Eramet - Climate Change 2020

C0. Introduction

C0.1

(C0.1) Give a general description and introduction to your organization.

Eramet is one of the world's leading producers of :
● manganese and nickel, used to improve the properties of steels, mineral sands (titanium dioxide and zircon);

● parts and semi-finished products in alloys and high-performance special steels used by industries such as aerospace, power generation, and tooling.

Eramet is also developing activities with strong growth potential, such as lithium mining and recycling, which will play a key role in the energy transition and mobility of the future.

The Group employed in 2018 around 12,700 people in 20 countries and generated sales of €3.8 billion.

C0.2

(C0.2) State the start and end date of the year for which you are reporting data.

	Start date	End date	Indicate if you are providing emissions data for past reporting years	Select the number of past reporting years you will be providing emissions data for
Reporting year	January 1 2019	December 31 2019	No	<Not Applicable>

C0.3

(C0.3) Select the countries/areas for which you will be supplying data.
China
France
Gabon
India
New Caledonia
Norway
Senegal
Sweden
United Kingdom of Great Britain and Northern Ireland
United States of America

C0.4

(C0.4) Select the currency used for all financial information disclosed throughout your response.
EUR

C0.5

(C0.5) Select the option that describes the reporting boundary for which climate-related impacts on your business are being reported. Note that this option should align with your chosen approach for consolidating your GHG inventory.
Operational control

C-MM0.7

(C-MM0.7) Which part of the metals and mining value chain does your organization operate in?

Row 1

Mining

Nickel

Other non-ferrous metal mining, please specify (Manganese, Mineral sands)

Processing metals

Nickel

Other ferrous metals, please specify (high performance steel, high purity pig iron)

Other non-ferrous metals, please specify (Manganese, Titanium dioxyde, Superalloys, Titanium alloys, Aluminium alloys)

C1. Governance

C1.1

(C1.1) Is there board-level oversight of climate-related issues within your organization?

Yes

C1.1a

(C1.1a) Identify the position(s) (do not include any names) of the individual(s) on the board with responsibility for climate-related issues.

Position of individual(s)	Please explain
Other C-Suite Officer	The Eramet Group takes the climate issue to the highest level of management. In 2018, this commitment was reflected in the establishment of an Energy and Climate Department, reporting to the Executive Vice-President Strategy, Innovation and Investor Relations, a member of the Group's Executive Committee.
Other C-Suite Officer	Director of Communications and Sustainable Development, a member of the Group's Executive Committee, is in charge of climate related issues.
Other, please specify (Chairperson of the strategy and CSR Committee, member of the board)	Member of the board
Other, please specify (8 Directors, members of the Strategy and CSR Committee)	Member of the board

C1.1b

(C1.1b) Provide further details on the board's oversight of climate-related issues.

Frequency with which climate-related issues are a scheduled agenda item	Governance mechanisms into which climate-related issues are integrated	Scope of board-level oversight	Please explain
Scheduled – some meetings	Reviewing and guiding strategy Reviewing and guiding major plans of action Reviewing and guiding risk management policies Reviewing and guiding business plans Setting performance objectives Monitoring and overseeing progress against goals and targets for addressing climate-related issues	<Not Applicable>	The topic of Energy and Climate are reviewed during some full board sessions and also frequently at Executive Committee level
Scheduled – all meetings	Reviewing and guiding strategy Reviewing and guiding major plans of action Reviewing and guiding risk management policies Reviewing and guiding business plans Setting performance objectives Monitoring and overseeing progress against goals and targets for addressing climate-related issues	<Not Applicable>	The topics of Energy and Climate are periodically reviewed during the Executive Committee's Business Review and during the Strategy and CSR Committee by the relevant Board members.

C1.2

(C1.2) Provide the highest management-level position(s) or committee(s) with responsibility for climate-related issues.

Name of the position(s) and/or committee(s)	Reporting line	Responsibility	Coverage of responsibility	Frequency of reporting to the board on climate-related issues
Other, please specify (Chairperson of the strategy and CSR Committee, member of the board)	<Not Applicable>	Both assessing and managing climate-related risks and opportunities	<Not Applicable>	Quarterly
Other, please specify (8 Directors, members of the Strategy and CSR Committee)	<Not Applicable>	Both assessing and managing climate-related risks and opportunities	<Not Applicable>	Quarterly
Other, please specify (Director of Communication and Sustainable Development, , a member of the Group's Executive Committee)	<Not Applicable>	Both assessing and managing climate-related risks and opportunities	<Not Applicable>	More frequently than quarterly
Chief Executive Officer (CEO)	<Not Applicable>	Managing climate-related risks and opportunities	<Not Applicable>	More frequently than quarterly
Other, please specify (Executive Vice-President Strategy, Innovation and Investor Relations, a member of the Group's Executive Committee)	<Not Applicable>	Both assessing and managing climate-related risks and opportunities	<Not Applicable>	More frequently than quarterly

C1.2a

(C1.2a) Describe where in the organizational structure this/these position(s) and/or committees lie, what their associated responsibilities are, and how climate-related issues are monitored (do not include the names of individuals).

In order to reinforce and improve the reliability of the operational deployment of the Energy and Climate strategy, the Group has decided to establish an efficient method of operation between the sites and the Corporate functions. Several types of interlocutors have been defined:

- The Strategy and CSR Committee by the relevant Board members, review the topic of Energy and Climate
- The Executive Vice-President Strategy, Innovation and Investor Relations, a member of the Group's Executive Committee
- The Energy and Climate Director, who reports to the Executive Vice-President Strategy
- The Group coordinator, whose main tasks are implementing the initiative to reduce the energy footprint, the methodological contribution (the Group coordinator is an AFNOR-certified ISO 50001 auditor and a member of the ISO 50001 expert committee), expertise on several of the Group's businesses, and regulatory and technological monitoring;
- Site energy correspondents, who are representatives of site management within the meaning of ISO 50001 and whose missions are to locally support the process of continuous improvement around energy, in the aim of reducing the energy footprint of the scope in question
- Site management, whose main role is to manage an energy management system based on the principles of the ISO 50001 standard and to allocate resources that are suited to the challenges of each site, Division management is also involved to support site management.

C1.3

(C1.3) Do you provide incentives for the management of climate-related issues, including the attainment of targets?

	Provide incentives for the management of climate-related issues	Comment
Row 1	Yes	

C1.3a

(C1.3a) Provide further details on the incentives provided for the management of climate-related issues (do not include the names of individuals).

Entitled to incentive	Type of incentive	Activity inventivized	Comment
Other C-Suite Officer	Monetary reward	Please select	Approximately 10% of the Executive Vice-President Strategy, Innovation and Investor Relations bonus is linked to climate related targets. He is a member of the Group's Executive Committee.
Other, please specify (Energy and Climate Director)	Monetary reward	Please select	20% of the Energy and Climate Director Bonus is linked to climate related targets.

C2. Risks and opportunities

C2.1

(C2.1) Does your organization have a process for identifying, assessing, and responding to climate-related risks and opportunities?

Yes

C2.1a

(C2.1a) How does your organization define short-, medium- and long-term time horizons?

	From (years)	To (years)	Comment
Short-term	0	2	Given the nature of our main activities (mining and metal processing), we consider horizons to be "short term" if below 2 years, "medium term" if between 2 and 8 years, and "long term" when beyond 8 years.
Medium-term	2	8	Given the nature of our main activities (mining and metal processing), we consider horizons to be "short term" if below 2 years, "medium term" if between 2 and 8 years, and "long term" when beyond 8 years.
Long-term	8	15	Given the nature of our main activities (mining and metal processing), we consider horizons to be "short term" if below 2 years, "medium term" if between 2 and 8 years, and "long term" when beyond 8 years.

C2.1b

(C2.1b) How does your organization define substantive financial or strategic impact on your business?

A substantive financial or strategic impact on our business is regarded through multiple angles and is considered in the group risk analysis.
From a financial perspective, we calculate a financial reporting materiality threshold. It is based on a percentage of our revenues, our net income and our equity and calculated each year with our financial auditors. A climate-related significant risk such as the physical impacts of climate change have been added into the group risk analysis
From a business perspective, a bad reputational event can also be regarded as having a substantive impact on our business. At the Group level, climate change will lead to higher taxes on energy, and greater difficulty of access to financing for certain investments. At present, it is difficult to assess the consequences more accurately.
The main risk factors to which the Group is exposed due to its business model and the activities it performs, are identified in the Group's 2019 risk map, which was presented to the Audit, Risks and Ethics Committee in December 2019 and is available on the Group 2019 Universal Registered Document (see Eramet Group website).

C2.2

(C2.2) Describe your process(es) for identifying, assessing and responding to climate-related risks and opportunities.

Value chain stage(s) covered
Direct operations

Risk management process
A specific climate-related risk management process

Frequency of assessment
Please select

Time horizon(s) covered
Short-term
Medium-term

Description of process
A global risk mapping is performed at Eramet group level every year. Today, a dedicated Climate related risk section has been added. We review the transition risks for each branch and each category of product. We also review the physical risks for each plant in all the countries where Eramet has activities. We also follow the emerging regulation especially when related to carbon as our activities are carbon intensive.

Value chain stage(s) covered
Direct operations
Upstream
Downstream

Risk management process
A specific climate-related risk management process

Frequency of assessment
Annually

Time horizon(s) covered
Short-term
Medium-term
Long-term

Description of process
Eramets performs a yearly review on climate issues with its business managers in order to identify potential climate related risks that arise from day to day activities. For instance, as Eramet deals with extreme weathers in New Caledonia, we had to undertand the potential impacts of more severe or more often cyclones and what measures should be taken to adapt. We are currently working with our insurerance companies to better estimate the impact of potentiel future extreme weathers on our activities. Our infrastructures are hurrican proof and we modified our ore supply to make sure the continuity of operation of our furnaces is granted.

Value chain stage(s) covered
Direct operations

Risk management process
A specific climate-related risk management process

Frequency of assessment
Annually

Time horizon(s) covered
Short-term

Medium-term
Long-term

Description of process
European and Norwegian plants, representing approximately 25% of the Group's scopes 1 & 2 emissions, are subject to the European Union Emissions Trading Scheme (EU ETS), which entails increased financial risk due to the uncertainties inherent in the long-term quotas market, as well as uncertainties related to legal mechanisms that may evolve and be adopted in the future. Eramets has an internal process to closely monitor the evolution of the carbon market. The Group is preparing for the potential emergence of higher carbon tax by experimenting with an internal price for its investment projects, and for the evaluation of its strategic options, on the basis of an internal price of €30 per tonne of CO2. The provision is also applicable to the investment projects developed in the geographic areas that do not have the incentive of a carbon quota system. The consequence of this choice is to prioritise lower-carbon emitting technological solutions and contribute to improving the awareness of climate change with all Eramet employees.
For instance Eramet has implemented the internal price of CO2 for a solar farm + battery project (12MW) in Senegal to produce renewable electricity instead of our fuel oil fired power plant. The profitability of the project is improved due to internal carbon price

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Value chain stage(s) covered
Downstream

Risk management process
Integrated into multi-disciplinary company-wide risk management process

Frequency of assessment
Annually

Time horizon(s) covered
Short-term
Medium-term

Description of process
Eramets performs a yearly review on climate issues with its business managers in order to identify potential climate opportunities that arise from day to day activities. This is especially the case when identifiying our customers growing demand for low carbon products. Eramet needs to make sure its products may answer to this new emerging concern. Our carbon intensity target allow us to work toward product with lower carbon content.
Eramet's manganese activity through Norwegian, French and Gabonese (C2M) plants has one of the lowest emission factors in the entire manganese industry, around 1.04 tCO2/t, where the sector average is higher than 4.80 tCO2/t according to the MnI (Manganese institute).

Value chain stage(s) covered
Downstream

Risk management process
A specific climate-related risk management process

Frequency of assessment
Every three years or more

Time horizon(s) covered
Medium-term
Long-term

Description of process
Scenario-based analyses is a powerful tool for managing this chapter of the strategic reflection. It entails a forward- looking review, projecting Eramet's current activity onto various possible worlds, in order to assess the consequences on business. This approach is efficient for building a comprehensive model of the complex changes and the interactions between them, which is helpful for defining the transformations caused by climate change.
The Group conducted this analysis first in 2018 in collaboration with a domain-specific expert consultant. The adopted approach ("by physical flows") is founded, for each scenario, on the physical reality of the activity, which the Group ensures is compatible with the maximum limit of 2°C increase in temperature.

C2.2a

(C2.2a) Which risk types are considered in your organization's climate-related risk assessments?

