

**ASSESSMENT**

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# EMSTEEL Building Materials PJSC

## Second Party Opinion – Green Financing Framework Assigned SQS2 Sustainability Quality Score

### Summary

We have assigned an SQS2 Sustainability Quality Score (very good) to the Green Financing Framework of EMSTEEL Building Material PJSC (EMSTEEL) dated March 2025. EMSTEEL has established its use-of-proceeds framework with the aim of financing and refinancing projects across three eligible green categories - manufacture of steel, manufacture of cement and renewable energy. The framework is aligned with the four core components of the International Capital Market Association's (ICMA) Green Bond Principles (GBP) 2021 (including the June 2022 Appendix 1) and the Loan Market Association's, the Asia Pacific Loan Market Association's and the Loan Syndications & Trading Association's (LMA/APLMA/LSTA) Green Loan Principles (GLP) 2023. The framework also demonstrates a significant contribution to sustainability.

### Sustainability quality score

**SQS5**  
Weak

**SQS4**  
Intermediate

**SQS3**  
Good

**SQS2**  
Very good

**SQS1**  
Excellent

SQS2

#### Alignment with principles

USE OF PROCEEDS

**Overall alignment**

Not aligned

Partially aligned

Aligned

Best practices

FACTORS	ALIGNMENT
Use of proceeds	██████████ ▾
Evaluation and selection	██████████ ▾
Management of proceeds	██████████ ▾
Reporting	██████████ ▾

#### Contribution to sustainability

**Final contribution to sustainability**

Poor

Limited

Moderate

Significant

High

**Preliminary contribution to sustainability**

Relevance and magnitude ██████████ ▾

Additional considerations **No adjustment**

POINT-IN-TIME ASSESSMENT

## Scope

We have provided a Second Party Opinion (SPO) on the green credentials of EMSTEEL's green finance framework, including the framework's alignment with the ICMA's GBP 2021 (including the June 2022 Appendix 1). Under its framework, EMSTEEL plans to issue green finance instruments to finance projects across three green categories, as outlined in Appendix 3 of this report.

Our assessment is based on the last updated version of the framework received on 26 March 2025, and our opinion reflects our point-in-time assessment<sup>1</sup> of the details contained in this version of the framework, as well as other public and non-public information provided by the company.

We produced this SPO based on our [Assessment Framework: Second Party Opinions on Sustainable Debt](#), published in March 2025.

## Issuer profile

Based in Abu Dhabi, United Arab Emirates (UAE), EMSTEEL is a leading integrated steel and cement manufacturer in the Middle East serving regional and international markets, delivering to over 70 countries. The company's 16 production facilities are entirely located in the UAE with a capacity of approximately 3.5 million tons of steel and 4.6 million tons of cement per year. It is listed on the Abu Dhabi Stock Exchange and majority owned by Abu Dhabi Development Holding Company PJSC, one of the region's largest holding companies.

In line with the National Climate Change Plan of the UAE 2017-2050, EMSTEEL aims to achieve net zero greenhouse gas (GHG) emissions by 2050. The company's decarbonization strategy includes a promotion of green hydrogen and other alternative fuels and raw materials, carbon capture and renewable energy utilization measures in its steel and cement manufacturing processes. Its scope 1 and 2 GHG emissions are reported in alignment with the GHG Protocol.

## Strengths

- » The financed assets and activities will address sustainability challenges that are highly relevant for the issuer and the overall steel and cement sector.
- » The carbon intensity levels of the steel production processes are already lower than the most rigorous international standards, even when related scope 2 emissions are measured under the location-based approach.
- » The expected environmental impacts on climate change mitigation will be publicly reported via clear and quantifiable impact indicators.
- » The evaluation and selection process for eligible projects and assets is clearly defined and publicly disclosed in the framework.

## Challenges

- » The use of renewable energy certificates (RECs) might underestimate the actual carbon content of the electricity used in the steel production process.
- » The technical thresholds defined in the eligibility criteria for the manufacture of cement are only applicable by 2030, and carbon intensity levels are expected to be higher prior to that year.
- » The decarbonization of the cement production process post 2030 highly relies on carbon capture, utilization and storage (CCUS) measures, which are subject to uncertain future technological developments.

