electronic products and silver and copper in wind and solar energy components.

Polymetal plans to invest in electric mining equipment, standalone renewable energy power generation to replace diesel generators, as well as mining waste and water management projects. Investments in non-fossil fuel supporting mining infrastructure that is associated with fossil fuel intensive production bears a significant risk of lock-in and rebound. Some of Polymetal’s mines are connected to the fossil fuel intensive Russian electricity grid (325 to 962 gCO₂/kW). In 2019, less than 3% of Polymetal’s energy consumption was based on renewable energy, while the remaining part was based on fossil fuels and purchased electricity. Diesel accounts for almost 50% of total energy consumption and is used for mobile mining equipment, heating and electricity generation. Polymetal excludes from financing investments in new fossil fuel equipment as well as fossil fuel-based efficiency improvements.

While the gold mining industry is emission intensive per tonne of gold, on a value basis emissions intensity is relatively low. Polymetal’s mining operations generate significant quantities of waste that can have environmental impacts. It is a strength that Polymetal invests in dry stacking to reduce leakage of hazardous waste such as cyanide and heavy metals. Furthermore, while two of Polymetal’s plants are already certified as being in full compliance with the International Cyanide Management Code, the other mines with cyanide use are yet to be certified. Investors should be aware that Polymetal can allocate proceeds to projects in non-certified mines which are using cyanide. While these efforts are commendable, it is Polymetal’s responsibility to monitor impacts closely and avoid negative environmental impacts of its projects by following global best practices and implementing the highest available standards.

The company informed us that absolute emissions are expected to grow together with growth of Polymetal’s business and that the company is not able to decrease absolute Group emissions without avoiding expanding operations. While Polymetal has no absolute emissions reduction target, the company has intensity targets and a 7% renewable energy target by 2025 and involves external experts for climate scenario analysis and is taking steps in terms of reporting. Polymetal is following the EBRD’s Environmental and Social Policy, is a signatory to the UN Global Compact and is reporting according to GRI and Metals & Mining Sustainability Accounting (SASB) standards as well as climate risks according to TCFD recommendations.

Based on the overall assessment of the projects that will be financed under this framework, and governance and transparency considerations, Polymetal’s green financing framework receives a **CICERO Medium Green** shading and a governance score of **Good**. In order to further improve the framework, Polymetal could tighten its eligibility criteria for the energy efficiency improvements and implement absolute emissions targets.

SHADES OF GREEN

Based on our review, we rate the Polymetal’s green Financing Framework **CICERO Medium Green**.

Included in the overall shading is an assessment of the governance structure of the green Financing Framework. CICERO Shades of Green finds the governance procedures in Polymetal’s framework to be **Good**.



GREEN BOND and LOAN PRINCIPLES

Based on this review, this Framework is found in alignment with the principles.





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1 Terms and methodology

This note provides CICERO Shades of Green's (CICERO Green) second opinion of the client's framework dated September 2020. This second opinion remains relevant to all green bonds and/or loans issued under this framework for the duration of three years from publication of this second opinion, as long as the framework remains unchanged. Any amendments or updates to the framework require a revised second opinion. CICERO Green encourages the client to make this second opinion publicly available. If any part of the second opinion is quoted, the full report must be made available.

The second opinion is based on a review of the framework and documentation of the client's policies and processes, as well as information gathered during meetings, teleconferences and email correspondence.

Expressing concerns with 'shades of green'

CICERO Green second opinions are graded dark green, medium green or light green, reflecting a broad, qualitative review of the climate and environmental risks and ambitions. The shading methodology aims to provide transparency to investors that seek to understand and act upon potential exposure to climate risks and impacts. Investments in all shades of green projects are necessary in order to successfully implement the ambition of the Paris agreement. The shades are intended to communicate the following:

CICERO Shades of Green



Dark green is allocated to projects and solutions that correspond to the long-term vision of a low carbon and climate resilient future. Fossil-fueled technologies that lock in long-term emissions do not qualify for financing. Ideally, exposure to transitional and physical climate risk is considered or mitigated.



Medium green is allocated to projects and solutions that represent steps towards the long-term vision, but are not quite there yet. Fossil-fueled technologies that lock in long-term emissions do not qualify for financing. Physical and transition climate risks might be considered.