	Relevance & inclusion	Please explain
Current regulation	Relevant, always included	In 2019, nearly half of the operational entities reported that they could be affected by the consequences of climate change in the very long term. Most of them have already started considering how to limit the impact on their business. European and Norwegian plants, representing approximately 25% of the Group's scopes 1 & 2 emissions, are subject to the European Union Emissions Trading Scheme (EU ETS). At the Group level, climate change will lead to higher taxes on energy, and greater difficulty of access to financing for certain investments. At present, it is difficult to assess the consequences more accurately.
Emerging regulation	Relevant, always included	There is currently no globally applicable carbon market or price, only fragmented and uncoordinated regional systems. The Group is preparing for the potential emergence of such a market by experimenting with an internal price for its investment projects, the evaluation of its strategic options, on the basis of 30 EUR per tonne of CO2 (EUA price was very close to 30 € /ton during summer 2019). This value reflects a belief that markets are moving towards a long-term price that is significantly higher than the European regional spot price as at the end of 2019. The consequence of this choice, throughout the entire Group and independently of the regions with an established carbon market and price, is a shift towards technological solutions that emit less carbon. In addition, the implementation of this policy of applying an internal Group carbon price helps to raise awareness of the climate challenge among all Eramet employees.
Technology	Relevant, always included	Transition risk arises from a variety of technological and market responses to the challenges posed by climate change and the transition to a lower carbon economy; these are often interconnected with the policy and regulatory risks discussed separately, with more ambitious emissions reduction targets or GHG regulations likely to accelerate the adoption of lower emissions technologies. The substitution of existing technologies with lower emissions options, particularly in the electricity and transport sectors, has the potential to reduce demand for our fossil fuel products. The development of low emissions technologies also presents opportunity for ERAMET. Our metal alloys, products have application in a variety of low emissions products in energy generation and transport, for example electric vehicles, that are likely to see tremendous growth driven by technology developments. Likewise, lithium and nickel are a key raw materials for batteries, with battery producers expected to match electric vehicle growth rates. Carbon Capture and Storage (CCS) is another key technology that offers future opportunities for ERAMET as it has the potential to play a pivotal role in decarbonizing industrial processes such as Manganese and Alloys production . Technology developments also have the potential to impact our operations, with the potential requirement for increased capital expenditure or investment in research and development into low emissions technologies. The deployment of low emissions technologies at our operations also presents opportunities to reduce costs and improve productivity. For example, deploying electric vehicles at our sites has the potential to lower operating costs, as well as to reduce worker exposure to diesel particulate matter.
Legal	Relevant, always included	Non-physical risks are related to various political, legal, technological and commercial issues affected by the challenges of climate change and the transition to a less carbon-intensive economy. For example, to avoid communication related litigation risks, we need to demonstrate how climate change has been taken into account in our activities.
Market	Relevant, always included	Eramet aims to take into account the impacts of climate change in its strategic process. The Group recognises that the world could react in different ways to combat climate change. Two scenarios modelling a transition to a low-carbon society, compatible with the 2°C target of the Paris Agreement, were selected: • The IEA 2°C scenario with CO2 capture/storage (CCS — Carbon Capture Storage) as a benchmark; • A variant of this first scenario, more cautious on the hypotheses of an improvement in energy efficiency and of CCS deployment kinetics. In 2018, a business impact analysis was conducted to quantify the change in demand for metals needed for the energy transition. These scenarios highlighted, for example, the criticality of certain metals produced by the Group and necessary for the energy transition, which helped to guide the Group's strategy, namely lithium and nickel. The risk is to not having secured the metal sources to meet the growing demand.
Reputation	Relevant, always included	Producing critical metals needed for energy transition is a source of pride for employees, as well as a significantly positive branding for the company. Frequent publications are released on the market for such purpose. There is a risk of association of Eramet's high carbon-emission energy-intensive activities with climate change. We have performed a benchmark of the carbon content of our products to demonstrate our efforts on this topic.
Acute physical	Relevant, always included	Risks related to the physical impacts of climate change include those related to extreme weather events, such as more severe cyclones at ours mines in New Caledonia. Specific questions are addressed to the sites through the EraGreen environmental reporting tool on their risk assessment and the adaptation measures envisaged.
Chronic physical	Relevant, always included	Risks related to the physical impacts of climate change include those related long-term changes in climate patterns (rising sea levels, water stress, fire, etc.). Eramet is conscious of the particularly close horizon of these phenomena, some of which are already visible. The Group has decided to consequently adapt its risk analysis to explicitly include the direct impacts of climate modifications on its activity as from 2020. Specific questions are addressed to the sites through the EraGreen environmental reporting tool on their risk assessment and the adaptation measures envisaged. In 2019, more than half of the sites reported that they could be affected by the consequences of climate change in the very long term. Most of them have already begun considering how to limit the impact on their business.

C2.3

(C2.3) Have you identified any inherent climate-related risks with the potential to have a substantive financial or strategic impact on your business?

Yes

C2.3a

(C2.3a) Provide details of risks identified with the potential to have a substantive financial or strategic impact on your business.

Identifier

Risk 1

Where in the value chain does the risk driver occur?

Direct operations

Risk type & Primary climate-related risk driver

Acute physical	Increased severity and frequency of extreme weather events such as cyclones and floods

Primary potential financial impact

Decreased revenues due to reduced production capacity

Climate risk type mapped to traditional financial services industry risk classification

<Not Applicable>

Company-specific description

Increased likelihood of greater intensity and more frequent storm systems including tornados, hurricanes and cyclones. This is specifically the case in New Caledonia, a region with already heavy rainfall, where are located most of our nickel mines. Extreme weather could affect production at our mining activities : when a storm is announced, we reduce or stop our open pit nickel ore mining activities (located in Thio, Kouaou, Népoui-Kopéto and Tiébaghi and Poum) and in our pyro metallurgical plant at Doniambo, we also reduce the level of activity of the furnaces. To sum up extreme weather may materially and adversely affect the financial performance of our assets.

Time horizon
Medium-term

Likelihood
Likely

Magnitude of impact
High

Are you able to provide a potential financial impact figure?
Yes, a single figure estimate

Potential financial impact figure (currency)
30000000

Potential financial impact figure – minimum (currency)
<Not Applicable>

Potential financial impact figure – maximum (currency)
<Not Applicable>

Explanation of financial impact figure
We estimate that the increased severity and frequency of cyclones may impact around 10% of our mining production in New Caledonia, that stands for approximately 30 M€ of EBITDA as it affects at first instance the ore business.

Cost of response to risk
13000000

Description of response and explanation of cost calculation
A process is in place in order to mitigate the impact of cyclones : the power of the furnaces of the pyro metallurgical plant (in Doniambo, New Caledonia) is minimized when a cyclone approaches and a section of the oil-fired power plant supplying the furnaces is isolated. To ensure the continuity of the plant we have increased the stock of safety fuel oil (25kt) and also increased the nickel ore stockpile (150 kt) to ensure continuity of furnace load.
The cost of response to risk correspond to the total value of the additionnal fuel oil and ore stock (based on its market value) :
fuel oil stock : 25kt * 300$/mt 0,89 EUR/USD = 6,7 M€
ore stock : 150 kt * 5000 XPF/mt * 0,0083 EUR/ xpf = 6,2 M€,
equals a total of 13 M€

Comment

Identifier
Risk 2

Where in the value chain does the risk driver occur?
Direct operations

Risk type & Primary climate-related risk driver

Market	Changing customer behavior

Primary potential financial impact
Decreased revenues due to reduced demand for products and services

Climate risk type mapped to traditional financial services industry risk classification
<Not Applicable>

Company-specific description
75% of our "High performance Alloys" division is currently dedicated to the Aerospace industry. Along with the growing concern of the world population, as well as the long term consequences of the pandemic, the forecasted growth of the airline industry may be strongly reduced ("flygskam" or "flight shame" effect). Already before the pandemic, and according to a 2019 UBS study (Consumers' climate awareness on the rise ; assessing the impact on traffic and planes demand) : in 2018, 21% of users have already reduced their air travel for environmental reasons and the growth forecasted for air transport could be halved. Thus, aircraft manufacturers may have less orders and severely impact our "High performance Alloys" division revenues.

Time horizon
Medium-term

Likelihood
Likely

Magnitude of impact
Medium

Are you able to provide a potential financial impact figure?
Yes, an estimated range

Potential financial impact figure (currency)
<Not Applicable>

Potential financial impact figure – minimum (currency)
49000000

Potential financial impact figure – maximum (currency)
244000000

Explanation of financial impact figure
By estimating that the aerospace market (mostly aircraft manufacturers) would be reduce between 10% and 40%, that our "High performance Alloys" division revenues are approx. 75% dedicated to the aerospace sector and that the current turnover is aroud 650 €M, we estimate an potentia loss from (10% * 75% * 650 M€) 49 €M to (40% * 75% * 650 M€) 244 €M (figures have been rounded to the closest €M).

Cost of response to risk
6000000

Description of response and explanation of cost calculation
We plan to redirect and adapt our production of high performance alloy to other markets. The cost is calculated based on the R&D and marketing budget required to expand our market to other divisions.

Comment

Identifier
Risk 3

Where in the value chain does the risk driver occur?
Direct operations

Risk type & Primary climate-related risk driver

Emerging regulation	Carbon pricing mechanisms

Primary potential financial impact
Increased direct costs

Climate risk type mapped to traditional financial services industry risk classification
<Not Applicable>

Company-specific description
The increasing scope and level of carbon taxation may affect the cost of our products from Norwegian and French plants subject to the ETS. In Europe, the price of CO2 allowances has increased from 5 €/Mt in 2018 to 25 €/Mt in 2019. This price increase is combined with a decrease in the allocation of free allowances (new regulatory phase IV 2021-2030). In addition, a new carbon tax was introduced in 2019 in South Africa, where we buy manganese ore, and in Argentina, where we have a lithium mine project.

Time horizon
Medium-term

Likelihood
More likely than not

Magnitude of impact
Medium

Are you able to provide a potential financial impact figure?
Yes, an estimated range

Potential financial impact figure (currency)
<Not Applicable>

Potential financial impact figure – minimum (currency)
8000000

Potential financial impact figure – maximum (currency)
12000000

Explanation of financial impact figure
The estimation is based on the projection in 2030 of CO2 emissions and free allocation of allowances for Norwegian and French plants subject to the ETS and with a CO2 price of 30 €/MT (internal CO2 price). The additional cost compared to today is estimated between 8 M€ and 12 M€. Eramet does not disclose its free allocation allowances figures.

Cost of response to risk
1000000

Description of response and explanation of cost calculation
We have a 2023 CO2 emission reduction target and we are working on a longer-term ambition to reduce our CO2 emissions. We use an internal CO2 price to direct our investments towards less carbonated solutions. We are starting to integrate life cycle analyses in the upstream phase of our projects.
The above figure only represents the cost of:
- the ISO50001 2019 certification (action with short-term impact) related to our CO2 emission reduction target (through energy consumption reduction) (150-250 K€)
- and the annual R&D budget on decarbonation topics (750 K€ to 850 K€).

In addition, we are contributing to the development of renewable energy sources and in 2019 we signed a wind-generated APP for our Norwegian plants. Since 2019, in New Caledonia, we have been purchasing excess renewable energy from Enercal to replace electricity generated by our fuel oil plant.

Comment

C2.4

(C2.4) Have you identified any climate-related opportunities with the potential to have a substantive financial or strategic impact on your business?
Yes

C2.4a

(C2.4a) Provide details of opportunities identified with the potential to have a substantive financial or strategic impact on your business.

Identifier
Opp1

Where in the value chain does the opportunity occur?
Downstream

Opportunity type
Markets

Primary climate-related opportunity driver
Access to new markets

Primary potential financial impact
Increased revenues resulting from increased demand for products and services

Company-specific description
CENTENARIO PROJECT: ERAMET LITHIUM PROJECT LOCATED IN ARGENTINA

Eramet has defined part of its development strategy on the metals involved in the transition to a climate neutral economy, mainly lithium, nickel salts and cobalt salts. The development of batteries will lead to a very strong growth in demand for certain critical metals. For instance, the demand for lithium is expected to increase 3-fold by 2025, for pure nickel salts twofold and for cobalt twofold.

It is clear that securing access to critical metal resources will be a key challenge for all european players involved in the battery manufacturing supply chain. For Eramet, access to these natural resources is a structural competitive advantage. Eramet is the only European player to have secured significant resources of critical metals in this fast-growing market and has positioning itself as a key supplier, particularly via the Eramet deposit in Argentina. In the current context of the coronavirus pandemic, and given the many uncertainties currently weighing on the world economy and our markets, we have decided to mothball the construction of our lithium production plant in Argentina.

Time horizon
Short-term

Likelihood
Very likely

Magnitude of impact
High

Are you able to provide a potential financial impact figure?
Yes, an estimated range

Potential financial impact figure (currency)
<Not Applicable>

Potential financial impact figure – minimum (currency)
100000000

Potential financial impact figure – maximum (currency)
200000000

Explanation of financial impact figure
According to the business plan of the project, the expected EBITDA is in the range of 100 M€ to 200 M€ additional. Additional EBITDA varies according to metal pricedeck. Target is to produce in a first stage 24 000 tons/year of lithium.

Cost to realize opportunity
500000000

Strategy to realize opportunity and explanation of cost calculation
the CAPEX of the project was estimated in 2019 at 500 M€. After obtaining the concession and mining rights in 2014, the exploitation license was granted in 2019 following the approval of the Environmental and Societal Impact Study. The extraction process developed by Eramet (specific patent) achieves a yield of 80% with a treatment time of a few days. In comparison, the conventional process, by evaporation, offers a yield of less than 50% in eighteen months. All efforts have also been made to minimize in particular the consumption of fresh water from the process, by maximizing the recycling rate of the water, which now reaches more than 60%.

Comment
In the current context of the Coronavirus pandemic and considering the many uncertainties that currently weigh on the global economy and our markets, we have decided not to engage the construction of our lithium production plant in Argentina. Since the discovery of this world-class deposit to the success of the pilot plant, our teams in Argentina and in France did remarkable work, being actively supported by authorities and local communities, and the project was fully in line with expectations. This ore deposit, which is one of the most competitive in the lithium industry with the process developed by Eramet teams, remains a high-potential asset in our portfolio. All measures will be taken, in particular towards local communities and suppliers, in order to allow a followup and a restart in the best conditions when it will be possible.

Identifier
Opp2

Where in the value chain does the opportunity occur?
Upstream

Opportunity type
Resource efficiency

Primary climate-related opportunity driver
Use of recycling

Primary potential financial impact
Increased revenues resulting from increased demand for products and services

Company-specific description
LI-ION BATTERY RECYCLING PROJECT : RELIEVE PROJECT

Securing access to critical metal resources will be a key challenge for all european players involved in the battery manufacturing supply chain. It can be either from primary

raw material or through secondary materials originating from li-ion battery recycling.

Eramet's strategy is to be able to deliver these critial materials from primary sources as well as from recycled li-ion batteries.

It is the purpose of the ReLieVe project (which stands for Recycling of Li-ion batteries for Electric Vehicles), which is a collaborative research and innovation project whose goal is to develop an innovative process for recycling lithium-ion batteries used in electric vehicles. The idea is also to produce these new batteries in Europe and to build an industrial sector integrated from end to end—from the collection and dismantlement of the batteries at the end of their useful life, to the recycling of their components, to the production of new electrode materials.

ReLieVe is developing a large-scale version of an innovative, "closed-loop" process for recycling lithium-ion batteries. In contrast to more conventional processes, this one will recycle metals while retaining their physical and chemical qualities, so that they may be re-used in the design of a new lithium-ion battery cathod.

From an environmental perspective, the challenge is two-fold: first, to develop a process that has the smallest possible environmental impact—and carbon impact, in particular—and second, to maximize the number of lithium-ion components that can be recycled.

Time horizon
Long-term

Likelihood
About as likely as not

Magnitude of impact
Medium-low

Are you able to provide a potential financial impact figure?
Yes, an estimated range

Potential financial impact figure (currency)
<Not Applicable>

Potential financial impact figure – minimum (currency)
40000000

Potential financial impact figure – maximum (currency)
200000000

Explanation of financial impact figure
We are at the very early stage of the project, with laboratory test and R&D ongoing. Assessing financial impact of such activity would be done precisely in the next step of the project.

The estimate provided is thus very preliminary by nature. It takes into account:
- The long time-to-market of such project (~ 10 years) which is related to the long life-time of batteries placed on the market. Such batteries can only be recovered and recycled after their normal operational life time. Therefore the recycling market will only pick-up in 5 to 10 years time.
- Assumptions made on metal prices for Lithium, Nickel, Cobalt, which is very difficult to firm-up for a potential start of operations in 5 to 10 years time; (Ni at ~7 $/lb and Co at ~ 20 $/lb).
- An average plant capacity corresponding to a market share of 10% to 20% of the European li-ion battery recycling market by 2030 (the size of the plant could be between 10 kt/year and 50 kt/year).
- Assumptions mades on metal recoveries, which are complicated to firm-up at this early stage of the R&D of the processes involved, typically in the range of 80% to 95% depending on metals and process choices.