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## Alignment with principles

EMSTEEL's green financing framework is aligned with the four core components of the ICMA's GBP 2021 (including the June 2022 Appendix 1) and the LMA/APLMA/LSTA's GLP 2023. For a summary alignment with principles scorecard, please see Appendix 1.

- |   |   |
|---|---|
| <input checked="" type="checkbox"/> Green Bond Principles (GBP)       | <input checked="" type="checkbox"/> Green Loan Principles (GLP)       |
| <input type="checkbox"/> Social Bond Principles (SBP)                 | <input type="checkbox"/> Social Loan Principles (SLP)                 |
| <input type="checkbox"/> Sustainability-Linked Bond Principles (SLBP) | <input type="checkbox"/> Sustainability Linked Loan Principles (SLLP) |

## Use of proceeds



### Clarity of the eligible categories – BEST PRACTICES

EMSTEEL has clearly and comprehensively communicated the nature of expenditures eligible under its framework. The types of financing can include capital expenditure, operational expenditure and the current value of fixed assets. The definition of eligibility and exclusion criteria are clearly defined. All financed projects and assets will be located in the United Arab Emirates.

### Clarity of the environmental or social objectives – BEST PRACTICES

EMSTEEL has clearly outlined the environmental objective of climate change mitigation for all categories, which is relevant and coherent with recognized national and international standards, including the United Nations' (UN) Sustainable Development Goals (SDGs) and the UAE Climate Change Plan.

### Clarity of expected benefits – ALIGNED

EMSTEEL has identified clear expected environmental benefits for all categories and these benefits are relevant based on the projects likely to be financed under each category. The benefits are measurable and have clearly defined thresholds. The estimated share of refinancing will not be communicated to investors prior to issuance, but only after issuance in the allocation report. Capex and opex will have a maximum lookback period of three years, while assets will qualify with no limitation.

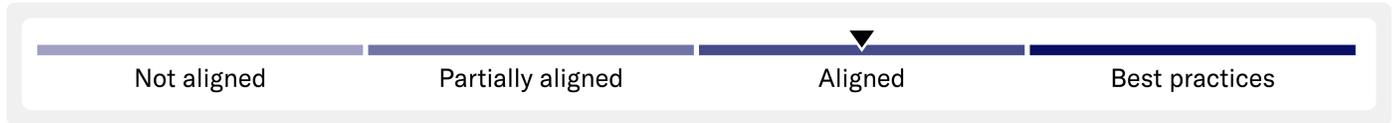
## Process for project evaluation and selection



### Transparency and clarity of the process for defining and monitoring eligible projects – BEST PRACTICES

EMSTEEL's decision-making process for the evaluation and selection of projects is clear and structured, and outlined in its framework which will be publicly available. The company has established a Green Finance Committee formed by members of sustainability, finance, project management, legal and other relevant business teams. This committee is responsible for selecting, evaluating and monitoring eligible projects, as well as overseeing the allocation of the proceeds. The compliance with the eligibility criteria will be reviewed at least annually. The monitoring of continued compliance will continue throughout the lifetime of any outstanding instrument, which is considered best market practice. In case of non-compliance the Green Finance committee will reallocate the funds to other eligible projects. The process to identify and manage environmental and social risks is disclosed in the company's public reporting including its sustainability report and the green finance framework. For example, the company carried out 45 environmental inspections of its facilities in 2024.

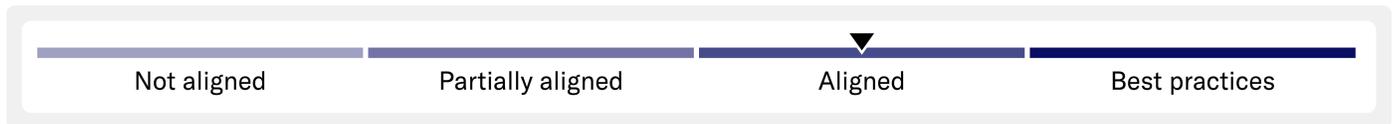
**Management of proceeds**



**Allocation and tracking of proceeds – ALIGNED**

EMSTEEL has clearly defined the process for the allocation and tracking of proceeds in its framework. The proceeds will be allocated in a subaccount tracked by the finance department. EMSTEEL will track the balances to ensure sufficient funds are available to match allocation to eligible projects on an annual basis. The allocation period can be up to 36 month and thereby beyond the 24 months that are considered best market practice. Pending full allocation, unallocated net proceeds from the green finance Instruments will be managed in accordance with EMSTEEL’s treasury management policy and may be used for treasury purposes detailed in the framework.

