Promoting Interoperability Across Environmental and Social Risk Management Frameworks

How the IFC Environmental and Social Performance Standards And World Bank Group Environmental, Health and Safety Guidelines Align with the EU Taxonomy's "Do No Significant Harm" and Minimum Safeguards Criteria

EQUATOR PRINCIPLES

IFC International Finance Corporation WORLD BANK GROUP

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Foreword

IFC is a global leader on sustainability, striving to move the needle on policies and practices for environmental and social (E&S) risk management across the emerging markets where we operate. The Performance Standards on Environmental and Social Sustainability are a cornerstone of IFC's value proposition as a standard-setter. Together with the World Bank Group Environmental, Health and Safety (EHS) Guidelines, they have served as a leading reference for E&S risk management since their adoption in 2006 and subsequent update in 2012, with an underlying principle that business activities must seek to 'do no harm' to people and the environment.

The Performance Standards are the basis of the Equator Principles, a common baseline and risk management framework to identify, assess and manage E&S risks when financing projects. The Equator Principles Association (EPA) has been successfully supporting the application of the Equator Principles and the Performance Standards for two decades. From 8 founding members in 2003, the EPA membership has grown to 138 financial institutions from 38 countries. This is a tremendous achievement to foster the uptake of good international industry practices in E&S risk management globally. The Performance Standards have also been adopted or adapted by other development finance institutions, as well as 34 export credit agencies that are signatories of the OECD Common Approaches.

This research report, conducted in partnership between IFC and the EPA, significantly contributes to promoting the alignment of sustainable finance regulations and standards on E&S risk management.

Regulatory approaches to facilitate the climate transition have proliferated around the world, particularly with the development of classification systems – or taxonomies – that set out criteria for economic activities labelled as sustainable. These approaches often include requirements for economic activities to do no significant harm to environmental objectives, and meet minimum social safeguards. The European Union's taxonomy for sustainable activities has become a recognized benchmark for such approaches.

We hope this publication will provide useful guidance to practitioners in implementing "do no significant harm" and minimum safeguards requirements, and promote global objectives to seek interoperability of sustainable finance approaches, which is critical to support their effectiveness and avoid greenwashing. By providing practical comparisons

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between the EU Taxonomy requirements and the Performance Standards and EHS Guidelines, this report can also be a helpful tool for regulators as they move from designing taxonomies to overseeing their implementation.

Finally, we would like to acknowledge our long-standing partnership to promote the use of the Performance Standards through joint knowledge-sharing, capacity building, and research initiatives. Our collective journey has influenced sustainability across the financial sector globally, and it is with great enthusiasm that we are looking forward to continuing our collaboration.

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Table of Content

List of Figures and Tables

Figures

Tables

Abbreviations and Acronyms

BAT	Best Available Techniques
BMP	Biodiversity Management Plan
CAP	Corrective Action Plan
CCA	Climate Change Adaptation
CCM	Climate Change Mitigation
CSRD	Corporate Responsibility Reporting Directive
DNSH	Do No Significant Harm
E&S	Environmental & Social
EHSG	Environmental, Health and Safety Guidelines
EHS ISG	Environmental, Health and Safety Industry Sector Guidelines
EIA	Environmental Impact Assessment
EP/EPA	Equator Principles/Equator Principles Association
EPFI(s)	Equator Principles Financial Institution(*s*)
ESAP	Environmental and Social Action Plan
ESIA	Environmental & Social Impact Assessment
ESMS	Environmental and Social Management System
ESRS	European Sustainability Reporting Standards
FI(s)	Financial Institution(*s*)
GHG	Greenhouse Gas
GIIP	Good International Industry Practice
GN	Guidance Note (*to the IFC Performance Standards*)
IFC	International Finance Corporation
ILO	International Labour Organization
IPPC	Integrated Pollution Prevention and Control
ISG	Industry Sector Environmental, Health and Safety Guidelines
ISO	International Organization for Standardization
IUCN	International Union for Conservation of Nature
KPIs	Key Performance Indicators
MNE	Multinational Enterprises (*Guidelines, OECD*)
MS	Minimum Safeguards
NFRD	Non-financial Reporting Directive
OECD	Organisation for Economic Co-operation and Development
PS(s)	Performance Standard(*s*)
PSF	Platform on Sustainable Finance
RCP	Representative Concentration Pathway
SFDR	Sustainable Finance Disclosure Regulation
TEG	Technical Expert Group on Sustainable Finance
UN	United Nations
UNGPs	United Nations Guiding Principles on Business and Human Rights
WB/WBG	World Bank/World Bank Group
WHO	World Health Organization

Executive Summary

New financial instruments designed to support climate, green economy, and social goals have taken various forms to reflect national or regional policy priorities and regulatory frameworks since the adoption of the Paris Agreement in 2015. However, the lack of clear, consistent, and credible information related to these instruments, as well as limitations in terms of the comparability and interoperability of different frameworks, risk hindering the achievement of sustainable development. To support the transition to a low-carbon economy, address information gaps, and reduce the risks of greenwashing, there has been growing recognition of the need to strengthen frameworks that effectively enable the transition.

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These imperatives have been driving the development of sustainable taxonomies around the world. Establishing eligibility criteria and setting requirements in terms of environmental and social (E&S) risk management and disclosures are common features of the taxonomies emerging in the market. Taxonomies involve a process for implementation with defined screening criteria, which often includes safeguards that intend for activities with a positive substantial contribution to an objective of the taxonomy to avoid negative impacts on other objectives. This principle, known as "do no significant harm" (DNSH), often complemented by "minimum safeguards" (MS) requirements, has been integrated into several national or regional taxonomies developed in the past years, including the European Union (EU) Taxonomy Regulation 2020/852.

The EU Taxonomy recognizes as 'environmentally sustainable' economic activities that make a substantial contribution to at least one of the EU's climate and environmental objectives, while at the same time not significantly harming any of these objectives (DNSH) and meeting minimum safeguards (MS).

To support the implementation of sustainable taxonomies and leverage existing E&S risk management frameworks, financial institutions and other market participants subject to the EU Taxonomy, together with international networks and industry associations, have been calling for clarification of alignment between the EU Taxonomy requirements and pre-existing international standards.

In response to these increasing demands, IFC has partnered with the Equator Principles Association to conduct this research, leveraging the combined expertise and experience of IFC as a standard-setter in E&S risk management and investor across emerging markets, and 138 Equator Principles Financial Institutions (EPFIs) operating globally. Over the past decades, the IFC E&S Performance Standards (PSs) and the World Bank Group (WBG) Environmental, Health and Safety (EHS) Guidelines, have provided guidance to companies and financial institutions on how to identify, assess, avoid, mitigate and manage E&S risks and impacts as a way of doing business

in a sustainable way. The PSs and EHS Guidelines have influenced many E&S policies adopted by financial institutions – such as the Equator Principles which are used by EPFIs – and constitute an internationally recognized framework for E&S risk management, particularly for activities in emerging markets and developing economies. Companies and financial institutions have embedded these standards (PSs) and technical reference documents (EHS Guidelines) into their decision-making frameworks and have built significant experience and expertise over the years.

This report examines the interoperability between the EU Taxonomy's DNSH and MS criteria, on the one hand, and the PSs and EHS Guidelines, on the other, each of which, for the purpose of this analysis, are considered a "Framework." The intention of this study is to establish whether and how compliance with the PSs and EHS Guidelines may satisfy the EU Taxonomy's DNSH and MS criteria, with particular relevance to activities outside the EU, as the EU Taxonomy looks to expand its remit to emerging markets in the coming years with progressive requirements for non-EU entities to report on their taxonomy alignment.

The IFC Environmental and Social Performance Standards have become a globally recognized benchmark for E&S risk management. The application of the PSs is underpinned by the intent to "do no harm" to people and the environment.

Both the application of the EU Taxonomy's DNSH and MS criteria, and the PSs and EHS Guidelines, require an effective E&S risk assessment and management system to identify, assess, avoid, and where avoidance is not possible, mitigate and manage E&S risks and impacts in line with international good practices.