Cost to realize opportunity
4700000

Strategy to realize opportunity and explanation of cost calculation
ReLieVe began in January 2020 and will conclude in December 2021. With a budget of 4.7 million euros, the project was spearheaded by a consortium of five partners, including three industry players that collectively cover the entire battery value chain. This makes for an efficient and integrated approach, as each company is a leader in its respective industry and ideally positioned along this value chain:
SUEZ, for the collection and dismantlement of the batteries at the end of their useful life
Eramet, for the development of the recycling process
BASF, for the production of the active cathode materials
The project also enjoys the support of research teams from Chimie ParisTech and the Norwegian University of Science and Technology.
With such budget, the project will be able by end 2021 to deliver a scoping study and a preferred/optimized recycling process.

Comment
Further feasiblity studies and construction costs would be needed after this phase to fully realized the opportunity. The level of investment required to implement such studies and construction capex for such plant would be ranging from 50 m€ to 100 m€ depending on plant size, location and final process decisions. The 4 700 000 € indicated above is for R&D only.

Identifier
Opp3

Where in the value chain does the opportunity occur?
Downstream

Opportunity type
Markets

Primary climate-related opportunity driver
Access to new markets

Primary potential financial impact
Increased revenues resulting from increased demand for products and services

Company-specific description
MnO PROJECT : Production of manganese ore (MnO) addressing various markets including the battery market

Eramet has defined part of its development strategy on the metals involved in the transition to a climate neutral economy, mainly lithium, nickel salts and cobalt salts. The development of batteries will lead to a very strong growth in demand for certain critical metals. For instance, the demand for lithium is expected to increase 3-fold by 2025, for pure nickel salts twofold and for cobalt twofold.

It is clear that securing access to critical metal resources will be a key challenge for all european players involved in the battery manufacturing supply chain. For Eramet, access to these natural resources is a structural competitive advantage. Eramet is the only European player to have secured significant resources of critical metals in this fast-growing market, particularly via its affiliate COMILOG located in Gabon, a leading player in manganese ore production and transformation.

The MnO project would use existing facilities in Gabon from COMILOG. Such plant would be adapted to be able to produce approximately ~ 20 kt MnO per year, adressing various market including the growing battery market.

Time horizon
Medium-term

Likelihood
About as likely as not

Magnitude of impact
Medium-low

Are you able to provide a potential financial impact figure?
Yes, a single figure estimate

Potential financial impact figure (currency)
10000000

Potential financial impact figure – minimum (currency)
<Not Applicable>

Potential financial impact figure – maximum (currency)
<Not Applicable>

Explanation of financial impact figure
This preliminary estimate of the financial impact is based on a preliminary review of various end-user markets accessible for this product, including the battery market. Based on an average price of approx. 500 €/t CIF, and a target capacity of 20 kt MnO per year, the financial impact was calculated as a preliminary estimate.

Cost to realize opportunity
2000000

Strategy to realize opportunity and explanation of cost calculation
The existing facilities in Gabon would need to be modified in order to enable new product to be packaged and export to our customers.

Comment
If an investment decision was taken on this project, the CAPEX for the actual construction of the project would need to be added to the 90 mUSD required for the feasibility studies.

Identifier
Opp4

Where in the value chain does the opportunity occur?
Direct operations

Opportunity type
Markets

Primary climate-related opportunity driver
Use of public-sector incentives

Primary potential financial impact
Increased revenues resulting from increased demand for products and services

Company-specific description
Most of Eramet maganese plants are located in countries which very low carbon electricity mix (Norway, France, Gabon). In a world where a high carbon price would be applied in every countries, Eramet production cost would be less impacted than the competitors and its products would become more competitive.

Time horizon
Medium-term

Likelihood
Likely

Magnitude of impact
Medium

Are you able to provide a potential financial impact figure?
Yes, an estimated range

Potential financial impact figure (currency)
<Not Applicable>

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure
The carbon intensity our Manganese sites is around 1,04 tCO2/t whereas the sector has a carbon intensity of 4.80 tCO2/t according to the MnI (Manganese institute).
If the carbon price were to be 30€/t worldwide, the competitive advantage for Eramet sites would be (4,8-1,04)*30 = 112.8 €/t
If we take the 2019 production of the Fe and Si manganese sites of Eramet of 354 kt/year, the competitive advantage would be 354 kt * 112.8 €/t = 39.9 M€

Cost to realize opportunity

0

Strategy to realize opportunity and explanation of cost calculation

Most of Eramet maganese plants are already located in countries which very low carbon electricity mix (Norway and France). Our manganese products have already a very low carbon content compared to our competitor's. Thus there is no addtionnal cost to realize this opportunity.

Comment

C3. Business Strategy

C3.1

(C3.1) Have climate-related risks and opportunities influenced your organization's strategy and/or financial planning?

Yes, and we have developed a low-carbon transition plan

C3.1a

(C3.1a) Does your organization use climate-related scenario analysis to inform its strategy?

Yes, qualitative and quantitative

C3.1b

(C3.1b) Provide details of your organization's use of climate-related scenario analysis.

Climate-related scenarios and models applied	Details
IEA B2DS Other, please specify (IEA 2°C scenario with CO2 capture/storage (CCS — Carbon Capture Storage))	Eramet takes into account the impacts of climate change in its strategic process. The Group recognises that the world could react in different ways to combat climate change. Scenario-based analyses is a powerful tool for managing this chapter of the strategic reflection. This approach is efficient for building a comprehensive model of the complex changes and the interactions between them, which is helpful for defining the transformations caused by climate change. The Group conducted this analysis in 2018 in collaboration with a domain-specific expert consultant. The adopted approach ("by physical flows") is founded, for each scenario, on the physical reality of the activity, which the Group ensures is compatible with the maximum limit of 2°C increase in temperature. Principles of the physical flow-based approach in 4 steps: 1 - "2°C compatible" carbon budget, 2 - Emissions trajectories by sector by 2050, 3 - Physical production flows 4 - Final demand for products sold by the company. 2 scenarios modelling a transition to a low-carbon society, compatible with the 2°C target of the Paris Agreement, have been considerered: • The IEA 2°C scenario with CO2 capture/storage (CCS— Carbon Capture Storage) as a benchmark; • A variant of this first scenario, more cautious on the hypotheses of an improvement in energy efficiency and of CCS deployment kinetics. In 2020 the IEA B2DS has also been considered as we are working on our SBT target . These analysis highlighted, for example, the criticality of certain metals produced by the Group and necessary for the energy transition, which helped to guide the Group's strategy, conforting Eramet's ambition in securing additionnal critical metal sources. Eramet is clearly positioned on the metals involved in the energy transition and the digital transition: lithium, nickel salts and cobalt salts. These markets are changing rapidly due to the demand for metals for batteries, particularly for electric vehicles, solar panels and electronics. The development of batteries will lead to a very strong growth in demand for certain critical metals: demand for lithium is expected to increase 4 fold by 2030, for pure nickel salts fivefold and for cobalt threefold. It is clear that securing access to critical metal resources is a structural competitive advantage in the supply chain. The main result of this analysis is that ERAMET's metals, in particular nickel, lithium and alloys, are essential metals for the development of energy transition technologies. This materializes by 2030 by favorable prospects for the development of demand. - For nickel, which ERAMET produces in New Caledonia and soon in Indonesia, demand is expected to grow by 3% per year by 2030 in the IEA's 2 ° C scenario. This growth is particularly driven by lithium-ion batteries (which use nickel) for the storage of electricity. In fact, the quantity of nickel called up in 2030 for the energy transition represents 25% of the 2017 primary nickel production, illustrating the important growth driver for demand that batteries are. - Lithium is essential for the production of lithium-ion batteries used, among others, to electrify mobility and should see its demand multiplied by five by 2030. In other words, the demand for lithium in 2030 to meet the production of batteries is expected to represent the equivalent of three times global lithium production in 2016. Eramet is the only European player to have secured significant resources of critical metals in this fast-growing market. The Group's current mining assets offer key advantages: very rich geological resources allowing long-term mining. This should enable the Group to diversify its asset base both financially and geographically: • Lithium, particularly via the Eramet deposit in Argentina (which is currently on hold due to bad market condition); • Increased exposure to nickel salts and cobalt; • Development of short loop recycling, with a view to optimising the circular economy.

C3.1d

(C3.1d) Describe where and how climate-related risks and opportunities have influenced your strategy.

	Have climate-related risks and opportunities influenced your strategy in this area?	Description of influence
Products and services	Yes	As an emissive industry on one hand but also a contributor to the development of low-carbon technologies on the other, Eramet's alignment with the transition to a decarbonated economy carries as many risks as of opportunities for its business. Scenario-based analyses is a powerful tool for managing this chapter of the strategic reflection. It entails a forward- looking review, projecting Eramet's current activity onto various possible worlds, in order to assess the consequences on business. This approach is efficient for building a comprehensive model of the complex changes and the interactions between them, which is helpful for defining the transformations caused by climate change. The Group conducted this analysis in 2018 in collaboration with a domain-specific expert consultant. As a result, Eramet's activity is necessary for the development of low carbon technologies and essential for developing and creating responsible metal sectors involving all critical energy transition stakeholders. Outlook for the demand for metals produced by Eramet is favourable by 2030 in the IEA's 2°C scenario. Thus, Eramet needs to access to these natural resources as it is a structural competitive advantage. Eramet is the only European player to have secured significant resources of critical metals in this fast-growing market and has positioning itself as a key supplier, particularly via: - the Eramet lithium deposit in Argentina (even in on hold in 2020) - the diversification of Weda Bay (Indonesia) towards products for EV batteries - Li-on batteries recycling R&D programme
Supply chain and/or value chain	Yes	The Eramet Group is "part of the solution" to climate change and makes a significant contribution to its customers' CO2 emissions avoidance strategy by offering them innovative solutions that reduce emissions associated with the use of its products (scope 3) today and in the next decades. This goes far beyond the production of metals essential for the energy and digital transition and relates in particular to the High Performance Alloys Division. For example, by producing lighter alloy forged parts for the aeronautics industry, the group makes a significant contribution to aircraft weight reduction, which has the direct consequence of reducing fuel consumption and associated emissions. A second example is the ML340 alloy, selected by customers for the turbine shaft of LEAP aircraft engines, and used in all new generations of single-aisle aircraft. This alloy significantly reduces fuel consumption compared to the current generation of aircraft. This result is linked, among other things, to the increase in combustion temperature that this innovative alloy enables. The level of emissions avoided through these various activities has not been precisely quantified, but it is an order of magnitude of several hundred kt CO2 per year. Eramet is gradually developing scope 3 CO2 emissions assessment tools that will enhance its ability to efficiently manage actions with a favourable impact on this scope.
Investment in R&D	Yes	The energy transition requires additional electric mobility. Securing access to critical metal resources will be a key challenge for all european players involved in the battery manufacturing supply chain. It can be either from primary raw material or through secondary materials originating from li-ion battery recycling. Eramet's strategy is to be able to deliver these critial materials from primary sources as well as from recycled li-ion batteries for the next decades (2030 and beyond). It is the purpose of the ReLieVe project (which stands for Recycling of Li-ion batteries for Electric Vehicles), which is a collaborative research and innovation project whose goal is to develop an innovative process for recycling lithium-ion batteries used in electric vehicles. The idea is also to produce these new batteries in Europe and to build an industrial sector integrated from end to end—from the collection and dismantlement of the batteries at the end of their useful life, to the recycling of their components, to the production of new electrode materials. ReLieVe is developing a large-scale version of an innovative, "closed-loop" process for recycling lithium-ion batteries. In contrast to more conventional processes, this one will recycle metals while retaining their physical and chemical qualities, so that they may be re-used in the design of a new lithium-ion battery cathod.From an environmental perspective, the challenge is two-fold: first, to develop a process that has the smallest possible environmental impact—and carbon impact, in particular—and second, to maximize the number of lithium-ion components that can be recycled.
Operations	Yes	As an emissive industry, Eramet's alignment with the transition to a decarbonated economy by 2050 means it has to reduce its energy consumption and carbon emissions. Eramet continues to implement its Climate Change and Energy policies, both in conducting its operations and in developing its strategy. Eramet's answer to climate change is based on the following focus points: - the reduction of CO2 emissions on the 1 & 2 scopes ; - "being part of the solution" by helping customers (scope 3 emissions) to reduce their GHG emissions, by offering products and solutions that mainly contribute to reducing the carbon footprint. This is reflected in one of the three pillars of the Group's strategy: "to expand the portfolio of activities towards energy transition metals". In 2018, the Group conducted a review to define a target for reducing scopes 1 & 2 CO2 emissions, based in particular on technical and organizational levers. This work has led the Group to include in its CSR 2018-2023 roadmap a significant reduction carbon target for the generated tonnes of CO2 per tonne. in 2019, the Eramet Group continued its efforts to decarbonate the energy mix by: modulating the power of SNL's oil-fired power plant in order to absorb renewable electricity production peaks for New Caledonia; setting up solar panels at the Les Ancizes sites, signing 2 wind PPAs in Norway, thereby contributing to the development of renewable energies. Moreover, the Group Energy & Climate Policy, which incorporates the principles of the ISO 50001 standard, is deployed by the Energy & Climate Department across all sites. At the end of 2019, nine sites had already set up an ISO 50001 certified energy management system: the three sites of Eramet Norway, Pamiers, Comilog Dunkerque -- in addition to the four sites certified in 2019 (two of the Comilog sites in Gabon DFIP and CIM, the Doniambo plants and the Aubert & Duval sites of Les Ancizes). The momentum continues and Eramet Marietta, the mine sites in New Caledonia and the Moanda Industrial Complex are getting ready for certification in 2020.

C3.1e

(C3.1e) Describe where and how climate-related risks and opportunities have influenced your financial planning.

	Financial planning elements that have been influenced	Description of influence
Row 1	Revenues Direct costs Capital expenditures Acquisitions and divestments Assets	Our climate scenarios showed that the energy transition will require to the electrification of transportation. This electrification relies heavily on batteries, that will lead to a very strong growth in demand for certain critical metals by 2025 such as lithium (x3), pure nickel (x2) or cobalt (x2). On top of maintaining its strong position in nickel mines assets, Eramets needed to increase its lithium mines assets to anticipate the market growth and create additional revenues until 2030 and beyond. Thus Eramet decided to secure its access to lithium through mines near Salta in Argentina - mining licence was granted in 2019 (project mothballed in 2020 due to Covid situation). In addition, our R&D led to the development of a new process for producing battery-quality lithium carbonate. The extraction process developed by Eramet achieves an 85% yield over a processing period of just a few days. By comparison, the traditional evaporation procedure delivers less than 50% yield in 18 months. Moreover in January 2020, Eramet announced a partnership with BASF and SUEZ to conducta a Li-ion batteries's recycling R&D program (ReLieVe) : a large-scale version of an innovative, "closed-loop" process for recycling lithium-ion batteries, allowing to recycle metals while retaining their physical and chemical qualities, so that they may be re-used in the design of a new lithium-ion battery cathode.