**Reporting**



**Reporting transparency – ALIGNED**

EMSTEEL has committed to provide public annual reports on the allocation and impact of the funds until their full allocation or until maturity, whichever occurs later, and on a timely basis in case of material developments, which is in line with best practices. The reports will be publicly available on the company’s website and will cover relevant information about the allocation of proceeds and the expected sustainable benefits of the projects. The methodology and assumptions for calculating the environmental benefits will be available on EMSTEEL’s website. The company’s auditor will provide an independent assessment of the allocation report but not necessarily of the impact report.

**Contribution to sustainability**

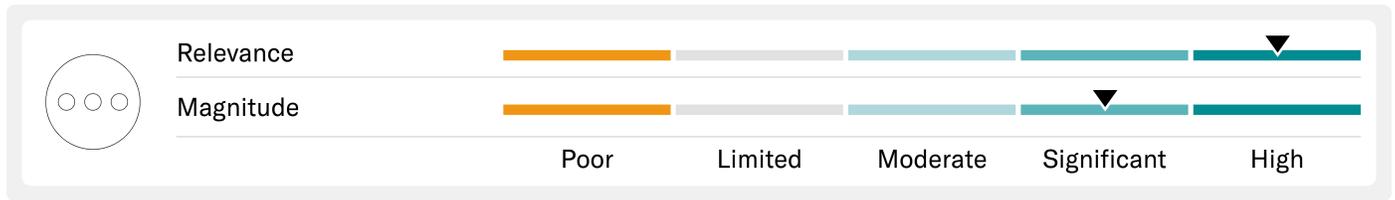
The framework demonstrates a significant overall contribution to sustainability. This reflects a preliminary contribution to sustainability score of significant, based on the relevance and magnitude of the eligible project categories, and we have not made an adjustment to the preliminary score based on additional contribution to sustainability considerations.



**Preliminary contribution to sustainability**

The preliminary contribution to sustainability is significant, based on the relevance and magnitude of the eligible project categories. Based on information provided by the issuer, the vast majority of proceeds from forthcoming issuances will be allocated to the manufacturing of steel. We have, therefore, assigned a higher weight to that category upon consolidating the overall structure's contribution to sustainability. A detailed assessment by eligible category has been provided below.