KEY FINDINGS of the report include:

[1]

Comparing the strategic objectives and implementation features of each Framework:

- **The PSs and EHS Guidelines approach to E&S risk management is entirely compatible with the EU Taxonomy's DNSH and MS requirements.** Although the primary objective of the EU Taxonomy is to enable entities to report the degree of alignment of their activities to a classification system of sustainable activities, whereas the primary objective of the PSs and EHS Guidelines is to enable entities to manage

E&S risks, both Frameworks require processes to assess and manage E&S risks and impacts in line with good international industry practice (GIIP). **The PSs and EHS Guidelines are a credible reference Framework to assess the alignment of a business activity with the EU Taxonomy's DNSH and MS criteria** to qualify as "environmentally sustainable."

- **The EU Taxonomy and the PSs and EHS Guidelines show a large level of alignment in terms of E&S topics, impact areas and sectors.** In particular, 5 out of 8 IFC PSs, alongside the WBG General EHS Guidelines, largely cover the issues identified in the DNSH and MS criteria.

- As of now, **the primary requirements imposed by the EU Taxonomy are for reporting purposes, while the PSs and EHS Guidelines are primarily designed to provide an effective E&S risk management approach.** However, both processes require a level of public disclosure and transparency, and the underlying approach for screening alignment with the EU Taxonomy implies strong E&S risk management processes.

- The enforcement of EU regulations[1] is under the scrutiny of supervisors and potentially subject to mandatory audits. **If applying the PSs and EHS Guidelines to assess and report their alignment with the EU Taxonomy, companies will need to collect and store audit evidence** that may not necessarily be collected or documented as part of current PS-based assessment processes.

- **The PSs and EHS Guidelines must be applied at the time of the transaction and monitored throughout the project/investment cycle, while reporting against the EU Taxonomy[2] is expected to be done once a year.** Nevertheless, the EU Taxonomy reporting requirement assumes that an assessment has been done at a more granular level, compatible with a transaction-by-transaction approach.

[2]

Comparing technical requirements:

- By setting minimum standards applicable even where host country regulations are less stringent than EU regulations, **the PSs and EHS Guidelines represent a useful and credible framework to satisfy the requirements of the EU Taxonomy for activities in non-EU countries.**

By setting minimum standards applicable even where host country regulations are less stringent than EU regulations, the PSs and EHS Guidelines represent a useful and credible framework to satisfy the requirements of the EU Taxonomy for activities in non-EU countries.

[1] Commission Delegated Regulation (EU) 2021/2178 of 6 July 2021 (Disclosures Delegated Act); and Regulation (EU) 2019/2088 of 27 November 2019 on sustainability-related disclosures (SFDR)

[2] Through the Disclosure Delegated Act and SFDR

- The EU Taxonomy pre-selected the E&S topics to be addressed for each sector, while an analysis performed under the PSs (sector agnostic) and EHS Guidelines would be adapted to each business activity/transaction. **While a comprehensive PS-based assessment is likely to capture all relevant E&S topics for a given business activity, screening the activity's alignment with the EU Taxonomy would require checking that all topics listed in the EU Taxonomy are addressed.**

- **With regards to social aspects, both IFC PSs and WBG EHS Guidelines and the EU Taxonomy are largely similar in terms of scope** and refer to the same international standards.

The report further provides a deep dive comparative technical analysis of two sectors: electricity generation from wind power and manufacture of cement.

ELECTRICITY GENERATION FROM WIND POWER

- The Industry Sector EHS Guidelines on Wind Energy, combined with the General EHS Guidelines and the relevant PSs, adopt a more holistic approach than the EU Taxonomy, addressing additional issues, such as: :
  - impact on water associated with wind power plant construction,
  - sector-specific occupational health and safety hazards, and community health and safety hazards,
  - broadening the scope across the multiple stages of project evaluation and monitoring (for instance with regards to biodiversity).
- The criteria set by the EU Taxonomy, however, are usually more specific and detailed (particularly on water and biodiversity): based on EU legislation and related to qualitative descriptors to determine good environmental status, they require the calculation of specific indicators and the respect of nationally established thresholds.

MANUFACTURE OF CEMENT

- Overall, the Industry Sector EHS Guidelines for Cement and Lime Manufacturing, combined with the General EHS Guidelines and the relevant PSs, align with most of the EU Taxonomy DNSH/MS requirements applicable to the Manufacture of Cement activity.
- There are a few instances where the PSs and EHS Guidelines are less specific (e.g., climate change adaptation) than the DNSH/MS criteria, and other instances where the PSs and EHS Guidelines are more granular and broader in scope, addressing more topics (e.g., water and wastewater, circular economy, biodiversity, worker rights), and considering the entire project lifespan (construction, operation and decommissioning).
- The PSs and EHS Guidelines include more operational information in terms of recommended prevention and control techniques than the EU Taxonomy, particularly for operations carried out outside the EU, where EU Directives and Regulations referred to by the DNSH and MS criteria are not applicable.

As leading international standards and technical reference documents for E&S risk management, the Performance Standards and EHS Guidelines are a credible Framework to satisfy the DNSH and MS criteria set by the EU Taxonomy.

The conclusions of this report suggest that the IFC PSs and WBG EHS Guidelines, as leading international standards and technical reference documents for assessing and managing E&S risks and impacts, are a useful and credible Framework that can be leveraged to satisfy the DNSH and MS criteria set by the EU Taxonomy. While some differences exist when comparing the details of each Framework, the overall approach of the PSs and EHS Guidelines is similar to the EU Taxonomy's DNSH and MS criteria approach: identifying the risks and impacts that are material, and assessing, avoiding, mitigating, and managing them in line with good international industry practice (GIIP).

This alignment and comparability are relevant to activities within the EU, as well as activities in non-EU countries:

- For activities conducted in EU countries, although the EU Taxonomy's requirements – in particular DNSH – make reference to detailed EU regulations that are not systematically directly aligned with the language of PSs and EHS Guidelines, application of the latter remains useful for practitioners. As per PS1, para. 15, users of the PSs are required to ensure that business activities "will operate in compliance with applicable laws and regulations, and meet the requirements of Performance Standards 1 through 8." Therefore, whether or not the PSs requirements and EHS Guidelines levels and measures are fully aligned with EU requirements, compliance with EU regulations for activities within the EU is embedded in the framework of the PSs as a minimum requirement for business activities.

- **The PSs and EHS Guidelines may constitute an even more relevant framework when assessing alignment with the EU Taxonomy's DNSH and MS criteria for activities in non-EU countries, and bring significant value to close a fundamental gap that the EU Taxonomy will face when extending its reporting requirements to activities in emerging markets.** The PSs and EHS Guidelines can

For activities in non-EU countries, the PSs and EHS Guidelines bring significant value to close a fundamental gap that the EU Taxonomy will face when extending its reporting requirements to activities in emerging markets.

provide consistency in underdeveloped regulatory environments, and are widely known to financial institutions globally, creating potential synergies for the PSs to support the implementation of the EU Taxonomy as its scope of application expands. Indeed, for the EU Taxonomy's DNSH and MS criteria that refer to international standards rather than European regulations for activities in third countries, the PSs, by requiring business activities to achieve whichever is more stringent between host country regulations and the levels and measures presented in EHS Guidelines (PS Overview, para. 7), provide a strong framework to support the application of GIIP for activities in non-EU countries, in line with the objectives of the EU Taxonomy.

Moreover, the PSs and EHS Guidelines are aligned with those DNSH and MS criteria of the EU Taxonomy that are not related to specific and detailed EU regulations. This is especially the case for the generic criteria for DNSH to protection and restoration of biodiversity and ecosystems, where compliance with ***Performance Standard 6*** (which is explicitly cited by the Climate Delegated Act) may be sufficient to meet the criteria both for activities within and outside the EU. On the other hand, for some E&S topics (e.g., pollution, water), the generic DNSH and MS criteria of the EU Taxonomy reference many EU regulations. In such cases, the use of the PSs and EHS Guidelines (in addition to their minimum requirement of meeting national laws) remains relevant, but systematic gap analysis between EU regulations, PSs requirements, and EHS Guidelines guidance would be required for economic activities that are conducted within the EU.

This report also provides helpful foundations and operating principles for companies and financial institutions subject to those taxonomies adopted outside the EU which include similar DNSH and MS requirements.

To further connect the EU Taxonomy's DNSH and MS criteria with the PSs and EHS Guidelines from an operational perspective, new tools are needed to clarify expectations to complement the PSs and EHS Guidelines to comply fully with the DNSH and MS criteria disclosure requirements, and eventually demonstrate alignment with the EU Taxonomy. To support and illustrate this objective, an operational tool accompanying this report was developed based on the comparative analysis presented for two economic activities: electricity generation from wind power and manufacture of cement. These tools set a checklist of what should be done to comply with the DNSH and MS criteria, in cases where an assessment based on the requirements of the PSs and levels and measures of the EHS Guidelines would be conducted. Such tools could be replicated for other economic activities listed in the EU Taxonomy, and for other environmental objectives of the EU Taxonomy to further help practitioners.