Light green is allocated to projects and solutions that are climate friendly but do not represent or contribute to the long-term vision. These represent necessary and potentially significant short-term GHG emission reductions, but need to be managed to avoid extension of equipment lifetime that can lock-in fossil fuel elements. Projects may be exposed to the physical and transitional climate risk without appropriate strategies in place to protect them.



Brown is allocated to projects and solutions that are in opposition to the long-term vision of a low carbon and climate resilient future.

Examples



Wind energy projects with a strong governance structure that integrates environmental concerns



Bridging technologies such as plug-in hybrid buses



Efficiency investments for fossil fuel technologies where clean alternatives are not available



New infrastructure for coal

Sound governance and transparency processes facilitate delivery of the client's climate and environmental ambitions laid out in the framework. Hence, key governance aspects that can influence the implementation of the green bond are carefully considered and reflected in the overall shading. CICERO Green considers four factors in its review of the client's governance processes: 1) the policies and goals of relevance to the green Financing Framework; 2) the selection process used to identify and approve eligible projects under the framework, 3) the management of proceeds and 4) the reporting on the projects to investors. Based on these factors, we assign an overall governance grade: Fair, Good or Excellent. Please note this is not a substitute for a full evaluation of the governance of the issuing institution, and does not cover, e.g., corruption.



2 Brief description of Polymetal's Green Financing Framework and related policies

Polymetal International plc (together with its subsidiaries - "Polymetal") is an ore extractor and gold and silver producer with more than 12,000 employees. Their portfolio comprises 9 gold and silver mines as well as 2 major development projects across Russia and Kazakhstan. Polymetal is listed on the London Stock exchange since 2011 and a constituent of FTSE 100, FTSE Gold Mines and STOXX 600. In 2019, Polymetal's revenue was derived principally from the sale of gold and silver bullion (48%), copper, gold and silver concentrate (32%) and doré (20%). Polymetal is also involved in a feasibility study on rare earth material mining. Currently, 7 out of Polymetal's 8 mines have open pit mines.

Polymetal's clients are mainly based in Russia, Kazakhstan as well as East Asia and Europe. Major customers are a Russian commercial bank and a Kazakh state owned refinery. All bullions produced are acquired by Russian and international banks for monetary purposes (48% of FY 2019 revenue). Concentrate and doré (52% of FY 2019 revenue) is sold to off-takers who further treat it to produce metal.

Environmental Strategies and Policies

Polymetal has a Carbon Management System in place and aims to continuously improve energy efficiency in its mines, innovate in extraction methods that minimize greenhouse gas (GHG) emissions and engage business partners to enhance GHG transparency. Polymetal has a strategic target to decrease GHG emission intensity by at least 5% by 2023 compared to 2018. In 2019, the carbon intensity amounted to 1.04ktCO₂e/Koz GE compared to 1.21 in 2018, which represents an improvement of 13%. Currently, Polymetal has no absolute emission reduction target. Polymetal's Scope 1 emissions in 2019 amounted to 488ktCO₂e (compared to 480ktCO₂e in 2018), Scope 2 emissions to 636 ktCO₂e (compared to 570ktCO₂e). Scope 1 emissions represented a share of 21% of Polymetal's emissions, while Scope 2 emissions represent 28% and Scope 3 emissions represent 51% (1.1MtCO₂e upstream (independently assured) and 49ktCO₂e downstream). The grid emission factors in Polymetal's business regions are between 325¹ gCO₂/kWh and 962² gCO₂/kWh. Polymetal's emission intensity in 2019 amounts to 75.1tCO₂e per 10kt of ore processed, which represents a reduction of 0.5tCO₂ compared to the previous year. Polymetal has a renewable electricity production capacity of 1.1 MW in 2020. According to Polymetal, plans are underway to install two more solar plants with the capacity of 2.5 MW and 10 MW, respectively. In 2019, less than 3% of Polymetal's energy consumption was based on renewable energy according to the issuer, while the remaining part was based on fossil fuels and purchased electricity. Polymetal is aiming by 2025 to achieve 7% of total energy generation from renewable supply. In 2023, Polymetal expects a share of 0.89% of solar energy consumption. Diesel accounts for almost 50% of total energy consumption and is used for mobile mining equipment, heating and electricity generation.