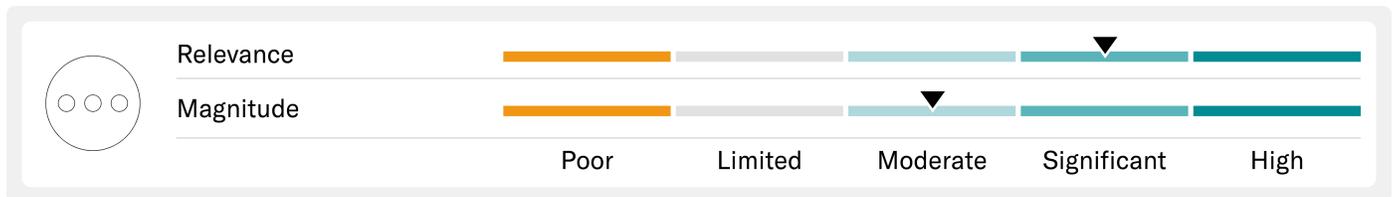
**Manufacture of Steel**



The decarbonization of the steel production process via the financing of low carbon electric arc furnace (EAF) high alloy steel and hot metal is highly relevant for EMSTEEL and the steel manufacturing sector overall. Steel production is an energy intensive process and the sector is responsible for approximately 2.8 gigatons of CO<sub>2</sub> emissions per year, which equated to approximately 7% of global CO<sub>2</sub> emissions in 2023<sup>2</sup>. Future demand for steel is expected to further increase to approximately 1.3 times of today's level<sup>3</sup>, driven for example by the global automotive industry's transition towards electric vehicles or large infrastructure projects in the Middle East. At the same time, the potential to further reduce GHG emissions via the operational optimization of blast furnaces is limited, so that the sector will need to transition to alternative production methods, including increased electrification and the deployment of green hydrogen. The production of steel via EAF has the potential to materially reduce GHG emissions to 10%-20% of conventional production with blast furnaces<sup>4</sup>, especially when the required electricity comes from renewable sources. For EMSTEEL, CO<sub>2</sub> emissions from the production of steel make up roughly half of the company's total GHG footprint and approximately 80% of its electricity consumption, evidencing the need to address the transition of steel production in the pursuit to become net zero by 2050 in line with the UAE's Strategy 2050.

The magnitude of the positive impact created via the decarbonization of the steel production process via assets and activities financed under this category is significant. For the production of hot metal and EAF high alloy and carbon steel, EMSTEEL commits to adhere to the applicable requirements of the EU Taxonomy, which is a rigorous and internationally recognized standard. In practice, the issuer shared confidential information to demonstrate that they have achieved carbon intensity levels substantially below its defined thresholds and below the levels of many peers and the overall sector for the production of EAF high alloys and carbon steel in 2023. This was due to the high share of renewable energy in the electricity mix. In addition, the defined thresholds are in line with the International Energy Agency's (IEA) net-zero scenario to limit global temperature increase to maximum 1.5°C above preindustrial levels, in line with the Paris Agreement. The company largely accounts for the share of renewable energy consumed by using electricity from the local grid and purchasing RECs from the local power producer. While acknowledging that direct consumption of renewable energy is at times not feasible, we flag that the amounts of actual renewable energy consumed can be overstated substantially via the acquisition of RECs. However, the issuer has shared with us the carbon intensity levels measured applying the location-based approach on a private basis and without the underlying assumptions. The privately submitted levels are still below the levels required for alignment with the applicable EU Taxonomy criteria, and thereby considered to be in line with the best available standards. The ratio of scrap metal input in EMSTEEL's steel production is rather low at approximately 10% across all production plants and offers additional potential for CO emissions savings going forward. Parts of the proceeds will be allocated to carbon capture units, which are currently mainly under development for EMSTEEL's growth steel projects, aiming to capture minimum 500 kilotons per year upon completion. In cooperation with the off-taker of the captured carbon, the company is currently exploring options for permanent storage (CCS) in saline aquifers and utilization (CCU). Although options for CCU are yet to be defined, the issuer explicitly excludes utilization in enhanced oil recovery, which we factor in positively.

**Manufacture of Cement**

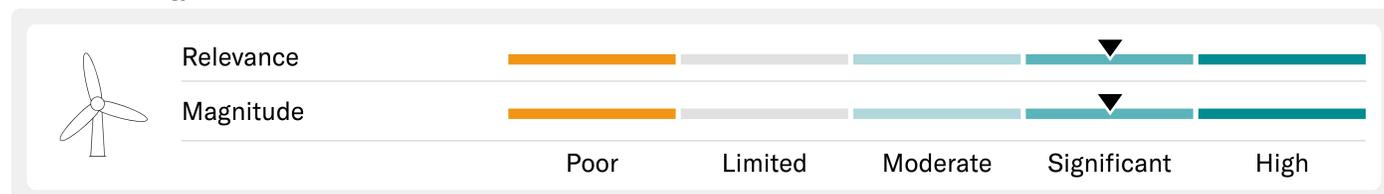


The decarbonization of the cement production process via the utilization of a variety of measures including improved energy and process efficiency, the deployment of alternative raw materials and fuels, as well as carbon capture, utilization and storage is significantly relevant for EMSTEEL and the cement manufacturing sector overall. Cement production is an inherently carbon-intensive