The analysis presented in this report also provides helpful foundations and operating principles for companies and financial institutions subject to those taxonomies adopted outside the EU which include similar DNSH and MS requirements. While not

necessarily fully aligned with the EU Taxonomy requirements, several taxonomies contain features that are interoperable and comparable to the EU's DNSH and MS criteria. The conclusions of this report support further efforts globally to promote alignment and interoperability of sustainable finance frameworks across markets.

Moving forward, additional research and analysis may be considered to integrate the continuous developments that will take place in this area, not only at EU level (e.g., European sustainability reporting standards, Directive on corporate sustainability due diligence, etc.), but also globally, in particular with the emergence of new regional and national taxonomies, and international sustainability standards. In addition, potential future revisions and/or updates of the PSs and EHS Guidelines, would have to be taken into consideration when revisiting the findings of this report.

1 Introduction

1 Introduction

Since the adoption of the Paris Agreement in 2015, approaches to direct capital flows to low-carbon activities, and attempts at developing frameworks to define sustainable activities, have proliferated across multiple jurisdictions. New financial instruments designed to support climate action, the green economy, and social goals, have taken various forms to reflect national or regional policy priorities and regulatory frameworks.

These efforts have led to a range of approaches, methodologies, and tools. However, the lack of clear, consistent, and credible information related to these instruments, as well as limitations in terms of the comparability and interoperability of different frameworks, risk hindering progress towards the achievement of sustainable development. To support the transition to a low-carbon economy, address information gaps, and reduce the risks of greenwashing, there has been growing recognition of the need to strengthen frameworks that effectively enable the transition.

These imperatives have been driving the development of sustainable taxonomies around the world. Establishing eligibility criteria and setting requirements in terms of environmental and social (E&S) risk management and disclosures are common features of the taxonomies emerging in the market. Taxonomies aim at bringing predictability and transparency to support the credibility of sustainability assessments from a sectoral or activity-based perspective and address increasing concerns about greenwashing.

Taxonomies involve a process for implementation with defined screening criteria to determine whether an activity can be considered "aligned." This screening process often includes safeguards that intend for activities with a positive substantial contribution to an objective of the taxonomy to avoid negative impacts on other objectives. This principle, known as "do no significant harm" (DNSH), has been integrated in many national and regional taxonomies developed in recent years, often complemented by "minimum safeguards" requirements based on international standards (e.g., taxonomies developed by Bangladesh, Chile, China, Colombia, European Union, Indonesia, Mongolia). These criteria often refer to – or are informed by – E&S risk management frameworks that have been widely adopted both in advanced economies and emerging markets and developing economies (EMDEs), in particular by the financial sector.

The EU Taxonomy

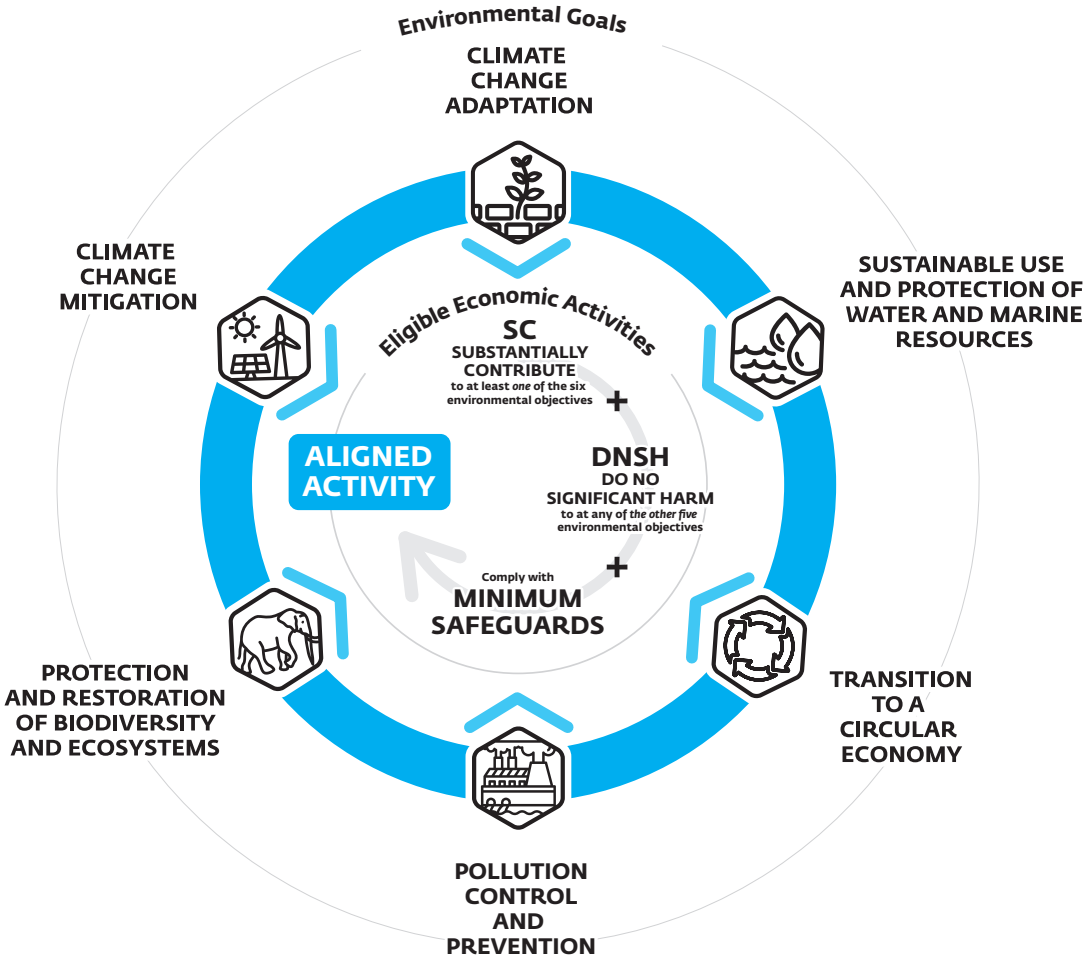
In order to meet the EU's climate and energy targets for 2030 and reach the objectives of the European Green Deal, the European Union has adopted Taxonomy Regulation 2020/852 ("the EU Taxonomy"). The EU Taxonomy was published in the Official Journal of the European Union on 22 June 2020 and entered into forced on 12 July 2020. The EU Taxonomy establishes criteria for determining whether an economic activity qualifies as environmentally sustainable. In this way, the EU Taxonomy aims to create "security for investors, protect private investors from greenwashing, help companies to become more climate-friendly, mitigate market fragmentation and help shift investments where they are most needed."[3] The EU Taxonomy is still under development and benefits from extensive inputs from the ***Platform on Sustainable Finance*** (PSF),

[3] European Commission website: ***EU taxonomy for sustainable activities***

an independent expert group and advisory body of the European Commission.