C3.1f

(C3.1f) Provide any additional information on how climate-related risks and opportunities have influenced your strategy and financial planning (optional).

C4. Targets and performance

C4.1

(C4.1) Did you have an emissions target that was active in the reporting year?
Intensity target

C4.1b

(C4.1b) Provide details of your emissions intensity target(s) and progress made against those target(s).

Target reference number
Int 1

Year target was set
2018

Target coverage
Company-wide

Scope(s) (or Scope 3 category)
Scope 1+2 (location-based)

Intensity metric
Other, please specify (Metric tons of CO2 per Metric tons of outgoing product)

Base year
2018

Intensity figure in base year (metric tons CO2e per unit of activity)
0.438

% of total base year emissions in selected Scope(s) (or Scope 3 category) covered by this intensity figure
100

Target year
2023

Targeted reduction from base year (%)
26

Intensity figure in target year (metric tons CO2e per unit of activity) [auto-calculated]

% change anticipated in absolute Scope 1+2 emissions
-6

% change anticipated in absolute Scope 3 emissions
0

Intensity figure in reporting year (metric tons CO2e per unit of activity)
0.378

% of target achieved [auto-calculated]

Target status in reporting year
Underway

Is this a science-based target?
No, but we anticipate setting one in the next 2 years

Please explain (including target coverage)
Targeted % reduction in carbon intensity of group's activities :
Group target for 2023 vs. 2018 = -26% tCO2/t outgoing product (1)

•Impact of energy efficiency levers and decarbonisation of the energy consumed = -9,5% (2) tCO2/t outgoing product

•Impact of the business mix effect related to the Group's strategic choice to develop its mining activity, which is lower in emissions than the Group's processing activities (3)

Eramet is currently defining a longer-term science-based target, which implies transformations of processes that must necessarily be based on new R & D and Innovation levers.

Notes :
(1) With the level of mining and processing activity in the year of reference (2018).
(2)Tonne of product leaving the sites: ingots, powder, ores, etc.
(3) Mining activity is about 80 times lower in emissions per tonne of outgoing product than the Group's other activities.

C4.2

(C4.2) Did you have any other climate-related targets that were active in the reporting year?
Other climate-related target(s)

C4.2b

(C4.2b) Provide details of any other climate-related targets, including methane reduction targets.

Target reference number
Oth 1

Year target was set
2020

Target coverage
Other, please specify (Sites with an energy consumption > 200GWh/year)

Target type: absolute or intensity
Absolute

Target type: category & Metric (target numerator if reporting an intensity target)

Energy consumption or efficiency	Other, please specify (Quantity of sites certified ISO 50 001 (Energy Management System) with an energy consumption > 200GWh/year)

Target denominator (intensity targets only)
<Not Applicable>

Base year
2018

Figure or percentage in base year
5

Target year
2020

Figure or percentage in target year
12

Figure or percentage in reporting year
9

% of target achieved [auto-calculated]

Target status in reporting year
Underway

Is this target part of an emissions target?
92% of the Group energy consumption is enclosed by 12 sites which consume > 200 GWh/year.
Their Scope 1 & 2 emissions represent 88% of the Group emissions.

Is this target part of an overarching initiative?
No, it's not part of an overarching initiative

Please explain (including target coverage)
At the end of 2019, nine sites had already set up an ISO 50001 certified energy management system: the three sites of Eramet Norway, Pamiers, Comilog Dunkerque -- in addition to the four sites certified in 2019 (two of the Comilog sites in Gabon, the SLN Doniambo plants and the Aubert & Duval sites of Les Ancizes).
The momentum continues and Eramet Marietta, mines sites in New Caledonia and the Moanda Industrial Complex are getting ready for certification in 2020.
The ISO 50001 approach, as with any continuous improvement approach, requires the implementation of relevant and efficient action plans. This year of work enabled in particular:
- deployment of a digital energy performance optimisation solution (“Brain Cube”) at the Les Ancizes site. To date, 80% of the potentially affected installations are now monitored. It is gradually being deployed at the other sites of the High Performance Alloys Division;
- deployment at Gabon mines of a fleet management system which provides real-time monitoring and piloting of energy consumption and CO2 emissions;

C4.3

(C4.3) Did you have emissions reduction initiatives that were active within the reporting year? Note that this can include those in the planning and/or implementation phases.
Yes

C4.3a

(C4.3a) Identify the total number of initiatives at each stage of development, and for those in the implementation stages, the estimated CO2e savings.

	Number of initiatives	Total estimated annual CO2e savings in metric tonnes CO2e (only for rows marked *)
Under investigation	4	
To be implemented*	0	0
Implementation commenced*	12	60240
Implemented*	11	1200
Not to be implemented	0	

C4.3b

(C4.3b) Provide details on the initiatives implemented in the reporting year in the table below.

Initiative category & Initiative type

Energy efficiency in buildings	Lighting

Estimated annual CO2e savings (metric tonnes CO2e)
141

Scope(s)
Scope 1
Scope 2 (location-based)

Voluntary/Mandatory
Voluntary

Annual monetary savings (unit currency – as specified in C0.4)
84000

Investment required (unit currency – as specified in C0.4)
0

Payback period
No payback

Estimated lifetime of the initiative
6-10 years

Comment
Energy Performance Contract ;
Energy savings = 2,2GWh/year ;
Emission factor = 0,064 tCO2/MWh ;
Estimated annual CO2e savings = 2200*0,064 = 141 tCO2/year

Initiative category & Initiative type

Energy efficiency in production processes	Motors and drives

Estimated annual CO2e savings (metric tonnes CO2e)
101

Scope(s)
Scope 1
Scope 2 (location-based)

Voluntary/Mandatory
Voluntary

Annual monetary savings (unit currency – as specified in C0.4)
82400

Investment required (unit currency – as specified in C0.4)
0

Payback period
No payback

Estimated lifetime of the initiative
6-10 years

Comment
Energy Performance Contract ; Variable speed drive on fans motors
Energy savings = 1,6 GWh/year ;
Emission factor = 0,064 tCO2/MWh ;
Estimated annual CO2e savings = 1600*0,064 = 102 tCO2/year

Initiative category & Initiative type

Energy efficiency in production processes	Waste heat recovery

Estimated annual CO2e savings (metric tonnes CO2e)
60000

Scope(s)
Scope 1

Voluntary/Mandatory
Voluntary

Annual monetary savings (unit currency – as specified in C0.4)
0

Investment required (unit currency – as specified in C0.4)
0

Payback period
4-10 years

Estimated lifetime of the initiative
21-30 years

Comment
(For confidentiality reasons, no financial data will be communicated about this project.)
After launching a pioneering project on sustainable sea transport, Eramet Norway is now setting its sights on increasing its energy savings. Eramet Norway Sauda has indeed signed a contract with Clarke Energy, a multinational company specialising in energy production systems, to build a gas engine, called an Energy Recovery Unit (ERU). The ERU will use furnace gas to produce electric and thermal energy. The project has also received the support of the Norwegian authorities.

This project is part of Eramet Norway's NewERA program, which aims to develop and implement more environmentally friendly technologies: furnace gas energy recovery, reduce the use of electricity and coke by drying the ore prior to the smelting process; agglomeration of by-products and waste materials to make better use of manganese units in order to lower deposit levels; and to potentially significantly increase Eramet Norway's supply of thermal energy to sell to external clients.

This pilot project is fully in line with the Group's CSR strategy, in regards to reducing the CO2 emissions by 26% per ton on outgoing products by 2023. ERU is a pilot project: if the tests confirm the expected results, it could lay the foundation for a plant built on a more eco-responsible and sustainable model.

Initiative category & Initiative type

Transportation	Other, please specify (Transport infrastructure)

Estimated annual CO2e savings (metric tonnes CO2e)
1200

Scope(s)
Scope 3

Voluntary/Mandatory
Voluntary

Annual monetary savings (unit currency – as specified in C0.4)
0

Investment required (unit currency – as specified in C0.4)
1900000

Payback period
No payback

Estimated lifetime of the initiative
21-30 years

Comment
Eramet Norway received financial support from Enova – a company owned by the Norwegian government with the purpose of contributing to reduced greenhouse gas emissions, development of energy and climate technology and a strengthened security of supply – for its onshore power projects at the Group's Norwegian plants.

This project encompasses the three manganese alloy sites in Porsgrunn, Kvinesdal and Sauda, as well as TTI in Tyssedal. The idea is to offer access to onshore electric power to cargo vessels – especially to Eramet Norway's transport partners – and thus to contribute to the reduction of carbon emissions, particle emissions and noise generated by port activities.

C4.3c

(C4.3c) What methods do you use to drive investment in emissions reduction activities?

Method	Comment
Internal price on carbon	The Group is preparing for the potential emergence of such a market by experimenting with an internal price for its investment projects, the evaluation of its strategic options, on the basis of 30 EUR per tonne of CO2. The Group is preparing for the potential emergence of such a market by experimenting with an internal price for its investment projects, and for the evaluation of its strategic options, on the basis of an internal price of €30 per tonne of CO2. The provision is also applicable to the investment projects developed in the geographic areas that do not have the incentive of a carbon quota system. The consequence of this choice is to prioritise lower-carbon emitting technological solutions and contribute to improving the awareness of climate change with all Eramet employees.
Compliance with regulatory requirements/standards	ERAMET conducts internal and external benchmarks (technologies, best practices)

C4.5

(C4.5) Do you classify any of your existing goods and/or services as low-carbon products or do they enable a third party to avoid GHG emissions?
Yes

C4.5a

(C4.5a) Provide details of your products and/or services that you classify as low-carbon products or that enable a third party to avoid GHG emissions.

Level of aggregation
Group of products

Description of product/Group of products
Recycled metals (Fe, Mo, Ni, Cr, W, V, Co, or Ti).

Are these low-carbon product(s) or do they enable avoided emissions?
Low-carbon product and avoided emissions

Taxonomy, project or methodology used to classify product(s) as low-carbon or to calculate avoided emissions
Other, please specify (From an Life Cycle Anlaysis point of view, recycled metals have a lower carbon impact then new metals.)

% revenue from low carbon product(s) in the reporting year
2

% of total portfolio value
<Not Applicable>

Asset classes/ product types
<Not Applicable>

Comment
Revenues are not split into this category, the provided figure is a gross estimate.

Bilan Carbone methodology is used to assess the emissions linked with the production of non-recycled metal and recycled metal

C5. Emissions methodology

C5.1

(C5.1) Provide your base year and base year emissions (Scopes 1 and 2).

Scope 1

Base year start
January 1 2018

Base year end
December 31 2018

Base year emissions (metric tons CO2e)
3886331

Comment

Scope 2 (location-based)

Base year start
January 1 2018

Base year end
December 31 2018

Base year emissions (metric tons CO2e)
244477

Comment

Scope 2 (market-based)

Base year start

Base year end

Base year emissions (metric tons CO2e)

Comment

C5.2

(C5.2) Select the name of the standard, protocol, or methodology you have used to collect activity data and calculate emissions.
Bilan Carbone

C6. Emissions data

C6.1

(C6.1) What were your organization's gross global Scope 1 emissions in metric tons CO2e?

Reporting year

Gross global Scope 1 emissions (metric tons CO2e)
3708164

Start date
<Not Applicable>

End date
<Not Applicable>

Comment

C6.2

(C6.2) Describe your organization's approach to reporting Scope 2 emissions.

Row 1

Scope 2, location-based
We are reporting a Scope 2, location-based figure

Scope 2, market-based
We have operations where we are able to access electricity supplier emission factors or residual emissions factors, but are unable to report a Scope 2, market-based figure

Comment
Purchases of very low carbon electricity :
88% of the electricity purchased in 2019 was produced with little or no use of fossil fuels (Norway, Sweden, France, Gabon)

C6.3

(C6.3) What were your organization's gross global Scope 2 emissions in metric tons CO2e?

Reporting year

Scope 2, location-based
363640.642

Scope 2, market-based (if applicable)
<Not Applicable>

Start date
<Not Applicable>

End date
<Not Applicable>

Comment

C6.4

(C6.4) Are there any sources (e.g. facilities, specific GHGs, activities, geographies, etc.) of Scope 1 and Scope 2 emissions that are within your selected reporting boundary which are not included in your disclosure?
No

C6.5

(C6.5) Account for your organization's gross global Scope 3 emissions, disclosing and explaining any exclusions.