All of Polymetal's production sites are certified according to ISO 14001. In addition, Polymetal has set environmental targets within its Environmental Management System (EMS) and an energy efficiency programme in line with ISO 50001. In addition, Polymetal has a supplier Code of Conduct in place that outlines environmental expectations incl. penalties for non-compliances with regards to packaging, noise, pollution and emergency

¹ https://www.climate-transparency.org/wp-content/uploads/2019/11/B2G_2019_Russia.pdf

² https://www.ebrd.com/downloads/sector/eccc/Baseline_Study_Russia.pdf



preparedness. In 2019 Polymetal engaged with suppliers to estimate upstream emissions and with off-takers to assess downstream emissions. Based on this data Polymetal is planning to select lower impact suppliers.

According to the company, Polymetal assesses potential increase in GHG emissions starting with the project design and construction stage and estimate transportation and heating emissions. In 2019, Polymetal engaged business partners downstream and upstream the supply chain to estimate the carbon footprint of the product (measured in tons of CO₂e per Koz of gold equivalent).

The company aligns with the recommendations of the Task Force on Climate Related Financial Disclosures (TCFD). According to Polymetal, in 2019, the company assessed climate related risks at all of Polymetal's sites, no serious risks were identified. Risks can in particular be associated with Polymetal's activities in permafrost regions. The company's assessment in 2019 has not yielded serious risk exposures of any of its sites. With regards to transitional risks, Polymetal notes that the Albazino, Komar and Kyzyl sites are heavily dependent on diesel and that Amursk POX is also exposed in terms of pressure oxidation and energy intensive regimes, close to the populated city of Amursk. Polymetal has conducted pilot scenarios modelling for the Albazino mine together with Carbon Trust. The company informed us that they have hired external consultants to conduct scenario analysis for Polymetal.

In 2019, Polymetal launched a Mine Closure Management System for all sites which mandates an approach to every mine closure, including stakeholder engagement. Polymetal informed us that mines could be sold with small residual lifetime, but that mine closure obligations are specified in the permit at the design stage.

The mining industry generates significant quantities of mineral waste, as well as relatively small quantities of non-mineral and hazardous substance waste. By 2023, Polymetal aims to recycle at least 16% of waste generated. Polymetal operates nine tailings dams in Russia and Kazakhstan and each is monitored and inspected daily, with checks on pipelines, pump stations, water levels and dams. Polymetal has stated that any emergency failure at their dams would have no impact on settlements, buildings, structures or facilities where communities or employees may be present. Polymetal has established a Tailings Storage Facility (TSF) Management System and in 2019 Polymetal published its first TSF disclosure report. In 2019, 10% of Polymetal's tailings were stored as dry cake. By 2024, Polymetal aims to have 15% of tailings as dry stacking. According to Polymetal, dry stacking will be done for new mines and upgrades, but not all the existing tailing ponds will upgrade. When the respective mines are closed, tailing reclamation begins. In addition, Polymetal set a target to decrease freshwater use for processing by 11% by 2023 (2018 base year).

Polymetal reports in accordance with the Core GRI Standards, Metals & Mining Sustainability Accounting Standard (SASB Standard) published by the Sustainability Accounting Standards Board (SASB). In addition, Polymetal reports to CDP (formerly the Carbon Disclosure Project) since 2013. In 2016, the European Bank for Reconstruction and Development (EBRD) and Wardell-Armstrong (WAI) completed a detailed review of the social and environmental issues linked to Polymetal's Kyzyl gold project in north-eastern Kazakhstan. Polymetal is following the EBRD's Environmental and Social Policy and is a signatory to the UN Global Compact since 2009. In addition, the Amursk POX and Voro plants have been certified as being in full compliance with the International Cyanide Management Code. Polymetal informed us that the audit of Varvara plant in Kazakhstan has started in 2H 2020. The other mines are planned to be certified in the future. In addition, Polymetal has recently signed a memorandum of understanding for a potential strategic cooperation in underground electric vehicles development.

In 2018 as well as in 2019, Polymetal has received two sustainability-linked loans. The loans' interest rates are tied to Polymetal's sustainability score by an independent agency in one agreement and to specific ESG KPIs achievement in the other agreement.