As illustrated in Figure 1, the EU Taxonomy recognizes as green, or "environmentally sustainable," economic activities that make a substantial contribution to at least one of the EU's climate and environmental objectives, while at the same time not significantly harming any of these objectives (DNSH) and meeting minimum safeguards (MS). The six environmental objectives of the EU Taxonomy are climate change mitigation, climate change adaptation, sustainable use and protection of water and marine resources, transition to a circular economy, pollution prevention and control, and protection and restoration of biodiversity and ecosystems. The first Delegated Act on sustainable activities for the climate change adaptation and mitigation objectives was published in the Official Journal on 9 December 2021.[4] The second Delegated Act for the four other environmental objectives had not been published at the time of writing this report. It must be noted that even once all Delegated Acts will be released, technical

Figure 1: Overall presentation of the EU Taxonomy



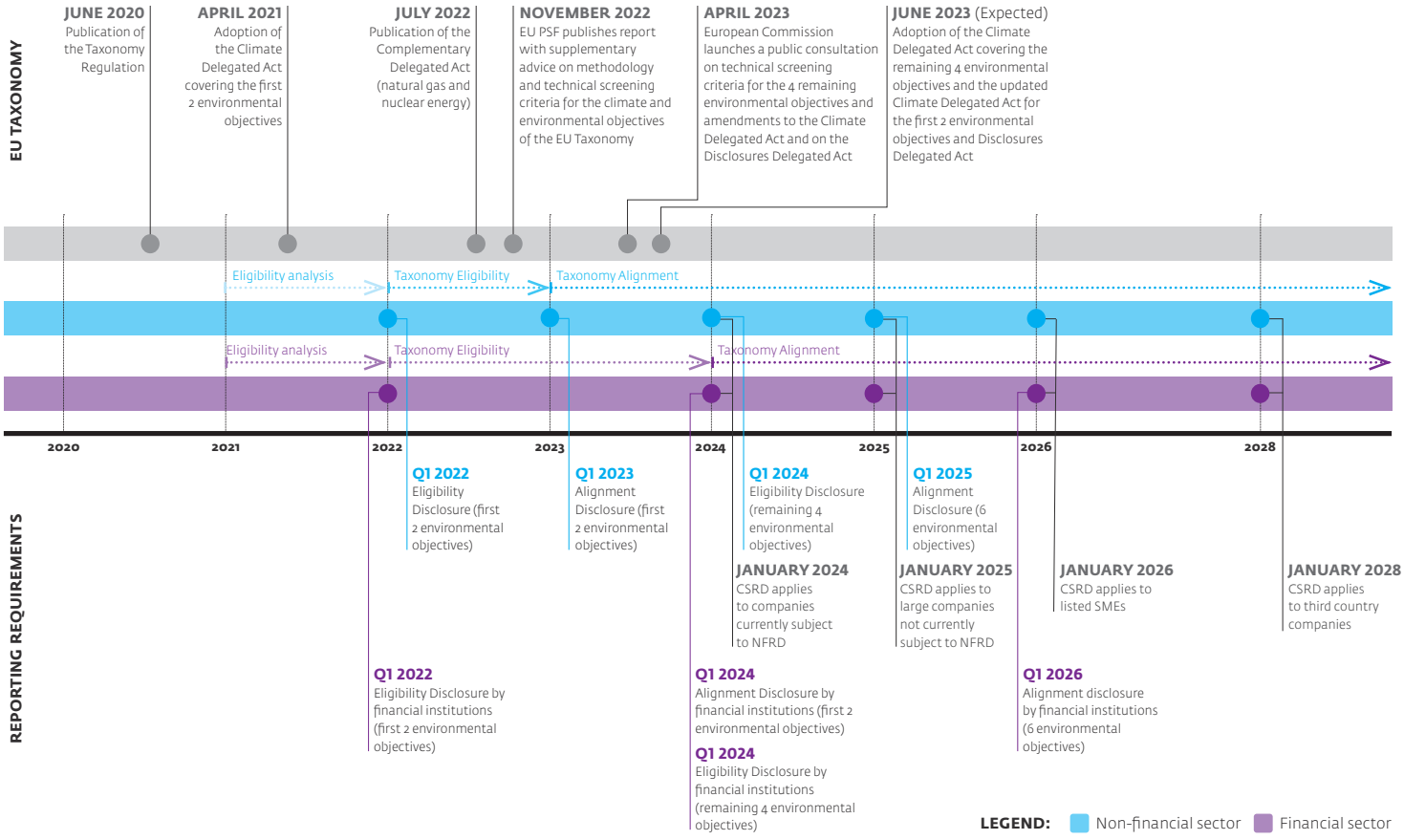
[4] The EU Taxonomy Climate Delegated Act delivered the first set of technical criteria for defining activities that contribute substantially to climate change mitigation and adaptation. It is supplemented by the Commission Delegated Regulation (EU) 2022/1214 as regards economic activities in certain energy sector (nuclear and fossil gaseous fuels)

screening criteria will continue to be strengthened over time and the PSF is continuously exploring additions and refinements: in 2022, the PSF published several reports on (i) a structure for a social taxonomy, (ii) extension options linked to environmental objectives, and (iii) the application of the MS criteria. These reports were subject to extensive public consultation and feedback.

More generally, the EU Taxonomy evolves in relation to the overall progress of the European Commission's Strategy for Financing the Transition to a Sustainable Economy. The first reporting exercise of EU Taxonomy-related information to be disclosed by EU undertakings took place in 2022 and will be progressively implemented.

Of importance to the analysis provided in this report, as of 2024, disclosure of information by non-EU groups with EU subsidiaries will be required, and as of 2028, disclosure of information related to activities undertaken outside of the EU will be required from EU-based companies.[5] With the entry into force of the Corporate Sustainability Reporting Directive (CSRD) since 5 January 2023[6] and the upcoming adoption of European Sustainability Reporting Standards (ESRS), the European Commission and the European Securities and Markets Authority (ESMA) may clarify and/or revise some provisions. The European Commission is also exploring a possible extension of the EU Taxonomy to include a social taxonomy and a "brown", or "transition" taxonomy[7] in coming years.

Figure 2: EU Taxonomy development and implementation timeline



[5] For additional details, see Directive (EU) 2022/2464 of the European Parliament and of the Council of 14 December 2022 amending Regulation (EU) No 537/2014, Directive 2004/109/EC, Directive 2006/43/EC and Directive 2013/34/EU, as regards corporate sustainability reporting (CSRD)

[6] *Ibid.*

[7] While various definitions and scope may describe a "brown" or "transition" taxonomy, this concept is generally meant to provide criteria for assessing the transition paths of companies operating in traditionally brown sectors for climate change mitigation. For instance, the EU Platform on Sustainable Finance has recommended to consider an "extended" taxonomy to support economic transition. An extended taxonomy would allow a wider coverage and recognition of activities with different performance levels, including intermediate and no-significant impact activities, while staying away from significant harm. Further, it would help to provide a positive label for investments to move activities out of significant harmful performance. See: ***Platform on Sustainable Finance's draft report on taxonomy extension options linked to environmental objectives***, July 2021.

The IFC Performance Standards and World Bank Group Environment, Health and Safety Guidelines

Established in 2006 and updated in 2012, the International Finance Corporation's (IFC) ***Environmental and Social Performance Standards*** (PSs) have become a globally recognized benchmark for E&S risk management. They have influenced the E&S policies and standards adopted by multilateral financial institutions and have been used by many Development Finance Institutions (DFIs), Export Credit Agencies (ECAs), and multinational corporations, as well as 138 Equator Principles Financial Institutions (EPFIs) from 38 countries.[8]

The PSs were designed to provide guidance to companies and financial institutions on how to identify, assess, avoid, mitigate and manage E&S risks and impacts as a way of doing business in a sustainable way. **The application of the PSs is underpinned by the intent to "do no harm" to people and the environment, as per *IFC's Sustainability Policy* (para. 9)**. The eight PSs define IFC clients' responsibilities for managing their E&S risks and impacts throughout the life of an investment or advisory engagement, covering the following topics:

- **Performance Standard 1:** Assessment and Management of Environmental and Social Risks and Impacts
- **Performance Standard 2:** Labor and Working Conditions
- **Performance Standard 3:** Resource Efficiency and Pollution Prevention
- **Performance Standard 4:** Community Health, Safety, and Security
- **Performance Standard 5:** Land Acquisition and Involuntary Resettlement
- **Performance Standard 6:** Biodiversity Conservation and Sustainable Management of Living Natural Resources
- **Performance Standard 7:** Indigenous Peoples
- **Performance Standard 8:** Cultural Heritage

The PSs are accompanied by a set of ***Guidance Notes***, which offer guidance on the requirements contained in the PSs, including reference materials, and on good sustainability practices to improve project performance.

The ***World Bank Group Environmental, Health, and Safety Guidelines*** (EHS Guidelines) have been developed progressively, starting in the 1990s, and were substantively updated in 2007 with the publication of new General EHS Guidelines and the Industry Sector EHS Guidelines (ISG). The EHS Guidelines are technical reference documents containing information on cross-cutting EHS issues applicable to key industry sectors. The General EHS Guidelines are designed to be used together with the relevant ISG. The World Bank Group began to review and update them starting from 2013. The PSs make reference to the EHS Guidelines as a recognized source of GIIP for companies and indicate that "when host country regulations differ from the levels and measures presented in the EHS Guidelines, projects are expected to achieve whichever is more stringent" (PS Overview, para. 7). Through this requirement, the EHS Guidelines are an integral part of the E&S risk management framework established by the PSs.