process and the sector is responsible for approximately 2.4 gigatons of CO<sub>2</sub> emissions per year, which equated to approximately 6% of global CO<sub>2</sub> emissions in 2023<sup>5</sup>. In the International Energy Agency's net zero scenario, the sector is forecasted to reduce the emissions intensity of the production process by 22% to 0.45 tCO<sub>2</sub>e/t of product by 2030, from 2023 levels to ultimately arrive at 0.02 tCO<sub>2</sub>e/t of product by 2050. To achieve the targeted intensity levels, the sector is expected to implement various measures including improved energy efficiency, a shift towards low-carbon fuels and a reduction of the clinker-to-cement ratio in the mid- and carbon capture, storage and utilization measures in the long-term. For EMSTEEL, CO<sub>2</sub> emissions from cement production make up roughly half of the company's total CO<sub>2</sub> emissions and although the expected impact of individual measures can vary in relevance, they are assessed to be of significant relevance on a consolidated basis.

The magnitude of assets and activities financed under this category is moderate, based on the expected individual contributions of different decarbonization measures, which are in parts subject to future technological developments. The issuer has defined stringent technical thresholds in line with the requirements of rigorous international standards such as the EU Taxonomy, but has limited the application of such thresholds to the year 2030 and beyond. As of 2024, the carbon intensity of EMSTEEL's cement production segment stood at 0.64 tCO<sub>2</sub>e/t of cement and therefore above the EU Taxonomy's applicable requirement (0.469 tCO<sub>2</sub>e/t of cement) and above the global average (0.58 tCO<sub>2</sub>e/t of cement)<sup>6</sup>, as well as above the levels of many industry peers, which is particularly relevant for refinancings under the green finance framework. In the mid-term, most GHG emissions reductions are expected to come from increased use of alternative raw materials, a shift in the company's product portfolio, the utilization of alternative fuels and increases in process efficiencies, although we lack visibility on the expected split of green financing proceeds allocations across these measures. The associated mitigation impact is expected to be substantial enough to bring the company's carbon intensity levels to below EU Taxonomy thresholds and therefore in alignment with the EU Taxonomy requirements by 2030. In the long-term, EMSTEEL, like the cement sector overall, will heavily rely on CCUS measures to achieve its decarbonization targets. CCUS is a tail-pipe technology solution subject to relatively high levels of uncertainty around its feasibility, which the IEA reflected in its latest Net Zero Roadmap for the sector<sup>7</sup>. The uncertainty around necessary future developments related to CCUS is factored in negatively in our assessment. Similar to the CCUS process for the company's steel business segment, the utilization of captured carbon will be explored further, but deployment in enhanced oil recovery is explicitly excluded, which we factor in positively.

### Renewable Energy



Developing renewable energy capacities in the form of power purchase agreements (PPAs) and on-site solar energy generation is significantly relevant on a consolidated level for EMSTEEL in its pursuit to decarbonize its production processes of both its steel and cement manufacturing business units. With regards to the company's steel manufacturing business unit, we view an increase in renewable energy generation as being highly relevant to further reduce the steel's carbon intensity and as an option to reduce the reliance on renewable energy certificates described in the category manufacture of steel. Meanwhile, for the company's cement manufacturing business unit, the need for increased volumes of renewable energy is expected to be moderate, as electricity consumption is only responsible for a comparatively small share of process-related emissions. With regards to the local context there is an elevated need for increased generation of renewable energy to alleviate the UAE's high reliance on fossil fuels and to decrease the associated high levels of carbon intensity in the local grid.

The magnitude of assets and activities financed under this category is significant, based on the consolidation of the different levels of impact expected to be generated via allocations towards PPAs and on-site solar energy capacities. Eligible expenditures related to PPAs refer to the associated energy bills paid to the provider of renewable electricity. Here, actual consumption of the renewable energy is ensured via a direct connection to the company's production plants, which we view as second-best option to increase the issuer's renewable energy consumption. In addition, the issuer finances on-site solar generation capacities, which we view as one of the best available renewable energy technologies, and is expected to produce the most substantial positive environmental impacts without any negative externalities but allocations towards this technology are expected to be relatively small.