Purchased goods and services

Evaluation status
Relevant, calculated

Metric tonnes CO2e
1181020.512

Emissions calculation methodology
Two types of data have been selected:
- Physical data in tonnes for some raw materials when the data was available from Eramet lead buyers. These data have been selected in priority as the emissions factors are more precise than the ones for monetary data. The emissions factors come from Base Carbone ADEME and from I Care & Consult ACV
- Monetary data in euros for the services and for the purchase goods when no physical data are available. The emissions factors come from the Evaluator Quantis that have been extracted (https://quantis-suite.com/Scope-3-Evaluator/)

Percentage of emissions calculated using data obtained from suppliers or value chain partners
0

Please explain

Capital goods

Evaluation status
Relevant, calculated

Metric tonnes CO2e
279655.106

Emissions calculation methodology
The data from Eramet are spend data in euros - the emissions factors selected come from the Evaluator Quantis

Percentage of emissions calculated using data obtained from suppliers or value chain partners
0

Please explain

Fuel-and-energy-related activities (not included in Scope 1 or 2)

Evaluation status
Relevant, calculated

Metric tonnes CO2e
674825.698

Emissions calculation methodology
- Electricity: only the upstream steps to generate electricity, and the losses (upstream + combustion) are taken into account as requested by the GHG Protocol
- Other energy (reductors such as anthracite or coke included here): Eramet provided data and the corresponding emissions factors come from either the Base Carbone ADEME or ACV from I Care & Consult

Percentage of emissions calculated using data obtained from suppliers or value chain partners
0

Please explain

Upstream transportation and distribution

Evaluation status
Relevant, calculated

Metric tonnes CO2e
384680.878

Emissions calculation methodology
- For Mining and Pyrometallurgy/Hydrometallurgy: emissions factors in vehicule.km
- For DAHP: emissions factors in tonne.km as there are not only Eramet's products in the transports, and vehicule.km emissions factors are therfore not relevant

Percentage of emissions calculated using data obtained from suppliers or value chain partners
0

Please explain

Waste generated in operations

Evaluation status
Relevant, calculated

Metric tonnes CO2e
282554.632

Emissions calculation methodology
When the waste will be recovered or recycled, the emissions factors have been set to 0 kgCO2e/tonne of waste

Percentage of emissions calculated using data obtained from suppliers or value chain partners
0

Please explain

Business travel

Evaluation status
Relevant, calculated

Metric tonnes CO2e
29975.664

Emissions calculation methodology
The data from Eramet are spend data in euros - the emissions factors selected come from the Evaluator Quantis

Percentage of emissions calculated using data obtained from suppliers or value chain partners
0

Please explain

Employee commuting

Evaluation status
Relevant, calculated

Metric tonnes CO2e
20400

Emissions calculation methodology
This figure has been obtained by using the Evaluator Quantis and indicating the following details:
- Industry type: "Basic metals and fabricated metals"
- Time period: January 2016 - December 2016 (latest period available in the Evaluator Quantis)
- No. Employees: 10,001 and up
The uncertainty is quite high here

Percentage of emissions calculated using data obtained from suppliers or value chain partners
0

Please explain

Upstream leased assets

Evaluation status
Relevant, calculated

Metric tonnes CO2e
2423.049

Emissions calculation methodology
The data from Eramet are spend data in euros - the emissions factors selected come from the Evaluator Quantis

Percentage of emissions calculated using data obtained from suppliers or value chain partners
0

Please explain

Downstream transportation and distribution

Evaluation status
Relevant, not yet calculated

Metric tonnes CO2e
<Not Applicable>

Emissions calculation methodology
<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners
<Not Applicable>

Please explain
Eramet is not concerned by this category as there is no data available on downstream transportation for which Eramet does not pay.

Processing of sold products

Evaluation status
Relevant, calculated

Metric tonnes CO2e
7161209.554

Emissions calculation methodology
The following perimeter has been defined for Eramet:
- Eramet is concerned until the alloy step of the metal value chain as regards the Scope 3
- After that, the emissions are not taken into account (e.g. no emissions for processing of sold products from the DAHP)
- The rational is that the processes are too diverse after this step of the value chain. Moreover, the bulk of the emissions come from the pyrometallugy step, and this is taken into account in Eramet's Scope 3 perimeter

Percentage of emissions calculated using data obtained from suppliers or value chain partners
0

Please explain

Use of sold products

Evaluation status
Not relevant, explanation provided

Metric tonnes CO2e
<Not Applicable>

Emissions calculation methodology
<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners
<Not Applicable>

Please explain
When defining the Scope 3 of Eramet, it has been decided not to consider the emissions occurring at the downstream steps of the DAHP (alloy) business unit.
The rationale behind it is:
• The clients of Eramet will produce a wide range of products, hence the difficulty to allocate the right emissions factors
• The emissions will not be very high compared to the step “Transformation” (mainly through pyrometallurgy), that is either part of the Scope 1+2 of Eramet when Eramet takes care of it, or part of Scope 3 of the products processed by Eramet at the Mine business unit and then sold to clients
As the GHG Protocol category “Use of sold products” occurs after the processing described above, this category is also out of the perimeter of Eramet’s Scope 3. Another explanation is that Eramet only sells intermediate products that will need further processing before being used by the final client.

End of life treatment of sold products

Evaluation status
Relevant, calculated

Metric tonnes CO2e
132003.707

Emissions calculation methodology
As not data was available from Eramet's clients, a rough estimation has been made based on the waste generated by Eramet itself as a model. The incertitude is very high, but the amount of emissions is negligible compared to the total emissions of the Scope 3 of Eramet (around 1% of the total)

Percentage of emissions calculated using data obtained from suppliers or value chain partners
0

Please explain

Downstream leased assets

Evaluation status
Not relevant, explanation provided

Metric tonnes CO2e
<Not Applicable>

Emissions calculation methodology
<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners
<Not Applicable>

Please explain
Eramet is not concerned by this category as it does not have leased assets.

Franchises

Evaluation status
Not relevant, explanation provided

Metric tonnes CO2e
<Not Applicable>

Emissions calculation methodology
<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners
<Not Applicable>

Please explain
Eramet is not concerned by this category as it has no franchises.

Investments

Evaluation status
Relevant, calculated

Metric tonnes CO2e
427313.277

Emissions calculation methodology
Only the joint-ventures of Eramet are included in this category. The methodology to calculate the emissions of the Scope 3 is the following:
- When Eramet operates the joint-venture, this will be part of Scope 1+2
- When Eramet does not operate the joint-venture, the Scope 1+2 of the joint-venture multiplied by the % of shares owned by Eramet will be part of the Scope 3 category Investments of Eramet
For the current carbon audit, only the nominal activity of the Weda Bay joint-venture has been taen into account (SoNiBay will start in 2023, therefore this is too early to integrate it yet)

Percentage of emissions calculated using data obtained from suppliers or value chain partners
100

Please explain
Eramet does not operate the Weda Bay joint-venture. All the data come from the joint-venture itself, where partners of Eramet are the operators

Other (upstream)

Evaluation status
Please select

Metric tonnes CO2e
<Not Applicable>

Emissions calculation methodology
<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners
<Not Applicable>

Please explain

Other (downstream)

Evaluation status
Please select

Metric tonnes CO2e
<Not Applicable>

Emissions calculation methodology
<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners
<Not Applicable>

Please explain

C6.7

(C6.7) Are carbon dioxide emissions from biogenic carbon relevant to your organization?
No

C6.10

(C6.10) Describe your gross global combined Scope 1 and 2 emissions for the reporting year in metric tons CO2e per unit currency total revenue and provide any additional intensity metrics that are appropriate to your business operations.

Intensity figure
0.001109

Metric numerator (Gross global combined Scope 1 and 2 emissions, metric tons CO2e)
4071804.79

Metric denominator
unit total revenue

Metric denominator: Unit total
3671000000

Scope 2 figure used
Location-based

% change from previous year
2.67

Direction of change
Increased

Reason for change
The carbon intensity per unit of revenue increased slightly as our ore related revenues increased compared to the previous year. The value of ore is much lower than the value of pyro metal, explaining a revenue carbon intensity increase but a decrease in product carbon intensity.

Intensity figure
0.377802

Metric numerator (Gross global combined Scope 1 and 2 emissions, metric tons CO2e)
4071804.79

Metric denominator
metric ton of product

Metric denominator: Unit total
10777615.87

Scope 2 figure used
Location-based

% change from previous year
14

Direction of change
Decreased

Reason for change
In 2019, Eramet issued 4.07 million tonnes of CO2, (3.71 MtCO2 of scope 1 and 0.36 of scope 2), despite activity having increased by 1.3 million tonnes of finished product. The effects of improved energy efficiency are slightly higher than those of the activity increase. Significant progress was made in implementing our strategic roadmap. We achieved new production records at all our mines, exceeding our targets. We made good progress on our social and environmental commitments including CO2 emissions with a 112% completion rate for our CSR roadmap, ahead of schedule.

There is therefore a 14% gain in specific CO2 emissions (expressed in tCO2/t produced) compared to the 2018 reference and approximately one year ahead compared to the target curve. This result was obtained thanks to the general mobilisation of teams working on the issue, against a backdrop of increased nickel ore exports (less energy intensive than metal).

C7. Emissions breakdowns

C7.1

(C7.1) Does your organization break down its Scope 1 emissions by greenhouse gas type?
No

C7.2

(C7.2) Break down your total gross global Scope 1 emissions by country/region.

Country/Region	Scope 1 emissions (metric tons CO2e)
France	210997.133
Gabon	439037.082
Norway	974470.164
New Caledonia	1820576.975
United Kingdom of Great Britain and Northern Ireland	172.649
Senegal	112380.413
Sweden	933
United States of America	149498
China	52
India	46

C7.3

(C7.3) Indicate which gross global Scope 1 emissions breakdowns you are able to provide.

By business division
By facility
By activity

C7.3a

(C7.3a) Break down your total gross global Scope 1 emissions by business division.

Business division	Scope 1 emissions (metric ton CO2e)
Mines and metals division	3594995.149
High performances alloys division	113169
Nickel division	

C7.3b

(C7.3b) Break down your total gross global Scope 1 emissions by business facility.

Facility	Scope 1 emissions (metric tons CO2e)	Latitude	Longitude
AD Firminy	11813.683	45.392253	4.281231
AD Imphy	1526.711	46.935086	3.257984
AD Issoire	3353.327	45.563695	3.252322
AD Les Ancizes	40798.63	45.926026	2.839456
AD Pamiers	21063.813	43.116515	1.607468
AD TAF	202.994	48.920413	2.31151
Brown Europe	18.015	44.949013	1.930021
ECOTITANIUM	201.419	45.918376	2.848571
Interforge	13918.4	45.558497	3.25228
Les forges de Montplaisir	287.168	45.715434	4.957805
UKAD	4206.292	45.921132	2.839171
Erasteel Boonton	262.925	40.912765	-74.396739
Erasteel Champagnole	390.627	46.743936	5.915298
Erasteel Commentry	13920.903	46.287682	2.744858
Erasteel Långshyttan	618.112	60.452064	16.035988
Erasteel Söderfors	315.152	60.383369	17.243587
Erasteel Vikmanshyttan	0	60.298212	15.82785
Erasteel Stubs Warrington	172.649	53.380871	-2.58575
Comilog Dunkerque	96295.808	51.014155	2.169046
Comilog Gabon Moanda Industrial Complex	242303.165	-1.502145	13.273832
Comilog Gabon Mine Moanda	28665.681	-1.541007	13.237167
Complexe Métallurgique de Moanda	86992.778	-1.504619	13.275844
Port Minéralier Owendo	31368.959	0.291233	9.496397
ERAMET Marietta	149235.363	-81.515797	-81.522334
ERAMET Norway Kvinesdal	182795.124	58.278851	6.894714
ERAMET Norway Porsgrunn	207110.92	59.127216	9.623821
ERAMET Norway Sauda	318567.688	59.648422	6.361911
Setrag	49706.501	0.32375	9.501057
Grande-Côte Opérations	112380.413	14.717099	-17.485214
TTI Tyssedal	265996.432	60.118635	6.555183
ERAMET Sandouville	2561.612	49.473539	0.282432
SLN Centrale Thermique Doniambo	927874.707	-22.252645	166.446777
SLN Doniambo	846359.726	-22.252645	166.446777
SLN Mines Kouaoua	8698.837	-21.454258	165.763886
SLN Mines Nepoui Kopéto	14496.877	-21.222474	165.035692
SLN Mines Poum	1317.335	-20.246581	164.044204
SLN Mines Thio	7544.371	-21.617254	166.187773
SLN Mines Tiébaghi	14285.123	-20.468613	164.221923
ERAMET Research	437.73	48.767484	2.000559
AD Irun	0	43.324942	-1.825489
EIML	52.015	19.054494	72.892264
SQUAD	46.164	16.113933	74.524398

C7.3c

(C7.3c) Break down your total gross global Scope 1 emissions by business activity.

Activity	Scope 1 emissions (metric tons CO2e)
Forged and Rolled Long Products	54745.38
Closed-Die Forging	42743.251
High-Speed Steels and Recycling	15680.369
Manganese	1393041.986
Mineral Sands	378376.845
Nickel	1823138.588
R&D	437.73

C-CE7.4/C-CH7.4/C-CO7.4/C-EU7.4/C-MM7.4/C-OG7.4/C-ST7.4/C-TO7.4/C-TS7.4

(C-CE7.4/C-CH7.4/C-CO7.4/C-EU7.4/C-MM7.4/C-OG7.4/C-ST7.4/C-TO7.4/C-TS7.4) Break down your organization's total gross global Scope 1 emissions by sector production activity in metric tons CO2e.

	Gross Scope 1 emissions, metric tons CO2e	Net Scope 1 emissions , metric tons CO2e	Comment
Cement production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Chemicals production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Coal production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Electric utility activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Metals and mining production activities	3708164	<Not Applicable>	
Oil and gas production activities (upstream)	<Not Applicable>	<Not Applicable>	<Not Applicable>
Oil and gas production activities (midstream)	<Not Applicable>	<Not Applicable>	<Not Applicable>
Oil and gas production activities (downstream)	<Not Applicable>	<Not Applicable>	<Not Applicable>
Steel production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Transport OEM activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Transport services activities	<Not Applicable>	<Not Applicable>	<Not Applicable>

C7.5

(C7.5) Break down your total gross global Scope 2 emissions by country/region.

Country/Region	Scope 2, location-based (metric tons CO2e)	Scope 2, market-based (metric tons CO2e)	Purchased and consumed electricity, heat, steam or cooling (MWh)	Purchased and consumed low-carbon electricity, heat, steam or cooling accounted for in Scope 2 market-based approach (MWh)
France	47542.039		640995.47	
Gabon	3997.207		471952.67	
Norway	20811.465		2312385	
New Caledonia	36785.071		273292	
United Kingdom of Great Britain and Northern Ireland	770.782		3133.26	
Senegal	559.906		838.18	
Sweden	1289.025		75825	
United States of America	245592.406		394979.01	
China	2685.238		2265.28	
India	1644.592		4282.68	
Spain	114.288		594.1	

C7.6

(C7.6) Indicate which gross global Scope 2 emissions breakdowns you are able to provide.

By business division
By facility
By activity

C7.6a

(C7.6a) Break down your total gross global Scope 2 emissions by business division.

Business division	Scope 2, location-based (metric tons CO2e)	Scope 2, market-based (metric tons CO2e)
Mines and metals division	336031.704	
High performances alloys division	27608.938	

C7.6b

(C7.6b) Break down your total gross global Scope 2 emissions by business facility.