Use of proceeds

The proceeds raised via green loans will be exclusively used to finance and/or refinance, in whole or in part, the eligible green projects owned by subsidiaries or affiliates of the Polymetal Group (subsidiaries of the parent company in Russia and Kazakhstan, mainly operating and project companies) within the project categories clean transportation, renewable energy, energy efficiency, pollution prevention and control. Polymetal's primary targets are climate change mitigation as well as environmental impact reduction such as reduced waste and emissions. Polymetal expects the majority of proceeds to be used for financing new projects.

Eligible green projects may include capital expenditures, including expenditures related to improvement of eligible green projects, as well as research and development, materials acquisition cost, and acquisitions of assets. Polymetal excludes from financing investments in fossil fuel infrastructure (e.g., fossil fuel efficiency, machinery, heating, generators etc.) as well as investments in new tailing ponds.

According to Polymetal, the main investments will be dry stacking facilities, renewable energy and solar projects, conveyor belts and electric excavators.

Selection

The selection process is a key governance factor to consider in CICERO Green's assessment. CICERO Green typically looks at how climate and environmental considerations are considered when evaluating whether projects can qualify for green finance funding. The broader the project categories, the more importance CICERO Green places on the governance process.

Polymetal will set up a cross-departmental Green Financing Committee with representatives from the corporate finance, the sustainability, operational, energy and environmental, procurement, design, construction departments and on case-by-case basis, with representatives from other business units. The committee will meet at least once a year and decide in consensus. They have the task to review, select, validate and monitor the compliance of projects with Polymetal's existing E&S risks management processes and the framework.

In general, Polymetal has a Safety and Sustainability Committee aimed to assist the Board of Directors in overseeing the Company's overall approach to sustainability, developing and implementing short and long-term policies and standards; it ensures that the Company consistently exhibits and promotes ethical, transparent and responsible behaviour, and engages key stakeholders and communities.

Polymetal has developed a company-wide Risk Management System (RMS) to prevent controversy around its projects. This risk management system takes into account sustainability matters and assessed against tolerance levels and managed Group-wide. The risk management system is externally audited for compliance. Polymetal informed us that the company has had no incidence regarding controversial projects and that projects are normally developed with approval of local population during public hearings.

Management of proceeds

CICERO Green finds the management of proceeds of Polymetal to be in accordance with the Green Bond and Loan Principles. Polymetal has set up a Green Loan register and has put internal systems in place to track the allocation of the Proceeds internally. This allows for comprehensive monitoring of allocated and to be allocated amounts. Polymetal intends to fully allocate the Proceeds within 24 months from the issuance or drawdown date of each Green Loan. Until full allocation, the Green Financing Committee will approve at least annually the amount of net proceeds that has been allocated to Eligible Green Projects.

Net proceeds of Green Loans will be allocated in different ways:



- a) Refinancing of projects that qualify as eligible green projects
- b) Investments into projects under development that qualify as eligible green projects.
- c) Unallocated proceeds: Investments in any form of cash, bank deposit or other form of available current financial assets including refinancing of short-term loans. Polymetal confirmed that unallocated proceeds cannot be invested in fossil fuel related assets.

Reporting

Transparency, reporting, and verification of impacts are key to enable investors to follow the implementation of green finance programs. Procedures for reporting and disclosure of green finance investments are also vital to build confidence that green finance is contributing towards a sustainable and climate-friendly future, both among investors and in society.

Polymetal commits to provide lenders the Green Loan Report (“Green Loan Report”) on an annual basis until full allocation of the proceeds. According to the issuer, the report will be made available on the website. The allocation reporting will provide information on distribution of the green portfolio per category, geographical distribution and the balance of both allocated and unallocated amounts. Allocation will be externally reviewed. Regarding impact reporting, the Green Financing Committee is responsible to identify the proper impact metrics that best describe the environmental benefits and to draft, verify and validate the reporting for the lenders. Impacts will be reported on project level if needed. Polymetal has provided a list of impact indicators per project category. According to the issuer, the baseline for reporting on upgrading operating projects will be 2018. As for the construction of new projects, Polymetal has indicated that they will compare with diesel usage of the same year.

The impact reporting will not be externally reviewed.