The combination of the PSs (E&S risk management standards), their Guidance Notes (explaining the requirements in the PSs), and the EHS Guidelines (technical reference documents), has become a key component of companies' and investors' E&S risk management systems and a well-established benchmark for GIIP in E&S risk management.

[8] As of February 2023

Connecting the EU Taxonomy and the PSs and EHS Guidelines

The DNSH and MS criteria of the EU Taxonomy, and the PSs and EHS Guidelines, present clear similarities and connections. Both the application of the DNSH/MS criteria and the PSs/EHS Guidelines require an effective E&S risk assessment and management system to identify, assess, avoid, and where avoidance is not possible, mitigate and manage E&S risks and impacts in line with international good practices. **In the technical annex of its Final Report on the EU Taxonomy in 2020, the Technical Expert Group on Sustainable Finance (TEG)**[9] **introduced many references to the PSs, to be considered when applying the technical screening criteria.**[10] It therefore became relevant to explore the alignment and interoperability between the EU Taxonomy DNSH/MS criteria and the PSs/EHS Guidelines, and analyze whether and how the latter represent a credible and useful framework to satisfy the requirements of the EU Taxonomy. Such analysis appears even more important when considering that many companies, particularly financial institutions, have been operating with the framework offered by the PSs for a long time, and now have to comply with both the EU Taxonomy and the PSs/EHS Guidelines.

Objectives

To support the implementation of sustainable taxonomies and leverage existing E&S risk management frameworks, financial institutions and other market participants subject to the EU Taxonomy, together with international networks and industry associations, have been calling for standard-setting bodies and regulators to provide mappings, correspondence tables, and clarification of alignment between the EU Taxonomy requirements and pre-existing international standards.[11] **Such exercise could improve the comparability, complementarity, and interoperability across frameworks, while providing clarity and flexibility for implementation.**

In response to these increasing demands, **IFC has partnered with the Equator Principles Association to conduct this research**, leveraging the combined expertise and experience of IFC as a standard-setter and investor across emerging markets, and 138 Equator Principles Financial Institutions (EPFIs) as users of the PSs operating globally.

Methodology

This research is mainly based on a desk review, focusing on relevant literature related to: (i) legal provisions for the EU Taxonomy; (ii) IFC Sustainability Framework and EHS Guidelines; (iii) other E&S Standards; (iv) research papers on the EU Taxonomy and recommendations by leading institutions; and (v) other EU legal acts. The sources considered for the research are available in ***Annex 5: Bibliography***. The literature review helped frame the context in which the EU Taxonomy, and the PSs and EHS Guidelines were developed, their similarities, and their relationship with other existing standards, as well as expected future developments.

In addition to the literature review, the analysis included interviews with IFC experts and external stakeholders, including EPFIs. Their contribution is acknowledged in the Acknowledgements section of this report.

Based on the scope and objectives described above, the following comparative analyses have been conducted and form the outline of the report:

[9] The TEG was a predecessor to the PSF, and was entrusted by the EU Commission to provide expert advice as part of the development of the EU Taxonomy

[10] ***Technical Expert Group on Sustainable Finance, Taxonomy Report: Technical Annex, Updated methodology & Updated Technical Screening Criteria, 2020***,

[11] See for example PRI's ***Implementing the EU Taxonomy: An Update to PRI's 'Testing the Taxonomy' Report (2022)***; and ***Recommendation 6 in the UNEP-FI and EBF's Testing the Application of the EU Taxonomy to Core Banking Products report (2021)***.

Figure 3: Structure of the comparative analysis between the EU Taxonomy's DNSH and MS, and the Performance Standards and EHS Guidelines

Comparing strategic direction and implementation features

The **strategic direction and implementation features comparative analysis** identifies areas of alignment and divergence between generic DNSH/MS and the PSs/EHS Guidelines, in terms of strategic objectives, scope of application, and expected actions when operationalizing these requirements.

Comparing technical requirements (for a selection of E&S risks/ impacts and industry sectors)

The **technical comparative analysis** explores in greater detail E&S requirements and performance levels specified by the EU Taxonomy and the PSs/EHS Guidelines. Building on specific examples (6 E&S topics and 2 industry sectors), the analysis identifies the main similarities and differences between generic DNSH/MS and PSs/ EHS Guidelines, in terms of objectives, means and expected performance when managing E&S risks and impacts.

Important Caveats

This report focuses on the applicability of the PSs and EHS Guidelines in meeting the DNSH and MS criteria of the EU Taxonomy. However, the following clarifications about the scope of the study must be made:

- The Delegated Acts that clarify the screening criteria under the EU Taxonomy had not all been released at the time of writing this report. Only two environmental objectives (climate change mitigation and climate change adaptation) out of six were published in the Official Journal of the European Union. The report therefore focuses on the first two objectives.

- With regard to the EU Taxonomy, the research focuses on the regulations issued by the European Commission[12] and does not consider national transpositions or national provisions that supplement the European Union legal framework (e.g., article 29 of the French Energy Climate law).

- When technical comparisons are made, the content of the regulations and standards described has been simplified to provide better readability of the core differences between the EU Taxonomy (and the other EU regulations it is referring to) and the PSs and EHS Guidelines. The reader may refer to the original versions for a full understanding of their requirements.

- This report does not compare the EU Taxonomy with IFC's Sustainability Policy and, within IFC's Sustainability Framework, only the PSs, their Guidance Notes and the General EHS Guidelines are considered. For the two sectoral comparative analysis on (i) electricity generation from wind power and (ii) manufacture of cement, the two corresponding Industry Sector Guidelines (ISG) are also considered. ***IFC's Corporate Governance Methodology*** (and the ***Corporate Governance Development Framework*** that is based on it), and the Joint Multilateral Development Bank (MDB) Assessment Framework for Paris Alignment, are not part of the research.

- This report does not compare the EU Taxonomy with the implementation notes, guidance notes and tools made available by the Equator Principles Association. The EP Guidance Note on Climate Change Risk Assessment, for instance, may be relevant for EPFIs to meet some criteria of the EU Taxonomy as it supports the implementation of requirements contained in the Equator Principles 4 (EP4) on climate change risk assessment (Principle 2 and Annex A). However, since this report focuses on the provisions and guidance contained in the IFC PSs and EHS Guidelines, the EP Guidance note on CCRA was excluded from the scope of analysis.

- While the PSs and EHS Guidelines are well established and fully developed frameworks, the EU Taxonomy is still under development. The PSs and EHS Guidelines have represented a widely recognized basis for implementation of E&S risk management for many infrastructure projects, corporate entities and financial institutions globally and in emerging markets over the past decades. Regarding the EU Taxonomy, on the other hand, preparatory work started in 2018 with the establishment of a Technical Expert Group on sustainable finance (TEG) to assist the European Commission in implementing its Action Plan on Financing Sustainable Growth by supporting the development of legislative proposals, notably the technical screening criteria for environmentally sustainable economic activities under the EU Taxonomy. Therefore, the conclusions of this report may be reviewed regularly.

[12] Regulation (EU) 2020/852, and amending Regulation (EU) 2019/2088; Commission Delegated Regulation (EU) 2021/2139 supplementing Regulation (EU) 2020/852; Commission Delegated Regulation (EU) 2022/1214 amending Delegated Regulation (EU) 2021/2139 and Delegated Regulation (EU) 2021/2178; Commission Delegated Regulation (EU) 2021/2178 supplementing Regulation (EU) 2020/852; Regulation (EU) 2019/2088. See details in ***Annex 5: Bibliography***.

2

Comparing strategic objectives and implementation features of the EU Taxonomy and the Performance Standards and EHS Guidelines

2

Comparing strategic objectives and implementation features of the EU Taxonomy and the Performance Standards and EHS Guidelines

This section compares the EU Taxonomy and the PSs and EHS Guidelines in terms of their respective context, strategic objectives, and state of play, as well as some key implementation features. Main takeaways are outlined in this section, and a detailed analysis is available in ***Annex 1: Summary of strategic comparative analysis***.

Finding 1.1:

Although the primary objective of the EU Taxonomy is to enable entities to report the degree of alignment of their activities with a classification system of sustainable activities, whereas the primary objective of the PSs and EHS Guidelines is to enable entities to manage E&S risks, both Frameworks require processes to assess and manage E&S risks and impacts in line with good international industry practice (GIIP). Despite some limitations, the PSs and EHS Guidelines are a credible reference framework to assess the alignment of an activity with the EU Taxonomy's DNSH and MS criteria.