### Additional contribution to sustainability considerations

We have not made an adjustment to the preliminary contribution to sustainability score based on additional considerations.

Regarding ESG Risks, EMSTEEL has established a robust due diligence process to identify and manage potential E&S risks. The company created an ESG Board Committee for overseeing the risk management process as well as conducting ESG risk assessments. EMSTEEL's processes are ISO 14001 certified and the company performs a Climate Risk Impact and Resilience analysis utilizing risk assessment software and platforms to scan for potential weaknesses. The company has implemented a code of conduct and business ethics and provides employees with channels to report violations and submit complaints. EMSTEEL provides training programs on occupational health and safety.

EMSTEEL's Green Finance Framework is coherent with their wider corporate sustainability strategy. The company aligns with the UAE Strategy 2050 by aiming to achieve net-zero emissions by 2050. The company has steadily reduced its GHG emissions since 2021. By 2030, EMSTEEL targets a 40% reduction in GHG emissions in their Steel Business Unit and a 30% reduction in the Cement Business Unit as well as having 100% clean and renewable electricity mix for their production. As part of their efforts EMSTEEL finances green hydrogen projects in collaboration with MASDAR to further decarbonize its steel production. The company also invests into research and development of new types of steel products that are less carbon intensive to produce.

## Appendix 1 - Alignment with principles scorecard for EMSTEEL's green finance framework

Factor	Sub-factor	Component	Component score	Sub-factor score	Factor score
Use of proceeds	Clarity of the eligible categories	Nature of expenditure	A	Best practices	Aligned
		Definition of content, eligibility and exclusion criteria for nearly all categories	A		
		Location	A		
		BP: Definition of content, eligibility and exclusion criteria for all categories	Yes		
	Clarity of the objectives	Relevance of objectives to project categories for nearly all categories	A	Best practices	
		Coherence of project category objectives with standards for nearly all categories	A		
		BP: Objectives are defined, relevant and coherent for all categories	Yes		
	Clarity of expected benefits	Identification and relevance of expected benefits for nearly all categories	A	Aligned	
		Measurability of expected benefits for nearly all categories	A		
		BP: Relevant benefits are identified for all categories	Yes		
		BP: Benefits are measurable for all categories	Yes		
		BP: Disclosure of refinancing prior to issuance and in post-allocation reporting	No		
		BP: Commitment to communicate refinancing look-back period prior to issuance	Yes		
	Process for project evaluation and selection	Transparency and clarity of the process for defining and monitoring eligible projects	Clarity of the process	A	
Disclosure of the process			A		
Transparency of the environmental and social risk mitigation process			A		
BP: Monitoring of continued project compliance			Yes		
Management of proceeds	Allocation and tracking of proceeds	Tracking of proceeds	A	Aligned	Aligned
		Periodic adjustment of proceeds to match allocations	A		
		Disclosure of the intended types of temporary placements of unallocated proceeds	A		
		BP: Disclosure of the proceeds management process	Yes		
		BP: Allocation period is 24 months or less	No		
Reporting	Reporting transparency	Reporting frequency	A	Aligned	Aligned
		Reporting duration	A		
		Report disclosure	A		
		Reporting exhaustivity	A		
		BP: Allocation reporting at least until full allocation of proceeds, and impact reporting until full bond maturity or loan payback	Yes		
		BP: Clarity and relevance of the indicators on the sustainability benefits	Yes		
		BP: Disclosure of reporting methodology and calculation assumptions	Yes		
		BP: Independent external auditor, or other third party, to verify the tracking and allocation of funds	Yes		
		BP: Independent impact assessment on environmental and social benefits	No		
<b>Overall alignment with principles score:</b>					<b>Aligned</b>

Legend: BP - Best practice, A - Aligned, PA - Partially aligned, NA - Not aligned

## Appendix 2 - Mapping eligible categories to the United Nations' Sustainable Development Goals

The three eligible categories included in EMSTEEL's framework are likely to contribute to four of the United Nations' Sustainable Development Goals (SDGs), namely:

UN SDG 17 Goals		SDG Targets
GOAL 7: Affordable and Clean Energy	Renewable Energy	7.2: Increase substantially the share of renewable energy in the global energy mix
GOAL 9: Industry, Innovation and Infrastructure	Manufacture of Steel	9.4: Upgrade infrastructure and retrofit industries to make them sustainable, with all countries taking action
	Manufacture of Cement	
GOAL 12: Responsible Consumption and Production	Manufacture of Steel	12.5: Substantially reduce waste generation through prevention, reduction, recycling and reuse
	Manufacture of Cement	
GOAL 13: Climate Action	Manufacture of Steel	
	Manufacture of Cement	
	Renewable Energy	

The United Nations' Sustainable Development Goals (SDGs) mapping in this SPO considers the eligible project categories and associated sustainability objectives/benefits documented in the issuer's financing framework, as well as resources and guidelines from public institutions, such as the ICMA SDG Mapping Guidance and the UN SDG targets and indicators.

### Appendix 3 - Summary of eligible categories in EMSTEEL's framework

Eligible Categories	Description	Sustainability Objectives	Impact Reporting Metrics
Manufacture of Steel	<p>» Manufacture of steel where greenhouse gas emissions reduced by the amount of emissions assigned to the production of waste gases do not exceed the relevant values applied to the different manufacturing process steps below:</p> <ul style="list-style-type: none"> <li>• hot metal = 1.331 tCO<sub>2</sub>e/t product</li> <li>• EAF high alloy steel = 0.266 tCO<sub>2</sub>e/t product</li> <li>• EAF carbon steel = 0.209 tCO<sub>2</sub>e/t product</li> </ul>	Climate Change Mitigation	<ul style="list-style-type: none"> <li>• Estimated annual reduced and/or avoided GHG emissions [tCO<sub>2</sub>e/year]</li> <li>• Estimated annual captured GHG emissions through CCU/S [tCO<sub>2</sub>e/year]</li> </ul>
Manufacture of Cement	<p>» cement from grey clinker or alternative hydraulic binder, where the specific GHG emissions from the clinker and cement or alternative binder production are lower than 0.469 tCO<sub>2</sub>e per tonne of cement or alternative binder manufactured.</p>	Climate Change Mitigation	<ul style="list-style-type: none"> <li>• Estimated annual reduced and/or avoided GHG emissions [tCO<sub>2</sub>e/year]</li> <li>• Estimated annual captured GHG emissions through CCU/S [tCO<sub>2</sub>e/year]</li> </ul>
Renewable Energy	<p>» Construction or operation of electricity generation facilities that produce electricity using solar photovoltaic (PV) technology</p> <p>» Power Purchase Agreements</p>	Climate Change Mitigation	<ul style="list-style-type: none"> <li>• Installed renewable energy capacity (GW)</li> <li>• Annual renewable energy generation (GWh)</li> <li>• Annual GHG emissions avoided (tonnes of CO<sub>2</sub>e emissions)</li> <li>• New capacity installed/financed (if SPVs)</li> </ul>

### Endnotes

- 1 Point-in-time assessment is applicable only on date of assignment or update.
- 2 World Economic Forum, [Net-Zero Industry Tracker 2024](#), December 2024
- 3 Ibid
- 4 Zhiyuan Fan, S. Julio Friedmann, [Low-carbon production of iron and steel: Technology options, economic assessment, and policy](#), 2021
- 5 World Economic Forum, [Net-Zero Industry Tracker 2024](#), December 2024
- 6 Ibid
- 7 International Energy Agency, [Net Zero Roadmap: A Global Pathway to Keep the 1.5°C Goal in Reach](#), September 2023

Moody's assigns SPOs in alignment with the main tenets of the ICMA Guidelines for Green, Social, Sustainability and Sustainability-Linked Bonds External Reviews and the LSTA/LMA/APLMA Guidance for Green, Social and Sustainability-Linked Loans External Reviews, as applicable; Moody's practices may however diverge in some respects from the practices recommended in those documents. Moody's approach to assigning SPOs is described in its Assessment Framework, and is subject to the ethical and professional principles set forth in the Moody's Investors Service Code of Professional Conduct.

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