3 Assessment of Polymetal’s green Financing Framework and policies


The framework and procedures for Polymetal’s green bond investments are assessed and their strengths and weaknesses are discussed in this section. The strengths of an investment framework with respect to environmental impact are areas where it clearly supports low-carbon projects; weaknesses are typically areas that are unclear or too general. Pitfalls are also raised in this section to note areas where Polymetal should be aware of potential macro-level impacts of investment projects.

Overall shading




Based on the project category shadings detailed below, and consideration of environmental ambitions and governance structure reflected in Polymetal’s green Financing Framework, we rate the framework **CICERO Medium Green**.

Eligible projects under the Polymetal’s green Financing Framework

At the basic level, the selection of eligible project categories is the primary mechanism to ensure that projects deliver environmental benefits. Through selection of project categories with clear environmental benefits, green bonds aim to provide investors with certainty that their investments deliver environmental returns as well as financial returns. The Green Bonds Principles (GBP) state that the “overall environmental profile” of a project should be assessed and that the selection process should be “well defined”.

Category	Eligible project types	Green Shading and some concerns
Clean transportation 	<p>Projects aimed at construction, development, operation, acquisition and maintenance of infrastructure for cleaner vehicles with a lower environmental impact for the Group's fleet</p> <p>Promote energy savings and increases efficiency of energy use</p> <ul style="list-style-type: none"> • Electric vehicles • Low carbon haulage systems and machinery (electricity sourced from the grid network sourcing clean energy) 	<p>Medium Green</p> <p>✓ Polymetal confirmed that no fossil fuel vehicles are eligible, which effectively excludes hybrid mining vehicles according to Polymetal.</p> <p>✓ The main focus of this category are fully electric excavators, LHDs (loaders), trucks and conveyor belts.</p> <p>✓ While low-carbon transportation projects clearly provide climate benefits this category is rated Medium as this constitutes only a part of the solution to a transition to low-carbon mining industry.</p>



<p>Renewable energy</p> 	<p>Projects aimed at increasing the Group production of renewable energy, through acquisitions, construction or maintenance projects</p> <ul style="list-style-type: none"> • Solar energy generation plants (PV) • Wind energy generation plants 	<p>Medium Green</p> <ul style="list-style-type: none"> ✓ According to the issuer, Renewable energy projects will be standalone projects that cannot be connected to the grid due to Russian grid regulations. ✓ While renewable energy deployment clearly provide climate benefits this category is rated Medium Green as it directly supports fossil fuel intensive mining process.
<p>Energy efficiency</p> 	<p>Projects aimed at applying systems or products that grid energy consumption.</p> <ul style="list-style-type: none"> • Projects with the purpose of units sourcing energy from grid 	<p>Light Green</p> <ul style="list-style-type: none"> ✓ Polymetal has not specified any targeted improvement levels ✓ Polymetal confirmed that efficiency improvements are not eligible for fossil fuel equipment as only equipment connected to the fossil fuel intensive grid are eligible (according to Polymetal, the relevant regional grid currently has an emission factor of 325 to 962 gCO₂/kW).
<p>Pollution prevention and control</p> 	<p>Solutions that improves water treatment and water quality</p> <p>Solutions that promote waste prevention and reduction and safer waste management / disposal</p> <p>Projects aimed at soil remediation</p> <ul style="list-style-type: none"> • Water and wastewater treatment and purification plants, networks and appliances • Water treatment aiming to improve water reuse rate, minimize discharge of water pollutants • Dry stacking storages construction • Waste sorting and recycling • Waste reuse 	<p>Medium Green</p> <ul style="list-style-type: none"> ✓ Waste and waste water management includes cyanide, heavy metals and other pollutants that can have significant local impacts if leaked into the environment. ✓ Some of Polymetal’s mines are not yet in compliance with the Cyanide Management Code. Two of Polymetal’s plants are already certified as being in full compliance with the International Cyanide Management Code. However, Polymetal informed us that currently only one project under this category is associated with waste that contains cyanide in a mine which is certified according to the Cyanide Management Code. ✓ Dry stacking is the preferable option compared to tailing ponds when managed responsibly. The issuer informed us that dry stacking storages are isolated which prevents environmental contamination, e.g., by heavy metals. ✓ Dry stacking will receive a large amount of financing under this framework. ✓ Polymetal informed us that no new or extended tailing ponds will be financed. ✓ Polymetal informed us that wastewater treatment facilities are designed as closed systems, production wastewater is recycled and only surface run-off water is discharged after purification. ✓ Dry stacking will be built on new land, or on reclaimed and rehabilitated land from old mine. This could lead to environmental disturbance of land. However, dry stacking requires less land than tailing ponds.