Facility	Scope 2, location-based (metric tons CO2e)	Scope 2, market-based (metric tons CO2e)
AD Firminy	610.977	
AD Imphy	773.612	
AD Issoire	1711.037	
AD Les Ancizes	8493.073	
AD Pamiers	2737.088	
AD TAF	255.073	
Brown Europe	352.245	
ECOTITANIUM	569.984	
Interforge	882.968	
Les forges de Montplaisir	6.68	
UKAD	1246.656	
Erasteel Boonton	176.953	
Erasteel Champagnole	332.282	
Erasteel Commentry	2956.383	
Erasteel Långshyttan	470.033	
Erasteel Söderfors	739.976	
Erasteel Vikmanshyttan	79.016	
Erasteel Stubs Warrington	770.782	
Comilog Dunkerque	17624.671	
Comilog Gabon Moanda Industrial Complex	139.242	
Comilog Gabon Mine Moanda	188.604	
Complexe Métallurgique de Moanda	1520.776	
Port Minéralier Owendo	1698.202	
ERAMET Marietta	245415.454	
ERAMET Norway Kvinesdal	6339.015	
ERAMET Norway Porsgrunn	5049.765	
ERAMET Norway Sauda	6344.676	
Setrag	2299.005	
Grande-Côte Opérations	559.906	
TTI Tyssedal	3078.009	
ERAMET Sandouville	8861.28	
SLN Centrale Thermique Doniambo	0	
SLN Doniambo	15629.076	
SLN Mines Kouaoua	3276.266	
SLN Mines Nepoui Kopéto	9193.389	
SLN Mines Poum	21.802	
SLN Mines Thio	662.618	
SLN Mines Tiébaghi	8001.92	
ERAMET Research	128.029	
AD Irun	114.288	
EIML	2685.238	
SQUAD	1644.592	

C7.6c

(C7.6c) Break down your total gross global Scope 2 emissions by business activity.

Activity	Scope 2, location-based (metric tons CO2e)	Scope 2, market-based (metric tons CO2e)
Forged and Rolled Long Products	14935.78	
Closed-Die Forging	7147.733	
High-Speed Steels and Recycling	5525.425	
Manganese	286619.41	
Mineral Sands	3637.915	
Nickel	45646.351	
R&D	128.029	

C-CE7.7/C-CH7.7/C-CO7.7/C-MM7.7/C-OG7.7/C-ST7.7/C-TO7.7/C-TS7.7

(C-CE7.7/C-CH7.7/C-CO7.7/C-MM7.7/C-OG7.7/C-ST7.7/C-TO7.7/C-TS7.7) Break down your organization's total gross global Scope 2 emissions by sector production activity in metric tons CO2e.

	Scope 2, location-based, metric tons CO2e	Scope 2, market-based (if applicable), metric tons CO2e	Comment
Cement production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Chemicals production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Coal production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Metals and mining production activities	361792.02		
Oil and gas production activities (upstream)	<Not Applicable>	<Not Applicable>	<Not Applicable>
Oil and gas production activities (midstream)	<Not Applicable>	<Not Applicable>	<Not Applicable>
Oil and gas production activities (downstream)	<Not Applicable>	<Not Applicable>	<Not Applicable>
Steel production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Transport OEM activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Transport services activities	<Not Applicable>	<Not Applicable>	<Not Applicable>

C7.9

(C7.9) How do your gross global emissions (Scope 1 and 2 combined) for the reporting year compare to those of the previous reporting year?

Decreased

C7.9a

(C7.9a) Identify the reasons for any change in your gross global emissions (Scope 1 and 2 combined), and for each of them specify how your emissions compare to the previous year.

	Change in emissions (metric tons CO2e)	Direction of change	Emissions value (percentage)	Please explain calculation
Change in renewable energy consumption	1500	Decreased	0.04	In 2019, instead of using electricity generated from fuel oil, we were able to buy 7562 MWh provided by solar panels. The amount of CO2 reduction is 633 t of CO2. It is based on the following calculation: 7562 MWh elec / efficiency of power plant (0.3 MWh elec/MWh fuel) * fuel with emission factor (0.279 tCO2/MWh) = 633 tCO2
Other emissions reduction activities	0	No change	0	
Divestment	0	No change	0	
Acquisitions	0	No change	0	
Mergers	0	No change	0	
Change in output	56866.235	Decreased	1.4	Variation of emissions between the reporting year and the previous year, Scope 1+2. In 2019, Eramet issued 4.07 million tonnes of CO2, (3.71 MtCO2 of scope 1 and 0.36 of scope 2), despite activity having increased by 1.3 million tonnes of finished product. The effects of improved energy efficiency are slightly higher than those of the activity increase. There is therefore a 14% gain in specific CO2 emissions (expressed in tCO2/t produced) compared to the 2018 reference and approximately one year ahead compared to the target curve. This result was obtained thanks to the general mobilisation of teams working on the issue, against a backdrop of increased nickel ore exports.
Change in methodology	0	No change	0	
Change in boundary	0	No change	0	
Change in physical operating conditions	0	No change	0	
Unidentified	0	No change	0	
Other	0	No change	0	

C7.9b

(C7.9b) Are your emissions performance calculations in C7.9 and C7.9a based on a location-based Scope 2 emissions figure or a market-based Scope 2 emissions figure?

Location-based

C8. Energy

C8.1

(C8.1) What percentage of your total operational spend in the reporting year was on energy?
More than 15% but less than or equal to 20%

C8.2

(C8.2) Select which energy-related activities your organization has undertaken.

	Indicate whether your organization undertook this energy-related activity in the reporting year
Consumption of fuel (excluding feedstocks)	Yes
Consumption of purchased or acquired electricity	Yes
Consumption of purchased or acquired heat	No
Consumption of purchased or acquired steam	Yes
Consumption of purchased or acquired cooling	No
Generation of electricity, heat, steam, or cooling	No

C8.2a

(C8.2a) Report your organization's energy consumption totals (excluding feedstocks) in MWh.

	Heating value	MWh from renewable sources	MWh from non-renewable sources	Total (renewable and non-renewable) MWh
Consumption of fuel (excluding feedstock)	LHV (lower heating value)	0	11593026.88	11593026.88
Consumption of purchased or acquired electricity	<Not Applicable>	1479790.62	2733776.26	4213566.88
Consumption of purchased or acquired heat	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>
Consumption of purchased or acquired steam	<Not Applicable>	91783	0	91783
Consumption of purchased or acquired cooling	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>
Consumption of self-generated non-fuel renewable energy	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>
Total energy consumption	<Not Applicable>	1571573.62	14326803.14	15898376.76

C-MM8.2a

(C-MM8.2a) Report your organization's energy consumption totals (excluding feedstocks) for metals and mining production activities in MWh.

	Heating value	Total MWh
Consumption of fuel (excluding feedstocks)	LHV (lower heating value)	11593026.88
Consumption of purchased or acquired electricity	<Not Applicable>	4213566.88
Consumption of purchased or acquired heat	<Not Applicable>	<Not Applicable>
Consumption of purchased or acquired steam	<Not Applicable>	91783
Consumption of purchased or acquired cooling	<Not Applicable>	<Not Applicable>
Consumption of self-generated non-fuel renewable energy	<Not Applicable>	0
Total energy consumption	<Not Applicable>	15898376.76

C8.2b

(C8.2b) Select the applications of your organization's consumption of fuel.

	Indicate whether your organization undertakes this fuel application
Consumption of fuel for the generation of electricity	Yes
Consumption of fuel for the generation of heat	No
Consumption of fuel for the generation of steam	No
Consumption of fuel for the generation of cooling	No
Consumption of fuel for co-generation or tri-generation	No

C8.2c

(C8.2c) State how much fuel in MWh your organization has consumed (excluding feedstocks) by fuel type.

Fuels (excluding feedstocks)
Diesel

Heating value
LHV (lower heating value)

Total fuel MWh consumed by the organization
654857.03

MWh fuel consumed for self-generation of electricity
0

MWh fuel consumed for self-generation of heat
0

MWh fuel consumed for self-generation of steam
<Not Applicable>

MWh fuel consumed for self-generation of cooling
<Not Applicable>

MWh fuel consumed for self-cogeneration or self-trigeneration
<Not Applicable>

Emission factor
0.266

Unit
kg CO2 per KWh

Emissions factor source
Base carbone ADEME

Comment
Diesel for vehicules

Fuels (excluding feedstocks)
Fuel Oil Number 1

Heating value
LHV (lower heating value)

Total fuel MWh consumed by the organization
85306.21

MWh fuel consumed for self-generation of electricity
0

MWh fuel consumed for self-generation of heat
85306.21

MWh fuel consumed for self-generation of steam
<Not Applicable>

MWh fuel consumed for self-generation of cooling
<Not Applicable>

MWh fuel consumed for self-cogeneration or self-trigeneration
<Not Applicable>

Emission factor
0.266

Unit
kg CO2 per KWh

Emissions factor source
Base carbone ADEME

Comment
Heating fuel (domestic fuel oil)

Fuels (excluding feedstocks)
Propane Liquid

Heating value
LHV (lower heating value)

Total fuel MWh consumed by the organization
1508.81

MWh fuel consumed for self-generation of electricity
0

MWh fuel consumed for self-generation of heat
1508.81

MWh fuel consumed for self-generation of steam
<Not Applicable>

MWh fuel consumed for self-generation of cooling
<Not Applicable>

MWh fuel consumed for self-cogeneration or self-trigeneration
<Not Applicable>

Emission factor

0.23

Unit
kg CO2 per KWh

Emissions factor source
Base carbone ADEME

Comment
drying

Fuels (excluding feedstocks)
Hydrogen

Heating value
LHV (lower heating value)

Total fuel MWh consumed by the organization
245.56

MWh fuel consumed for self-generation of electricity
0

MWh fuel consumed for self-generation of heat
245.56

MWh fuel consumed for self-generation of steam
<Not Applicable>

MWh fuel consumed for self-generation of cooling
<Not Applicable>

MWh fuel consumed for self-cogeneration or self-trigeneration
<Not Applicable>

Emission factor
0

Unit
kg CO2 per KWh

Emissions factor source
Base carbone ADEME

Comment
Process: Nitruration of steels

Fuels (excluding feedstocks)
Liquefied Petroleum Gas (LPG)

Heating value
LHV (lower heating value)

Total fuel MWh consumed by the organization
8105.04

MWh fuel consumed for self-generation of electricity
0

MWh fuel consumed for self-generation of heat
8105.04

MWh fuel consumed for self-generation of steam
<Not Applicable>

MWh fuel consumed for self-generation of cooling
<Not Applicable>

MWh fuel consumed for self-cogeneration or self-trigeneration
<Not Applicable>

Emission factor
0.229

Unit
kg CO2 per KWh

Emissions factor source
Base carbone ADEME

Comment
fuel for vehicule

Fuels (excluding feedstocks)
Fuel Oil Number 2

Heating value
LHV (lower heating value)

Total fuel MWh consumed by the organization

4182048.35

MWh fuel consumed for self-generation of electricity
4182048.35

MWh fuel consumed for self-generation of heat
0

MWh fuel consumed for self-generation of steam
<Not Applicable>

MWh fuel consumed for self-generation of cooling
<Not Applicable>

MWh fuel consumed for self-cogeneration or self-trigeneration
<Not Applicable>

Emission factor
0.28

Unit
kg CO2 per KWh

Emissions factor source
Base carbone ADEME

Comment
Heavy Fuel Oil

Fuels (excluding feedstocks)
Natural Gas

Heating value
LHV (lower heating value)

Total fuel MWh consumed by the organization
636670.58

MWh fuel consumed for self-generation of electricity
0

MWh fuel consumed for self-generation of heat
636670.58

MWh fuel consumed for self-generation of steam
<Not Applicable>

MWh fuel consumed for self-generation of cooling
<Not Applicable>

MWh fuel consumed for self-cogeneration or self-trigeneration
<Not Applicable>

Emission factor
0.198

Unit
kg CO2 per KWh

Emissions factor source
Base carbone ADEME

Comment
Mainly for steel heating process and heating of buildings

Fuels (excluding feedstocks)
Anthracite Coal

Heating value
LHV (lower heating value)

Total fuel MWh consumed by the organization
688136.4

MWh fuel consumed for self-generation of electricity
0

MWh fuel consumed for self-generation of heat
0

MWh fuel consumed for self-generation of steam
<Not Applicable>

MWh fuel consumed for self-generation of cooling
<Not Applicable>

MWh fuel consumed for self-cogeneration or self-trigeneration
<Not Applicable>

Emission factor
0.357

Unit
kg CO2 per KWh

Emissions factor source
Base carbone ADEME

Comment
Process: reductant for carbo-reduction of ores

Fuels (excluding feedstocks)
Coking Coal

Heating value
LHV (lower heating value)

Total fuel MWh consumed by the organization
1375013.54

MWh fuel consumed for self-generation of electricity
0

MWh fuel consumed for self-generation of heat
0

MWh fuel consumed for self-generation of steam
<Not Applicable>

MWh fuel consumed for self-generation of cooling
<Not Applicable>

MWh fuel consumed for self-cogeneration or self-trigeneration
<Not Applicable>

Emission factor
0.346

Unit
kg CO2 per KWh

Emissions factor source
Base carbone ADEME

Comment
Process: reductant for carbo-reduction of ores

Fuels (excluding feedstocks)
Coal

Heating value
LHV (lower heating value)

Total fuel MWh consumed by the organization
1146491.83

MWh fuel consumed for self-generation of electricity
0

MWh fuel consumed for self-generation of heat
1146491.83

MWh fuel consumed for self-generation of steam
<Not Applicable>

MWh fuel consumed for self-generation of cooling
<Not Applicable>

MWh fuel consumed for self-cogeneration or self-trigeneration
<Not Applicable>

Emission factor
0.346

Unit
kg CO2 per KWh

Emissions factor source
Base carbone ADEME

Comment

Fuels (excluding feedstocks)
Coke

Heating value
LHV (lower heating value)

Total fuel MWh consumed by the organization
2814643.53

MWh fuel consumed for self-generation of electricity

0

MWh fuel consumed for self-generation of heat
0

MWh fuel consumed for self-generation of steam
<Not Applicable>

MWh fuel consumed for self-generation of cooling
<Not Applicable>

MWh fuel consumed for self-cogeneration or self-trigeneration
<Not Applicable>

Emission factor
0.389

Unit
kg CO2 per KWh

Emissions factor source
Base carbone ADEME

Comment
Process: reductant for carbo-reduction of ores

C9. Additional metrics

C9.1

(C9.1) Provide any additional climate-related metrics relevant to your business.

Description
Other, please specify (t(CO2) / t (product ready to sell) evolution ratio)

Metric value
0.86

Metric numerator
t(CO2) / t(product ready to sell) for 2019

Metric denominator (intensity metric only)
t(CO2) / t(product ready to sell) for 2018

% change from previous year
14

Direction of change
Decreased

Please explain
In 2019, the Eramet Group continued its efforts to decarbonation of the energy mix through :
- the power modulation of the SLN oil-fired power station in order to absorb peaks in New Caledonia's production of electricity from renewable sources.
- the installation of solar panels on the Les Ancizes site contributing to the development of renewable energies

Description
Other, please specify (%sites with consumption >200GWh/year certified ISO 50001)

Metric value
0.53

Metric numerator
Quantity of sites certified (9)

Metric denominator (intensity metric only)
Sites with energy consumption > 200GWh/y (17)

% change from previous year
80

Direction of change
Increased

Please explain
Eramet has set itself the objective of rolling out an ISO 50001 energy management system by 2020 across all sites using more than 200 GWh (~90% of the Group's total energy consumption).