The EU Taxonomy, being the first action of the European Action Plan for Sustainable Finance, consists of a *regulatory framework* that was primarily designed to provide a transparent and common *definition of sustainability*. The PSs and EHS Guidelines, on the other hand, are *international standards and technical reference documents* that were primarily designed for the *assessment and management of E&S risks and impacts*. Nevertheless, the EU Taxonomy and the PSs/EHS Guidelines are compatible since the EU Taxonomy, through the DNSH and MS criteria, includes E&S impacts mitigation measures as fundamental elements for qualifying activities that are considered as sustainable. The next section of this report (***Comparing technical requirements***) further examines the technical comparability of the EU Taxonomy's DNSH and MS requirements with the PSs and EHS Guidelines.

Intent. The EU Taxonomy is primarily designed for *determining whether an economic activity qualifies as environmentally sustainable*. By identifying six environmental objectives, the EU Taxonomy is

focused on the identification of environmentally friendly activities. Both the Commission Delegated Regulation (EU) 2021/2178 ("Disclosure Delegated Act") and Regulation (EU) 2019/2088 ("SFDR") set very detailed reporting rules for financial and non-financial companies to disclose to what extent their business activities are aligned with the EU Taxonomy. While the current EU regulations do not expect specific levels of alignment, they do require activities to meet DNSH and MS criteria in order to be considered aligned with the EU Taxonomy.

On the other hand, the approach to applying the PSs and EHS Guidelines is primarily designed to set expectations of compliance with E&S risk management standards (PSs) and alignment with good international industry practice (EHS Guidelines) for all activities to which they are applicable, regardless of the objective sought by the business activity.

Reference frameworks. Since the EU Taxonomy emanates from the European Commission, it refers and builds on directives, regulations, and policies implemented by EU member countries, and to international standards (UN, OECD). This makes it more challenging to apply the EU Taxonomy outside of the EU. The PSs and EHS Guidelines refer to a broader set of international regulations (US, EU, UK, and Canada) and standards (UN and OECD as in the EU Taxonomy, as well as World Bank, ISO, etc.). They were designed as internationally recognized standards to be applied across a variety of markets globally, including those where local E&S regulations might not be as stringent as international standards.

Targeted undertakings. The Disclosure Delegated Act is a European regulation, and therefore only applies to EU companies: in total, more than 11,000 companies fall under this regulation as of 2022, and this number may increase fivefold by 2026.[13] In contrast, the PSs and EHS Guidelines are international standards and technical reference documents that can be applied globally. When receiving financing from institutions that have adopted the PSs, companies (financial and non-financial) may be required to comply with the PSs and follow the levels and measures provided by the EHS Guidelines in their E&S management systems.

Outcome. As illustrated in Figure 4, the alignment of activities with the EU Taxonomy is a result-driven, four-step approach with a binary outcome: the activity is aligned or not. The PSs and EHS Guidelines, on the other hand, are a process-driven risk management framework, in which E&S risks and impacts have to be identified, assessed, avoided, and where avoidance is not possible, mitigated and managed throughout the life cycle of a business activity. As a consequence, continuous monitoring to manage E&S risks and impacts over time is a key component of the application of the PSs that does not exist as such in the EU Taxonomy. Nevertheless, as noted later in this report, the yearly reporting requirements under the EU Taxonomy imply that a more granular assessment and monitoring of DNSH/MS-related issues is conducted in order to evaluate alignment.

Modularity. The PSs and EHS Guidelines are an outcomes-based framework which emphasizes implementation and results, and their use is expected to be adapted for each business activity, based on the professional opinion of qualified and experienced persons. Relying on a risk management approach, they entail a requirement to assess and monitor on an ongoing basis which E&S risks and impacts have to be addressed, and how they should be addressed, without providing pre-identified, activity-specific requirements.

Even though both the EU Taxonomy and the PSs and EHS Guidelines require professional judgement to determine alignment or compliance, the EU Taxonomy adopts a checklist, activity-based approach: For each eligible economic activity, the Climate Delegated Act[14] and the Complementary Climate Delegated Act[15] establish the technical screening criteria for determining the conditions

[13] At the time of writing this report, around 11,700 companies fell under the Non-Financial Reporting Directive (NFRD) and approximately 50,000 companies will be required to provide sustainability information/reporting under the Corporate Sustainability Reporting Directive (CSRD). Source: ***European Commission - Corporate sustainability reporting***

[14] ***Commission Delegated Regulation (EU) 2021/2139***

[15] ***Commission Delegated Regulation (EU) 2022/1214***

under which it contributes substantially to climate change mitigation (CCM) or climate change adaptation (CCA). However, when it comes to the DNSH requirement, the European Commission has set three options: For a given eligible activity, the DNSH criteria is either *specific* (i.e., tailored to the economic activity being considered), *generic* (i.e., general technical criteria uniformly applied across various economic activities), or *not applicable* (i.e., assuming that the economic activity cannot significantly harm the other environmental objectives). Overall, keeping in mind that an activity can apply both generic and specific DNSH criteria, 31% of CCM activities and 41% of CCA activities apply specific DNSH criteria, 45% of CCM activities and 23% of CCA activities apply generic DNSH criteria, and 24% of CCM activities and 36% of CCA activities deem DNSH criteria not applicable. Further details on coverage of DNSH criteria are outlined in ***Annex 3: EU Taxonomy DNSH heatmap***.

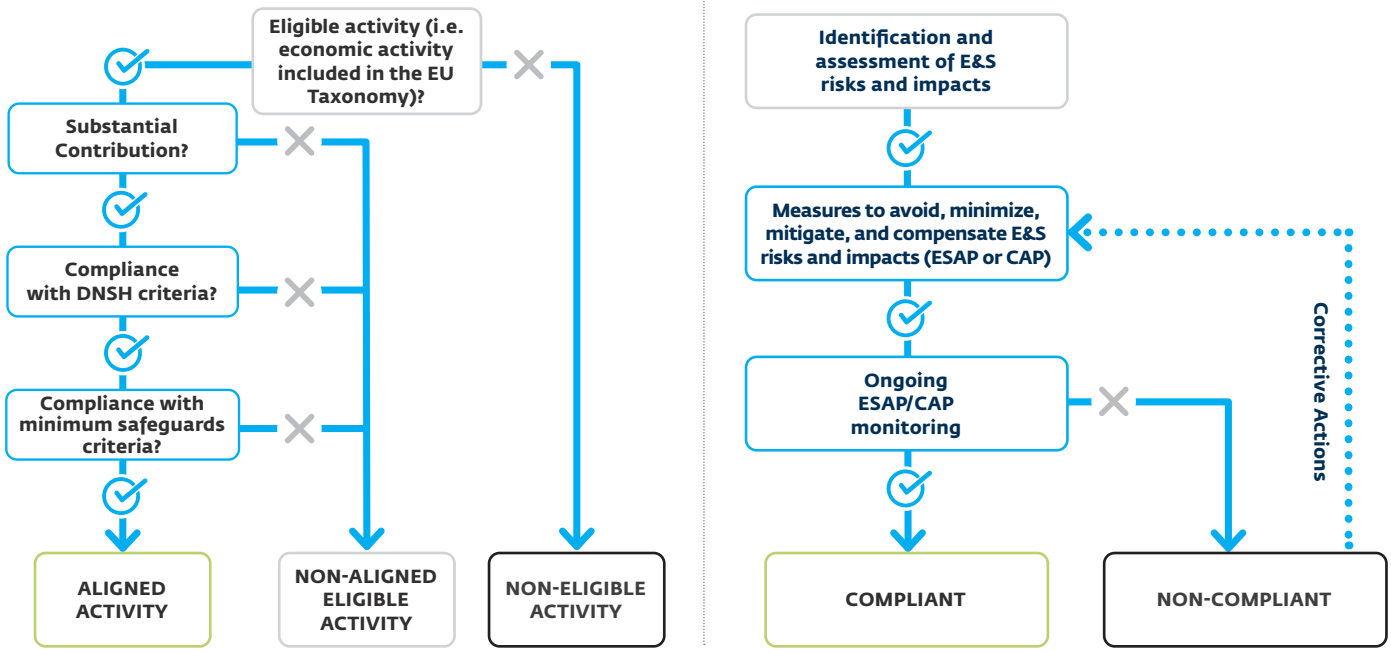
Figure 4: Simplified illustration of how the EU Taxonomy and the PSs/EHSG work

EU Taxonomy

The EU Taxonomy is a leading science-based classification system that defines an economic activity as sustainable. To be defined as Taxonomy-aligned, an economic activity must be included in the list of eligible activities described in the "Climate Delegated Act" and the "Complementary Climate Delegated Act." For each eligible activity, it is verified whether the activity substantially contributes to one of the six environmental objectives (i.e., climate change mitigation, climate change adaptation, sustainable use and protection of water and marine resources, transition to a circular economy, pollution prevention and control, protection and restoration of biodiversity and ecosystems). In addition to contributing to one of the environmental objectives, the activity must do no significant harm to the remaining environmental objectives and comply with minimum safeguards (defined by the guidelines of OECD, UNGPs, ILO and the International Bill of Human rights). When an eligible activity meets all the technical screening criteria (i.e., substantial contribution, DNSH and MS), it is considered "aligned" with the EU Taxonomy.