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- ✓ Waste water treatment facilities will be connected to the national grid.
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Table 1. Eligible project categories

Background

According to Nature, “greenhouse gas emissions associated with primary mineral and metal production was equivalent to approximately 10% of the total global energy-related greenhouse gas emissions in 2018”³. While gold mining is emission intensive per tonne of gold compared to other metals (more than 35 ktCO₂ per tonne of gold), on a value basis emissions intensity is relatively low according to a report by the World Gold Council⁴⁵. It is also found that total emission from the gold industry are relatively low compared to other mining industries. At the same time mining products are critical for a transition to a low carbon economy as, e.g., gold is used in electronic products and silver and copper in wind and solar energy components. In 2019, 3,300t of gold were produced globally, 310t were produced in Russia and it is estimated that world reserves are approximately 50,000t with 5,300t in Russia.⁶ In 2019, 7.47% of gold was used in the technology industry while the remaining was mainly used by the jewelry and investment industry as well as by central banks.⁷ In 2018, global demand for silver amounted to 1033.5t with 7.8% used in photovoltaics and 56% used in electronics.⁸ Silver demand in renewable energy technology is expected to increase in the future which also calls for increased recycling rates and material efficiency.⁹

Climate Action Tracker currently lists the Russian Federation as critically insufficient being on a +4°C trajectory if all NDCs were fulfilled.¹⁰ Russia has ratified the Paris Agreement in September 2019. According to the Climate Transparency Initiative, in 2018, 56% of Russia’s emissions was due to energy, 24% due to industries and 9% due to transport.¹¹ Currently, Russia has no plans to phase out coal power. Renewables accounted for 17% of Russia’s power mix (mainly through hydro power). On average, Russia has a grid emission factor of 325gCO₂/kWh.

In 2020, the EU Taxonomy was released in a multi-lateral effort to standardise thresholds and metrics to aid the green transition. The Taxonomy provides signposting for investors and bond issuers to aid in their decision-making and project selection processes.

The EU Taxonomy also considers Do No Significant Harm (DNSH) criteria within five categories (which may or may not always be relevant): climate change adaptation, water, circular economy, pollution and ecosystems. Some examples of these considerations include ensuring at least 80% of non-hazardous construction and demolition waste from buildings are prepared for re-use or recycling, ensuring all water appliances are in the top two classes for water consumption in the EU Water Label, as well as ensuring construction is not situated on protected natural areas.

³ <https://www.nature.com/articles/s41561-020-0531-3?proof=true>May

⁴ <https://www.nsenenergybusiness.com/news/gold-climate-change-net-zero-mining/>

⁵ <https://www.gold.org/goldhub/research/gold-and-climate-change-introduction>

⁶ <https://pubs.usgs.gov/periodicals/mcs2020/mcs2020-gold.pdf>

⁷ <https://www.statista.com/statistics/299609/gold-demand-by-industry-sector-share/>

⁸ <https://www.statista.com/statistics/253345/global-silver-demand-by-purpose/>

⁹ https://link.springer.com/chapter/10.1007/978-3-030-05843-2_11

¹⁰ <https://climateactiontracker.org/countries/russian-federation/>

¹¹ https://www.climate-transparency.org/wp-content/uploads/2019/11/B2G_2019_Russia.pdf



The EU taxonomy currently does not address mining activities, such as dry stacking, hazardous waste treatment and electric mining equipment. However, it states with regards to the manufacturing of low carbon technologies, that

“the main potential significant harm to other environmental objectives from the manufacture of low carbon technologies is associated with:

- *the (potential) use of toxic substances and generation of toxic wastes (both at the manufacturing stage as well as at other stages of the product/equipment lifecycle); and*
- *the potential for polluting emissions to air, water and soil from the manufacturing process.*

Depending on the product/equipment being manufactured, there may, also be issues with respect to the embodied carbon and the demand for certain metals and materials (e.g. rare earth metals) which are in limited supply and may have significant environmental impact issues associated with the mining phase.”