C-MM9.3a

(C-MM9.3a) Provide details on the commodities relevant to the mining production activities of your organization.

Output product
Other non-ferrous metal mining (Please specify) (Manganese ore and sinter production)

Capacity, metric tons
4338000

Production, metric tons
3983000

Production, copper-equivalent units (metric tons)

Scope 1 emissions
22996.176

Scope 2 emissions
185.856

Scope 2 emissions approach
Location-based

Pricing methodology for copper-equivalent figure
copper equivalent is not relevant for manganese ore and sinter production

Comment
Manganese ore and sinter production

Output product
Other mining (Please specify) (mineral sands)

Capacity, metric tons
774000

Production, metric tons
600854

Production, copper-equivalent units (metric tons)
<Not Applicable>

Scope 1 emissions
115164.805

Scope 2 emissions
399.123

Scope 2 emissions approach
Location-based

Pricing methodology for copper-equivalent figure
<Not Applicable>

Comment
mineral sands

Output product
Nickel

Capacity, metric tons
6000000

Production, metric tons
3229245

Production, copper-equivalent units (metric tons)

Scope 1 emissions
41442.336

Scope 2 emissions
20719.509

Scope 2 emissions approach
Location-based

Pricing methodology for copper-equivalent figure
copper equivalent is not relevant for nickel

Comment
Nickel

C-MM9.3b

(C-MM9.3b) Provide details on the commodities relevant to the metals production activities of your organization.

Output product
Nickel

Capacity (metric tons)
60000

Production (metric tons)
47351

Annual production in copper-equivalent units (thousand tons)

Scope 1 emissions (metric tons CO2e)
2009801.608

Scope 2 emissions (metric tons CO2e)
6004.472

Scope 2 emissions approach
Location-based

Pricing methodology for-copper equivalent figure
copper equivalent is not relevant for nickel

Comment
Nickel is primarily used to make many special steels in the broadest sense (stainless steels, steel alloys and superalloys), which together account for roughly 85% of nickel uses. Its rich and varied properties also lend it to smaller-volume uses, such as electroplating, the process of forming a thin coherent metal coating using electrochemistry on valves or auto parts. Another booming application for nickel is its use in rechargeable batteries and in particular for electric vehicles. Finally, nickel also has catalytic properties. In 2019, global primary nickel consumption, estimated at around 2.4 million tonnes, was distributed as follows:
• stainless steel: 68%;
• nickel-based alloys: 10%;
• electroplating: 7%;
• casting and alloy steels: 6%;
• batteries: 7%;
• other uses (including catalysis and pigments): 2%.

Output product
Other non-ferrous metals (Please specify) (Mineral sands)

Capacity (metric tons)
325000

Production (metric tons)
260176

Annual production in copper-equivalent units (thousand tons)

Scope 1 emissions (metric tons CO2e)
248975.168

Scope 2 emissions (metric tons CO2e)
3052.404

Scope 2 emissions approach
Location-based

Pricing methodology for-copper equivalent figure
copper equivalent is not relevant for pig iron and titane dioxyde

Comment
Mineral sands are mineral raw materials that contain heavy minerals concentrated over time in an alluvial environment (rivers, coasts and lakes) or a windy environment (dunes).
Mineral sand deposits are thus old beaches, dunes or riverbeds. These sands contain titaniferous ore deposits, mainly found in the form of ilmenite ($FeTiO_3$), but also rutile (TiO_2), and to a lesser extent leucoxene (ilmenite partially altered into rutile) and zircon ($ZrSiO_4$).
The levels of these ores in the sand are often in the order of a few percent. One of the most economical methods of extraction entails using a floating dredge in a basin. However, this is only possible if the sands contain very few clay particles, which is the case at the TiZir mine in Senegal (Grande Côte Operations – GCO). Otherwise, more conventional mining methods (excavators and dumpers or bull dozers) are used – for rocky titaniferous ore, for example.
Ilmenite is the main titaniferous ore in terms of tonnage, but its titanium dioxide (TiO_2) content is relatively low. As a result, it is often enriched by transformation into syntheticrutile or TiO_2 slag, as at the TiZir Titanium and Iron (TTI) plant in Norway, before being used mainly by pigment producers.

Output product
Other non-ferrous metals (Please specify) (Steel alloys)

Capacity (metric tons)

Production (metric tons)

Annual production in copper-equivalent units (thousand tons)

Scope 1 emissions (metric tons CO2e)

Scope 2 emissions (metric tons CO2e)

Scope 2 emissions approach
Location-based

Pricing methodology for-copper equivalent figure
We do not communicate about this segment production.

Comment
We do not communicate about this segment production.
The High Performance Alloys Division develops its metallurgical business upstream of strategic industries including aeronautics, space, energy and defence. It operates through two main subsidiaries: Aubert & Duval and Erasteel, two renowned experts in the design, development, transformation and manufacture of cuttingedge metallurgical

solutions. This positioning is based on:
• a unique industrial set-up in France and Europe;
the capacity to secure the supply of critical materials such as special steels, superalloys and titanium to French and European industries;
• an integrated offer, from developing the materials to transforming them into finished products;
• R&D management, an essential part of meeting future challenges in materials' design and transformation, combined with historic metallurgical know-how recognised worldwide.

Output product
Other non-ferrous metals (Please specify) (Manganese ore & alloys)

Capacity (metric tons)
4800000

Production (metric tons)
4800000

Annual production in copper-equivalent units (thousand tons)

Scope 1 emissions (metric tons CO2e)
1261436.711

Scope 2 emissions (metric tons CO2e)
175358.738

Scope 2 emissions approach
Location-based

Pricing methodology for-copper equivalent figure
copper equivalent is not relevant for manganese alloys

Comment
Over 90% of the world's manganese is used for the production of steel. All steel producers use manganese in their production processes – an average of 6-7 kg per tonne of steel. Manganese is used in steel in the form of manganese metal (pure manganese) or as an alloy (ferromanganese or silicomanganese) with an average content of 70% manganese: 1.8 tonnes of ore with roughly 40% manganese content are required to produce one tonne of alloy.
Manganese is mostly used in manganese alloys and accounts for a very small portion of the cost of steel production. It is mainly used as an alloying element to improve hardness, abrasion resistance, elasticity and surface condition for rolling. As an alloy element, it cannot be replaced by other non-ferrous metals. It is also used for deoxidation and desulphurisation during production.
Other applications :
• Batteries: mainly alkaline batteries. A less significant application is in saltwater batteries, which have an inferior performance. Manganese derivatives are also used in rechargeable lithium batteries;
• Ferrites: used in electronic circuits;
• Agriculture: fertiliser and animal feed;
• Various chemicals: pigments, fine chemicals;
• Other metallurgical uses: mainly as a hardening agent for aluminium (beverage cans).

C-CE9.6/C-CG9.6/C-CH9.6/C-CN9.6/C-CO9.6/C-EU9.6/C-MM9.6/C-OG9.6/C-RE9.6/C-ST9.6/C-TO9.6/C-TS9.6

(C-CE9.6/C-CG9.6/C-CH9.6/C-CN9.6/C-CO9.6/C-EU9.6/C-MM9.6/C-OG9.6/C-RE9.6/C-ST9.6/C-TO9.6/C-TS9.6) Does your organization invest in research and development (R&D) of low-carbon products or services related to your sector activities?

	Investment in low-carbon R&D	Comment
Row 1	Yes	The ReLieVe project (which stands for Recycling of Li-ion batteries for Electric Vehicles), which is a collaborative research and innovation project whose goal is to develop an innovative process for recycling lithium-ion batteries used in electric vehicles. The idea is also to produce these new batteries in Europe and to build an industrial sector integrated from end to end—from the collection and dismantlement of the batteries at the end of their useful life, to the recycling of their components, to the production of new electrode materials. ReLieVe is developing a large-scale version of an innovative, "closed-loop" process for recycling lithium-ion batteries. In contrast to more conventional processes, this one will recycle metals while retaining their physical and chemical qualities, so that they may be re-used in the design of a new lithium-ion battery cathod. From an environmental perspective, the challenge is two-fold: first, to develop a process that has the smallest possible environmental impact—and carbon impact, in particular—and second, to maximize the number of lithium-ion components that can be recycled.

C-MM9.6a

(C-MM9.6a) Provide details of your organization's investments in low-carbon R&D for metals and mining production activities over the last three years.

Technology area	Stage of development in the reporting year	Average % of total R&D investment over the last 3 years	R&D investment figure in the reporting year (optional)	Comment
Other, please specify (Process and energy recovery)	Pilot demonstration	≤20%	260000	The main project here consists to produce electricity from furnace off-gas and use sensible heat from electricity production for metallurgical purposes.
Other, please specify (Non-fossil raw materials)	Applied research and development	≤20%	50000	Several cooperation projects with research institutes to develop biomass based reductant well suited for Mn-alloy production. Bio carbon project: on going R&D with 2 partners regarding non fossil coke supply. The ambition is to test on a furnace in 2021

C10. Verification

C10.1

(C10.1) Indicate the verification/assurance status that applies to your reported emissions.

	Verification/assurance status
Scope 1	Third-party verification or assurance process in place
Scope 2 (location-based or market-based)	Third-party verification or assurance process in place
Scope 3	No third-party verification or assurance

C10.1a

(C10.1a) Provide further details of the verification/assurance undertaken for your Scope 1 emissions, and attach the relevant statements.

Verification or assurance cycle in place
Annual process

Status in the current reporting year
Complete

Type of verification or assurance
Limited assurance

Attach the statement

Page/ section reference
6.6 REPORT BY THE STATUTORY AUDITOR , APPOINTED AS INDEPENDENT THIRD PARTY, ON THE CONSOLIDATED NON- FINANCIAL STATEMENT - page 338 to 340

Relevant standard
ISAE3000

Proportion of reported emissions verified (%)
18

C10.1b

(C10.1b) Provide further details of the verification/assurance undertaken for your Scope 2 emissions and attach the relevant statements.

Scope 2 approach
Scope 2 location-based

Verification or assurance cycle in place
Annual process

Status in the current reporting year
Complete

Type of verification or assurance
Limited assurance

Attach the statement

Page/ section reference
6.6 REPORT BY THE STATUTORY AUDITOR , APPOINTED AS INDEPENDENT THIRD PARTY, ON THE CONSOLIDATED NON- FINANCIAL STATEMENT - page 338 to 340

Relevant standard
ISAE3000

Proportion of reported emissions verified (%)
18

C10.2

(C10.2) Do you verify any climate-related information reported in your CDP disclosure other than the emissions figures reported in C6.1, C6.3, and C6.5?
Yes

C10.2a

(C10.2a) Which data points within your CDP disclosure have been verified, and which verification standards were used?

Disclosure module verification relates to	Data verified	Verification standard	Please explain
C4. Targets and performance	Year on year change in emissions (Scope 1 and 2)	ISAE3000	In addition to limited assurance over our GHG emission, the third party provided limited assurance regarding our : emission intensity, emissions from use and processing of ore and products, energy use.
C4. Targets and performance	Year on year emissions intensity figure	ISAE3000	All variations have been explained and checked by a third party.
C6. Emissions data	Year on year change in emissions (Scope 1 and 2)	ISAE3000 EU-ETS	In addition to limited assurance over our GHG emission, the third party provided limited assurance regarding our : emission intensity, emissions from use and processing of ore and products, energy use.
C8. Energy	Other, please specify (specific cost of energies split by plant and energy)	Non-financial performance statement EU-ETS	In addition to limited assurance over our GHG emission, the third party provided reasonnable assurance over our Sustainability Report which included : emission intensity, emissions from use and processing of ore and products, energy use.
C9. Additional metrics	Other, please specify (energy use)	ISAE3000 EU-ETS	In addition to limited assurance over our GHG emission, the third party provided limited assurance regarding our : emission intensity, emissions from use and processing of ore and products, energy use.
C2. Risks and opportunities	Other, please specify	ISAE3000	A third party has checked the identified risks and opportunities

C11. Carbon pricing

C11.1

(C11.1) Are any of your operations or activities regulated by a carbon pricing system (i.e. ETS, Cap & Trade or Carbon Tax)?

Yes

C11.1a

(C11.1a) Select the carbon pricing regulation(s) which impacts your operations.

EU ETS

France carbon tax

C11.1b

(C11.1b) Complete the following table for each of the emissions trading schemes you are regulated by.

EU ETS

% of Scope 1 emissions covered by the ETS

24

% of Scope 2 emissions covered by the ETS

17

Period start date

January 1 2019

Period end date

December 31 2019

Allowances allocated

Allowances purchased

Verified Scope 1 emissions in metric tons CO2e

0

Verified Scope 2 emissions in metric tons CO2e

0

Details of ownership

Facilities we own and operate

Comment

We set the data at zero because we do not communicate details about our free quotas allocation under the ETS.

C11.1c

(C11.1c) Complete the following table for each of the tax systems you are regulated by.

France carbon tax

Period start date
January 1 2019

Period end date
December 31 2019

% of total Scope 1 emissions covered by tax
100

Total cost of tax paid
571630

Comment

C11.1d

(C11.1d) What is your strategy for complying with the systems you are regulated by or anticipate being regulated by?

We recognise both the risks and opportunities posed by carbon pricing schemes and we continue to ensure our strategy minimises the risks and maximise opportunities. Internal carbon pricing (30 EUR/t) is one of the tools we use to consider the impacts of climate change in our strategy. Our investment evaluation process has incorporated the mandatory use of our internal carbon pricing across all operations and projects.

Our operations that participate in the EU ETS are required to maintain an accurate emission and energy inventory through consistent data gathering and emissions reporting; provide timely, accurate and detailed data books for internal and external verifier review; understand the regulator's perspective and maintain awareness of future scheme requirements through government interaction and legal compliance registers; identify, evaluate and implement all suitable projects to reduce GHG emissions.

To comply with the EU-UTS system, the ERAMET group is working to reduce its emissions and its energy consumption, notably by following a plan to obtain the ISO 50001 certification for all significant energy consuming sites.

In 2018, the Group conducted a review to define a target for reducing scopes 1 and 2 CO2 emissions, based in particular on identified technical and organisational levers. This work has led the Group to set a significant reduction target for the tonnes of CO2 per tonne of production,i.e. for how carbon-intensive the Group's production activities are:

- Group target for 2023 vs. 2018 = -26% tCO2/t outgoing product (2)
- Impact of energy efficiency levers and decarbonisation of the energy consumed = -9,5% (1) tCO2/t outgoing product
- Impact of the business mix effect related to the Group's strategic choice to develop its mining activity, which is lower in emissions than the Group's processing activities (3)

Eramet continues to reflect on defining a longer-term ambition, which implies transformations of processes and must necessarily be based on new R&D and Innovation levers.