PSs and EHS Guidelines

The approach to applying the PSs and technical references included in the EHS Guidelines requires companies to comply with the relevant requirements of the PSs, and associated levels and measures provided by the EHS Guidelines. Firstly, an assessment of E&S risks and impacts of the business activity is conducted. Compliance with applicable national laws, stakeholder engagement, and the implementation of an Environmental and Social Management System (ESMS) to avoid, minimize, mitigate, or compensate E&S risks and impacts are key elements that are monitored during the lifetime of the business activity, with the objective for the business activity to achieve compliance with the PSs and meet Good International Industry Practices (GIIP). When compliance gaps are identified during the E&S assessment phase and/or during the monitoring phase, an E&S Action Plan (ESAP) or a Corrective Action Plan (CAP) is prepared and agreed with the company, included in contractual agreements, and its implementation is monitored on a regular basis to support the company in meeting the requirements of the PSs over a reasonable period of time.



Finding 1.2:

Although they are not perfectly overlapping in terms of geographies, E&S topics, impact areas, and sectors covered, the EU Taxonomy and the PSs and EHS Guidelines show a large level of alignment and comparability. The PSs adopt a more holistic approach by identifying and addressing E&S risks and impacts on various stakeholders, while the EU Taxonomy covers certain social and governance-related topics that are not specifically targeted by the PSs and EHS Guidelines.

This section analyzes the interoperability of the EU Taxonomy and the PSs and EHS Guidelines in four areas: the geographies they cover, the E&S topics that are addressed, the impacts areas which need to be evaluated, and the sectors (or economic activities) that are considered.

Geographies. To date, falling under the EU legislative framework, the EU Taxonomy applies only to activities attributable to EU companies, although as noted earlier in this report, requirements regarding disclosure of information on EU Taxonomy alignment will progressively expand to EU subsidiaries of non-EU companies, as well as non-EU activities. On the other hand, the PSs do not have geographic limitations in their applicability, covering both EU and non-EU business activities. As the PSs require compliance with applicable national laws, and because the EU Taxonomy refers to EU regulations (with the relevant exception of DNSH on climate change adaptation), for business activities within the EU, the EU Taxonomy and the PSs and EHS Guidelines are highly compatible. When considering activities outside the boundaries of the EU, where the application of EU regulation may be challenging, the PSs and EHS Guidelines can be considered a credible benchmark for the application of international standards which the EU Taxonomy itself refers to.

E&S topics. With regard to the interoperability of the E&S and governance topics, Table 1 shows that there is no direct correspondence between the terminologies used for the DNSH and MS criteria (EU Taxonomy), and the PSs and EHS Guidelines (i.e. one set of DNSH criteria associated to one environmental objective is not directly and explicitly addressed by one PS, and vice-versa).

However, there are clear opportunities to leverage the PSs and EHS Guidelines to address EU Taxonomy criteria. As observed in ***Table 1***, five out eight PSs, alongside the General EHS Guidelines, largely cover the E&S topics detailed in the technical screening criteria for DNSH and MS in the EU Taxonomy:

- **PS1 ("Assessment and Management of Environmental and Social Risks and Impacts")** and the **General EHS Guidelines** are cross-cutting across the DNSH and MS criteria;
- **PS2 ("Labor and Working Conditions")** requirements largely cover the MS criteria related to the OECD Guidelines for Multinational Enterprises (MNE) and to the UN Guiding Principles on Business and Human Rights (UNGPs) with respect to labor aspects;
- **PS3 ("Resource Efficiency and Pollution Prevention")** requirements largely cover the DNSH criteria related to water, circular economy, and pollution;
- **PS4 ("Community Health, Safety and Security")** refers to risks and impacts to the health and safety of Affected Communities that are covered across the various DNSH and MS criteria; and
- **PS6 ("Biodiversity Conservation and Sustainable Management of Living Natural Resources")** requirements largely cover the DNSH on biodiversity.

The DNSH on climate change adaptation is the only topic that is not explicitly and directly addressed by the PSs and EHS Guidelines, yet is partly addressed in PS1, PS3 and PS6, as illustrated in ***Comparison tool 1: Technical comparative analysis on climate change adaptation***.[16]

Table 1: Comparative table of E&S topics

	PS1 Assessment and Management of Environmental and Social Risks and Impacts	**PS2** Labor and Working Conditions	**PS3** Resource Efficiency and Pollution Prevention	**PS4** Community Health, Safety and Security	**PS5** Land Acquisition and Involuntary Resettlement	**PS6** Biodiversity Conservation and Sustainable Management of Living Natural Resources	**PS7** Indigenous Peoples	**PS8** Cultural Heritage	**EHSG** General Guidelines
DNSH Climate change mitigation	✓	n/a	✓	✓	n/a	✓	n/a	n/a	✓
DNSH Climate change adaptation	~	n/a	~	~	n/a	~	n/a	n/a	✗
DNSH Sustainable use and protection of water / marine resources	✓	n/a	◎	✓	n/a	✓	n/a	n/a	✓
DNSH Transition to a circular economy	✗	n/a	◎	✗	n/a	✗	n/a	n/a	✓
DNSH Pollution prevention and control	✓	n/a	◎	✓	n/a	~	n/a	n/a	✓
DNSH Protection and restoration of biodiversity	✓	n/a	~	✗	n/a	◎	n/a	n/a	✓
MS OECD Guidelines for Multinational Enterprises	✓	◎	✗	✓	~	✗	~	✗	✗
MS UN Guiding Principles on Business and Human Rights	✓	◎	✗	✓	~	✗	~	~	✗

Legend: ◎ Key link (where one DNSH/MS is strongly related to the relevant PS/EHS Guidelines) ~ Medium link ✗ No/marginal link n/a Not Applicable

[16] For EPFIs, this gap may be partly addressed when considering Climate Change Risk Assessment (CCRA) requirements under Equator Principles 4. Per EP4, in addition to applying the IFC PSs, for projects that fall under Category A (projects with potential significant adverse environmental and social risks and/or impacts that are diverse, irreversible or unprecedented) and Category B (projects with potential limited adverse environmental and social risks and/or impacts that are few in number, generally site-specific, largely reversible and readily addressed through mitigation measures), financial institutions shall consider relevant climate-related risks, as defined by the Task Force on Climate-Related Financial Disclosure (TCFD). The depth and nature of the CCRA depend on the type of project, as well as the nature of risks, including their materiality and severity. (see Equator Principles 4 July 2020, ***https://equator-principles.com/app/uploads/The-Equator-Principles_EP4_July2020.pdf***)

✓ Strong link

While the EU Taxonomy "promote[s] appropriate governance frameworks integrating environmental, social and governance factors as referred to in the United Nations-supported Principles for Responsible Investment Governance-related topics" and sets criteria in relation to bribery and corruption, tax governance and tax compliance, and fair competition, those are not directly targeted by the PSs and EHS Guidelines, as they are not E&S issues. However, as mentioned in ***the section on Important Caveats***, IFC's Corporate Governance Methodology, which is not part of this analysis, may help to address some governance-related topics, including those outlined in the OECD Guidelines for MNE. Detailed comparisons are disclosed in the next chapter of the report (***Comparing technical requirements***).