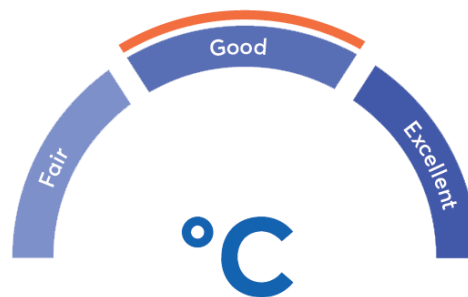
Polymetal’s investments in renewable energy will likely comply with the EU taxonomy. The EU taxonomy does not take into account that renewable energy plants are not connected to the grid.

While, e.g., electric excavators are not defined in the EU taxonomy, Polymetal’s investments in zero-emission vehicles would likely comply with the EU taxonomy. The EU taxonomy does not take into account how the vehicles are charged (e.g., directly through diesel generators) or what they would be used for as only transport of fossil fuels would be excluded.

Governance Assessment

Four aspects are studied when assessing the Polymetal’s governance procedures: 1) the policies and goals of relevance to the green Financing Framework; 2) the selection process used to identify eligible projects under the framework; 3) the management of proceeds; and 4) the reporting on the projects to investors. Based on these aspects, an overall grading is given on governance strength falling into one of three classes: Fair, Good or Excellent. Please note this is not a substitute for a full evaluation of the governance of the issuing institution, and does not cover, e.g., corruption.

Polymetal has a long track record working on sustainability related issues, has Carbon Management System in place and has emission intensity targets in place. However, Polymetal currently has no absolute emission target and has increased absolute emissions since 2016. In addition, the company informed us that absolute emissions are expected to grow together with growth of Polymetal’s business and that the company is not able to decrease absolute emissions on a Group level without avoiding expanding operations. Polymetal reports is taking important steps in terms of reporting, e.g., on climate risks according to TCFD and according to GRI and is a signatory to the UN Global Compact. Polymetal has a Green Financing Committee selecting projects a Safety and Sustainability Committee overseeing the company’s sustainability performance. While Polymetal conducts some lifecycle considerations, it nevertheless does not assess rebound and lock-in risks. The company has a Risk Management System in place to prevent controversial projects. Polymetal has provided a list of impact metrics and will publish the impact reporting on its website. The company will not obtain an external review of the impact reporting. The overall assessment of Polymetal’s governance structure and processes gives it a rating of **Good**.





Strengths

While the environmental impact of gold mining can be significant, it constitutes a clear strength that Polymetal goes beyond Russian regulation regarding low carbon mining solutions and pollution prevention and control and aspires to best-in class globally.

It is a strength that Polymetal is working to reduce the amount of waste going to tailing ponds where environmental impact through leakage of chemicals is particularly high. Using more expensive dry stacking facilities reduces these risks and provides additional environmental benefits regarding safety and pollution control, such as prevention of dam failure, leaching and release as well as reduced water and land use.

It is a strength that Polymetal excludes direct investments in fossil fuel energy generation as well as components using fossil fuel. While Polymetal's overall operations are fossil fuel intensive, Polymetal invests in parts of the value chain where low-carbon solutions exist. Polymetal has recently signed a memorandum of understanding for a potential strategic cooperation in underground electric vehicles development.

It is a strength that Polymetal monitors construction emissions under Scope 1 emissions. In addition, Polymetal conducts life cycle considerations for project planning.

It is a strength that Polymetal is assessing climate risks according to TCFD and that the company has commissioned an external agency to conduct climate scenario analysis.

Weaknesses

Polymetal excludes direct investments into fossil fuel components and efficiency improvements of fossil fuel equipment in current mining practices. However, this framework includes direct investments in electrified supporting infrastructure that support a production process that utilizes fossil carbon sources. Investors should be aware that these investments could lead to significant lock-in or rebound effects as Polymetal without having in place short- or medium-term or long-term absolute emission target yet. In 2019, less than 3% of Polymetal's energy consumption was based on renewable energy, while the remaining part was based on fossil fuels and purchased electricity. Polymetal is aiming by 2025 to achieve 7% of total energy generation from renewable supply. Diesel accounts for almost 50% of total energy consumption and is used for mobile mining equipment, heating and electricity generation. The grid emission factors in Polymetal's business regions are between 325 gCO₂/kWh and 962 gCO₂/kWh.