Notes :

(1) With the level of mining and processing activity in the year of reference (2018).

(2)Tonne of product leaving the sites: ingots, powder, ores, etc.

(3) Mining activity is about 80 times lower in emissions per tonne of outgoing product than the Group's other activities.

C11.2

(C11.2) Has your organization originated or purchased any project-based carbon credits within the reporting period?
No

C11.3

(C11.3) Does your organization use an internal price on carbon?
Yes

C11.3a

(C11.3a) Provide details of how your organization uses an internal price on carbon.

Objective for implementing an internal carbon price
Stakeholder expectations
Change internal behavior
Drive energy efficiency
Drive low-carbon investment
Stress test investments
Identify and seize low-carbon opportunities
Supplier engagement
Other, please specify (The Group is preparing for the potential emergence of such a CO2 coordinated market.)

GHG Scope
Scope 1
Scope 2

Application
The internal price is systematically applied for the following types of projects:
- Strategy scenarios evaluation
- Projects of modification of the production capacities (furnaces, mining engines, etc.)
- Logistics projects (locomotives, trucks, etc.)
- Projects that substantially change the way energy is used (savings, change of energy source...)

Actual price(s) used (Currency /metric ton)
30

Variance of price(s) used
No variance, same price at group level

Type of internal carbon price
Shadow price

Impact & implication
There is currently no globally applicable carbon market or price, only fragmented and uncoordinated regional systems. The Group is preparing for the potential emergence of such a market by experimenting with an internal price for its investment projects, the evaluation of its strategic options, on the basis of 30 EUR per tonne of CO2. This value reflects a conviction that markets are moving towards a long-term price that is significantly higher (around 50%) than the European regional spot price as at the end of 2019.
The consequence of this choice, throughout the entire Group and independently of the regions with an established carbon market and price, is a shift towards technological solutions that emit less carbon. In addition, the implementation of this policy of applying an internal Group carbon price helps to raise awareness of the climate challenge among all Eramet employees.
Exemple of project :
Eramet has implemented the internal price of CO2 for a solar farm + battery project (12MW) in Senegal to produce renewable electricity instead of our fuel oil fired power plant. The profitability of the project is improved due to internal carbon price. With this project, around 20% of the electricity concumed from the current fuel oil power plant would come from renewable solar farm. The expected impact is a reduction of around 20ktCO2/year.

C12. Engagement

C12.1

(C12.1) Do you engage with your value chain on climate-related issues?
Yes, our suppliers
Yes, our customers
Yes, other partners in the value chain

C12.1a

(C12.1a) Provide details of your climate-related supplier engagement strategy.

Type of engagement
Engagement & incentivization (changing supplier behavior)

Details of engagement
Other, please specify (Run a campaign to encourage innovation to reduce climate impacts on products and services)

% of suppliers by number
0

% total procurement spend (direct and indirect)
0

% of supplier-related Scope 3 emissions as reported in C6.5
0

Rationale for the coverage of your engagement
Eramet wants to reduce the carbon impact related to the transportation of its products.

Impact of engagement, including measures of success
Ships with electric batteries, electric port infrastructures, sea transport with lower carbon emissions… all of this doesn't belong to the future anymore, but well and truly to the present.

This summer, Eramet Norway received financial support from Enova – a company owned by the Norwegian government with the purpose of contributing to reduced greenhouse gas emissions, development of energy and climate technology and a strengthened security of supply – for its onshore power projects at the Group's Norwegian plants.

This project encompasses the three manganese alloy sites in Porsgrunn, Kvinesdal and Sauda, as well as TTI in Tyssedal. The idea is to offer access to onshore electric power to cargo vessels – especially to Eramet Norway's transport partners – and thus to contribute to the reduction of carbon emissions, particle emissions and noise generated by port activities.

The conversion to electricity has the wind at its back: it's now the turn of Arriva, the Group's key partner in terms of sea transport, to receive support from Enova. Arriva stood out for its electric battery and excavator cargo ship project. This ship of the future will indeed allow to reduce fuel consumption by 400 tons which represents a 20% reduction of the traditional consumption, and to reduce carbon emissions by 1,200 tons – the equivalent of emissions from 450 cars!

Enova was interested by the ambition of the Eramet-Arriva duo: Eramet's electric infrastructure projects are indeed well-matched with Arriva's new cargo ships, which will be able to use the plants' electric energy once they're docked, still without emissions and with a reduced level of noise! Eramet's objective? To offer an eco-responsible alternative to current means of sea transport, and to position itself as a major player in the industry's energy transition. These two projects, which should be fulfilled by the end of 2021, could revolutionize traditional sea transport and pave the way for future standards of sustainable operations.

Comment

C12.1b

(C12.1b) Give details of your climate-related engagement strategy with your customers.

Type of engagement
Collaboration & innovation

Details of engagement
Other, please specify (ACT Iron & Steel initiative)

% of customers by number
95

% of customer - related Scope 3 emissions as reported in C6.5
99

Portfolio coverage (total or outstanding)
<Not Applicable>

Please explain the rationale for selecting this group of customers and scope of engagement
Eramet contributes to the ACT Iron & Steel initiative as member of the technical working group. By contributing to the creation of the ACT Iron & Steel methodology, Eramet wants to help the actors of the iron & steel value chain to evaluate their level of adaptation and shifting toward low carbon activities.

Impact of engagement, including measures of success
The developement of the ACT Iron & Steel methodology and tools will be used to evaluate companies of the sector on their level of low carbon transition.

C12.1d

(C12.1d) Give details of your climate-related engagement strategy with other partners in the value chain.

Eramet Norway's R&D department collaborates with outstanding research organisations:
Eramet IDEAS (the group's technology centre) and externally with institutions like SINTEF and NTNU in Trondheim. In addition, Eramet Norway is actively involved in projects together with Teknova AS, Elkem Technology, NORCE and Ferrolegeringsindustriens Forskningsforening (FFF).
SINTEF is a broad and multidisciplinary research organisation with international core expertise in
technology, science, medicine and social science. SINTEF conducts contract research as an R&D partner for industry and administration and is amongst the four biggest contract research organisations in Europe.
NTNU (Norwegian University of Science and Technology) is the country's largest and leading
supplier of engineers, covering areas of technology that range from nanotechnology and IT, to petroleum technology and ship design. NTNU, which has its own research environments, works together with some of the country's most important technological and industrial companies.
Teknova AS is a technology and science research institute. Its operations are aimed at contract research, technological development and innovation. The institute aims to develop knowledge and technology, and to create value for its users, society and its owners.
The Norwegian Ferroalloy Producers Research Association (FFF) was founded by the Norwegian
ferroalloy industry in order to collaborate on research in ferroalloy processes and products. The aim of the FFF is to maintain the position of the Norwegian ferroalloy industry at the forefront in ferroalloy production and of electrometallurgical technology. Its largest member companies are Eramet Norway and Elkem, and together they contribute something like 80 percent of the organisation's subscription funding.

C12.3

(C12.3) Do you engage in activities that could either directly or indirectly influence public policy on climate-related issues through any of the following?
Direct engagement with policy makers
Trade associations
Other

C12.3a

(C12.3a) On what issues have you been engaging directly with policy makers?

Focus of legislation	Corporate position	Details of engagement	Proposed legislative solution
Other, please specify (Implement an European border carbon tax)	Support with minor exceptions	Engaging in a dialogue with several actors: 1. Trade associations, as a member of those: - At a European level: Euroalliages and Eurométaux. - At a French level: A3M and UNIDEN (Union des industries utilisatrices d'énergie). 2. French institutional actors at our demand: with for example, the Ministry of Economy (DGE).	None
Adaptation or resilience	Support	An Eramet roadmap has been written and has been presented to policy makers.	None

C12.3b

(C12.3b) Are you on the board of any trade associations or do you provide funding beyond membership?
Yes

C12.3c

(C12.3c) Enter the details of those trade associations that are likely to take a position on climate change legislation.

Trade association
A3M

Is your position on climate change consistent with theirs?
Consistent

Please explain the trade association's position
- Maintaining an emission factor at regional level which does not create distortion of competition within the EU
- The protection of all sectors of the metallurgical industry exposed to the risk of carbon leakage
- Conditions for obtaining aid which take more account of the constraints and efforts made by businesses
- A carbon inclusion mechanism (MIC) at the EU's borders can be an effective mechanism if it works in addition to the existing protection mechanism, consisting of free allowance allocations and compensation for the indirect costs of CO2.

How have you influenced, or are you attempting to influence their position?
We have participated and conduct must of the discussions with the other members as Eramet
Chairman and CEO is chairing the French "CSF Mines and Metallurgy" founded by the French Ministry of Economy and Finance. The CSF is a multi-lateral working platform gathering industries, governmental bodies, trade associations, and unions.

Trade association
Trade association Cobalt Institute and Nickel Institute

Is your position on climate change consistent with theirs?
Consistent

Please explain the trade association's position
The Cobalt and Nickel Institute support Eurometaux's position on climate change that was published in May 2018.
- Eurometaux is committed to further innovation and constant reduction of greenhouse gas emissions in our production processes.
- Eurometaux stresses the continued importance of reciprocal commitments to tackling climate change from regions beyond Europe.
- A global approach is needed to limit climate change to below 2ºC.
- Shared international commitments would ease the regulatory burden on key European industries such as metals and facilitate the EU's own transition towards a low-carbon economy.
- As metals are 'price-taker' globally-priced commodities, European companies cannot pass any additional regulatory costs onto consumers and remain completive.
- Reciprocal climate change commitments from comparable industries are thus essential to establish a level playing field between EU and non-EU producers.

How have you influenced, or are you attempting to influence their position?
As a member of Eurometaux (but not on the board), we have contributed to the discussions.

Trade association
Euroalliages

Is your position on climate change consistent with theirs?
Consistent

Please explain the trade association's position
- Euroalliages calls for a detailed assessment of the electrointensive industries that are constantly facing unfair trade practices and increasing carbon leakage pressure due to weaker (or inexistent) climate policies in third countries.
- Euroalliages also calls for a fair redistribution of efforts and timing for all the sectors that need to further decarbonize (i.e. agriculture, transport, etc).
- As part of key strategic values chains, Euroalliages express its concern about the on-going COVID-19 crisis and its impacts on the energy and climate policies. We therefore call for a full and robust ex-ante impact assessment that shows all the scenarios and regulation needed to support such an ambitious acceleration of the decarbonisation with particular consideration to regions, industries and communities highly challenged by the costs of climate change policies.
- Euroalliages highly recommend the European Commission to present the results of the modelling with all the different scenarios before unveiling a new legislative proposal. We believe that, if new ambitious targets are to be set, a debate with relevant stakeholders should take place before new regulation is adopted.

How have you influenced, or are you attempting to influence their position?
As a member of the board and of the Energy and climate committe, we have participated in the discussions with the other members and writing of position papers. Moreover, we have suggested names of political persons for Euroalliages to contact. Also, we have directly participated in the writing of Euroalliage roadmap on decarbonation subject, by giving examples of action that are being done in some of our industrial sites.

Trade association
A3M

Is your position on climate change consistent with theirs?
Consistent

Please explain the trade association's position
- Maintaining an emission factor at regional level which does not create distortion of competition within the EU
- The protection of all sectors of the metallurgical industry exposed to the risk of carbon leakage
- Conditions for obtaining aid which take more account of the constraints and efforts made by businesses
- A carbon inclusion mechanism (MIC) at the EU's borders can be an effective mechanism if it works in addition to the existing protection mechanism, consisting of free allowance allocations and compensation for the indirect costs of CO2.

How have you influenced, or are you attempting to influence their position?
We have participated and conduct must of the discussions with the other members as Eramet
Chairman and CEO is chairing the French "CSF Mines and Metallurgy" founded by the French Ministry of Economy and Finance. The CSF is a multi-lateral working platform gathering industries, governmental bodies, trade associations, and unions.

C12.3e

(C12.3e) Provide details of the other engagement activities that you undertake.

Eramet has engaged in activities in order to increase the political awareness of the impacts on critical metals demand changes as a consequence of climate change and economy decarbonization. Eramet Chairman & CEO is indeed chairing the French CSF "Mines - Metallurgy" founded by the French Ministry of Economy and Finance. The CSF is a multi-lateral working platform gathering industries, governmental bodies, trade associations, and unions. One of the 3 main focus is metal demand evolution related to climate change and subsequently electric vehicles development. Workshops have been held in 2018 and first conclusions should be made available to political sphere in 2019. One of the workshop of the CSF is also directly focused on R&D actions in favour of the reduction of greenhouse gas emissions of CO2 for metallurgical sector.

C12.3f

(C12.3f) What processes do you have in place to ensure that all of your direct and indirect activities that influence policy are consistent with your overall climate change strategy?

Eramet is member of the steering committee of CSF and follow up the CSF projects.

Concerning the workshop of the reduction of greenhouse gas emissions, the target of the project is to:

- Demonstrate on the ArcelorMittal site of Dunkirk, on the scale of an industrial pilot, a technology of optimal capture of CO2, industrial gases, the DMXTM process.

- Study the feasibility of developing in Dunkirk, an intermediate CO2 storage hub for shipping to offshore CO2 storage areas in the North Sea

The Dunkirk area becoming an experimental territory for CO2 reduction, will benefit our own facilities located in this same area and it is consistent with our climate change strategy.

Concerning the subject of the electric vehicles development, Eramet pilots directly a Workshop related to the development of integrated recycling network for lithium batteries. The lithium is one of the metals of energetic transition on which Eramet strategy is based.

C12.4

(C12.4) Have you published information about your organization's response to climate change and GHG emissions performance for this reporting year in places other than in your CDP response? If so, please attach the publication(s).

Publication
In mainstream reports

Status
Complete

Attach the document

Page/Section reference
p273 to p280 chapter : "fight against climate change"

Content elements
Governance
Strategy
Risks & opportunities
Emissions figures
Emission targets
Other metrics
Other, please specify (Decarbonization, support customers)

Comment

C15. Signoff

C-FI

(C-FI) Use this field to provide any additional information or context that you feel is relevant to your organization's response. Please note that this field is optional and is not scored.

C15.1

(C15.1) Provide details for the person that has signed off (approved) your CDP climate change response.

	Job title	Corresponding job category
Row 1	Christel Bories Chairman and CEO of Eramet	Chief Executive Officer (CEO)

Submit your response

In which language are you submitting your response?

English

Please confirm how your response should be handled by CDP

	I am submitting to	Public or Non-Public Submission	Are you ready to submit the additional Supply Chain Questions?
I am submitting my response	Investors	Public	<Not Applicable>

Please confirm below

I have read and accept the applicable Terms