Pitfalls

Polymetal's operations often depend on power from diesel generators. While it is a strength that Polymetal is expanding to renewable energy power generation, transitioning to electric solutions for Polymetal's mining operations that are connected to the local grids bears the pitfall that the grid emission factors in Polymetal's business regions are between 325 gCO₂/kWh and 962 gCO₂/kWh. Currently, the overall Russian electricity grid is not yet on a viable decarbonization trajectory.

Polymetal currently does not yet systematically map its customers or exclude selling its products toward industries that are not aligned with a low-carbon future. While gold production is fossil fuel intensive itself, the produced gold in turn is not required to be used in products that have a positive climate impact. However, silver is used significantly for clean tech applications. Polymetal informed us that since 2019 the company started to calculate downstream emissions and plans to select customers.



Polymetal can invest in settling ponds as a part of technology for water purification to redirect water back to the process when needed instead of withdrawal fresh water. This comes with some environmental risks through water leakage. While Polymetal will not invest in new tailing ponds under the framework, investments can be associated with expanding Polymetal's mining business through expansion of existing mines and developing new mines. While Polymetal informed us that the company does not operate in areas with biodiversity, this nevertheless can lead to impacts on biodiversity and disturbance of land. According to Polymetal since the last relocation of 50 households in 2015 further relocations of towns/settlements are currently not planned and the company is working in very remote areas with almost no population.

While cyanide is not used in all of Polymetal's mines, local pollution remains an inherent pitfall to gold mining, especially when cyanide is used. While two of Polymetal's plants are already certified as being in full compliance with the International Cyanide Management Code, the other mines with cyanide use are planned to be certified in the future. It is Polymetal's responsibility to adhere to international best practices and to ensure "Do-no-significant-harm". Investors should be aware that Polymetal can allocate proceeds to, e.g., renewable energy or efficiency projects in non-certified mines using cyanide.

Ore from open pits and underground mines is transported to the processing facilities by trucks and final products (bullions, concentrate) are shipped by trains, ships, trucks or aircraft depending on the type of product and producer/buyer location. While Polymetal is actively involved in reducing emissions from transport, CICERO Green encourages Polymetal to continue exploring low-carbon transportation solutions for the ore and the products.



Appendix 1: Referenced Documents List

Document Number	Document Name	Description
1	Polymetal's Green Financing Framework	
2	Carbon Management Policy	Supporting policy for Polymetal's Environmental Policy
3	Energy Policy, May 2018	Polymetal's Energy Policy
4	Environmental Policy, March 2020	Polymetal's Environmental Policy
5	Code of Conduct, March 2018	Polymetal's Code of Conduct
6	Sustainability Report 2019	Polymetal's Sustainability Report 2019
7	Impact Reporting	Document provided by Polymetal listing impact metrics and a description of the reporting indicators per project category
8	Green Project Register	Register listing Polymetal's planned green projects



Appendix 2: About CICERO Shades of Green

CICERO Green is a subsidiary of the climate research institute CICERO. CICERO is Norway's foremost institute for interdisciplinary climate research. We deliver new insight that helps solve the climate challenge and strengthen international cooperation. CICERO has garnered attention for its work on the effects of manmade emissions on the climate and has played an active role in the UN's IPCC since 1995. CICERO staff provide quality control and methodological development for CICERO Green.

CICERO Green provides second opinions on institutions' frameworks and guidance for assessing and selecting eligible projects for green bond investments. CICERO Green is internationally recognized as a leading provider of independent reviews of green bonds, since the market's inception in 2008. CICERO Green is independent of the entity issuing the bond, its directors, senior management and advisers, and is remunerated in a way that prevents any conflicts of interests arising as a result of the fee structure. CICERO Green operates independently from the financial sector and other stakeholders to preserve the unbiased nature and high quality of second opinions.

We work with both international and domestic issuers, drawing on the global expertise of the Expert Network on Second Opinions (ENSO). Led by CICERO Green, ENSO contributes expertise to the second opinions, and is comprised of a network of trusted, independent research institutions and reputable experts on climate change and other environmental issues, including the Basque Center for Climate Change (BC3), the Stockholm Environment Institute, the Institute of Energy, Environment and Economy at Tsinghua University and the International Institute for Sustainable Development (IISD).