Impact areas. As described in Table 2, both the EU Taxonomy and the PSs and EHS Guidelines are explicitly targeting the potential negative impacts that could affect people and the environment in general. However, while references to local communities are made consistently across all PSs (three of them are even dedicated to them: PS4 "Community Health, Safety, and Security," PS5 "Land Acquisition and Involuntary Resettlement" and PS7 "Indigenous Peoples"), those matters are not specifically addressed in the DNSH and MS criteria of the EU Taxonomy. The EU Taxonomy and the PSs both refer to affected stakeholders and communities, but the PSs go further by identifying specific stakeholder groups (e.g., indigenous people and displaced persons).

Similarly, one PS is dedicated to Cultural Heritage (PS8). Consistent with the Convention Concerning the Protection of the World Cultural and Natural Heritage from UNESCO, this PS aims to protect properties and sites of archaeological, historical, cultural, artistic, and religious significance. The MS criteria of the EU Taxonomy do not explicitly refer to such impact areas, even though by referring to the International Bill of Human Rights, the MS criteria include areas such as "cultural development" and "the cultural life of the community." As for the DNSH criteria, only the generic criteria for DNSH to climate change adaptation considers the issue of impacts to cultural heritage.

Last, even though consumers are not explicitly targeted in either the EU Taxonomy or the PSs and EHS Guidelines, the environmental safety of final goods is covered by the EU Taxonomy's DNSH criteria. Consumer interests are also considered in the OECD Guidelines for MNE, to which the MS criteria refer.

Sectors. Neither the EU Taxonomy nor the PSs and EHS Guidelines use an official classification system of economic activities (e.g., ISIC, NACE, NAICS, etc.). The EU Taxonomy sets its own list of green activities, though some activities make indicative references to NACE codes. The EU Taxonomy does not currently cover all economic sectors as a consequence of its "green" objectives, while the PSs and General EHS Guidelines are applicable to all sectors of the economy.

Table 2: Comparative table of impact areas

	WORKERS	LOCAL COMMUNITIES	CONSUMERS	HUMAN HERITAGE	NATURE/ ENVIRONMENT	SUPPLY CHAINS
EU TAXONOMY	✓	~	~	~	✓	~
PS AND EHSG	✓	✓	✗	✓	✓	✓

Legend: ✓ Impact area addressed substantively ~ Impact area addressed partially ✗ Impact area not directly addressed

The General EHS Guidelines are complemented by Industry Sector Guidelines (ISG), which are sector-specific. ***Table 3*** compares the alignment of the macro-sectors used in the EU Taxonomy with sectors covered by the PSs, General EHS Guidelines, and ISG. The comparison is made at the level of the macro-sectors defined by the EU Taxonomy (13 macro-sectors) and the ISG (8 macro-sectors). It is worth noting that, at the time of writing this report, the EU Taxonomy only included economic activities that are relevant to climate change mitigation and adaptation, but the classification may get broader once the details of the four other environmental objectives are released. The main areas of the EU Taxonomy that are currently not covered by dedicated ISG are those related to the service sector. However, the PSs and General EHS Guidelines are designed to be applicable to all sectors. On the other hand, agribusiness and food production, and mining – two sectors with key E&S challenges, are addressed by the ISG but are absent from the EU Taxonomy.

Annex 2 (***Annex 2: List of economic activities listed in the EU Taxonomy and subject to Industry Sectors EHS Guidelines***) details where EU Taxonomy activities are also covered by the ISG. While some EU Taxonomy activities are directly and well covered by the ISG, such as forestry, manufacturing and water and waste management, others are more challenging to compare. This is the case in the energy sectors, where the economic activities of the EU Taxonomy do not match the ISG, since the EU Taxonomy identifies a large variety of green power sources, only some of which are covered by the ISG.[17] Regarding transport sectors, the EU Taxonomy includes activities related to green and low-carbon vehicles and infrastructures that enable clean transport systems. The ISG cover a wider range of infrastructures that, while sometimes close to the EU Taxonomy definitions, such as for shipping systems, airports or ports, are not always directly comparable. This is in part due to the ultimate objective of the EU Taxonomy, which is to establish the green nature of the infrastructure examined, as opposed to the E&S risk management focus of the PSs and EHS Guidelines. Finally, the EU Taxonomy includes several activities related to the real estate sector, while the ISG provide guidance on construction materials extraction only. However, as noted above, the PSs and General EHS Guidelines are applicable to all sectors, therefore covering activities related to real estate.

Finding 1.3:

Leveraging the PSs and EHS Guidelines to meet the legal provisions of the EU Taxonomy would imply strengthening control and reporting processes.

Reporting. The EU Taxonomy includes extensive requirements related to reporting. The Disclosure Delegated Act and SFDR requirements for public disclosure of E&S information under the EU Taxonomy are much more detailed than disclosure requirements under the policies and frameworks of institutions that have adopted the PSs (e.g., EP4, IFC Sustainability Framework).

The reporting currently required by EP4, for example, would not be sufficient to meet the public disclosure requirements set by the EU Taxonomy. EP4 requires EPFIs to report publicly on transactions and on their Equator Principles implementation processes and experience. However, besides the E&S risk category, project name, calendar year in which the transaction reached financial close, sector, and host country

[17] E.g., cogeneration of heat/cool and power from bioenergy, solar energy, renewable non-fossil gaseous and liquid fuels, electricity generation using solar photovoltaic technology, from ocean energy technologies , etc. (see the detailed list in ***Annex 2***)

Table 3: Comparative table of macro-sectors

		PSs AND GENERAL EHS GUIDELINES	INDUSTRY SECTOR EHS GUIDELINES							
			AGRIBUSINESS / FOOD PRODUCTION (13 sectors)	CHEMICALS (11 sectors)	FORESTRY (4 sectors)	GENERAL MANUFACTURING (12 sectors)	INFRASTRUCTURE (14 sectors)	MINING (1 sector)	OIL AND GAS (3 sectors)	POWER (4 sectors)
EU TAXONOMY (FOR CCM AND CCA OBJECTIVES)	FORESTRY (4 sectors)	✓			✓					
	ENVIRONMENTAL PROTECTION AND RESTORATION ACTIVITIES (1 sector)	✓								
	MANUFACTURING (17 sectors)	✓		✓		✓				
	ENERGY (31 sectors)	✓		✓					✓	✓
	WATER SUPPLY, SEWERAGE, WASTE MANAGEMENT AND REMEDIATION (12 sectors)	✓					✓			
	TRANSPORT (20 sectors)	✓					✓			
	CONSTRUCTION AND REAL ESTATE (7 sectors)	✓				✓				
	INFORMATION AND COMMUNICATION (4 sectors)	✓								
	PROFESSIONAL, SCIENTIFIC AND TECHNICAL ACTIVITIES (4 sectors)	✓								
	FINANCIAL AND INSURANCE ACTIVITIES (2 sectors)	✓								
	EDUCATION (1 sector)	✓								
	HUMAN HEALTH AND SOCIAL WORK ACTIVITIES (1 sector)	✓								
	ARTS, ENTERTAINMENT AND RECREATION (3 sectors)	✓								

Legend: ✓ Strong link

name, it is not required by EP4 to disclose additional E&S information.

Under the EU Taxonomy, the content and format of the reporting expected of companies subject to the Disclosure Delegated Act and SFDR are detailed and structured. The Disclosure Delegated Act provides great details about the content of quantitative key performance indicators (KPIs) to be publicly disclosed (numerator, denominator, accounting policies, etc.), and about the methodology for preparing and reporting these KPIs (including providing standard templates for disclosure). Therefore, if applying the PSs and EHS Guidelines, companies and financial institutions may need to collect and store additional audit evidence that might not be collected or documented through their current reporting processes as users of the PSs and EHS Guidelines.

Finally, it is important to note that the screening of a project's E&S risks and impacts against the PSs and EHS Guidelines must be conducted at the time of the transaction, and their implementation monitored on a regular basis, while reporting against the EU Taxonomy (through the Disclosure Delegated Act and SFDR) is expected to be done once a year. The processes related to the application of the PSs and EHS Guidelines must be implemented for each new business activity to be financed (or advised), and monitored throughout the life of the project, to identify any non-compliance and integrate corrective actions to an ESAP. On the other hand,the implementation procedures of the EU Taxonomy require undertakings to publish the required information on an annual basis in their non-financial statements. Nevertheless, the yearly reporting that is consolidated for the EU Taxonomy implies that the assessment of an activity's alignment with the EU Taxonomy criteria (including DNSH and MS) has been done at a more granular level, therefore compatible with a transaction-by-transaction approach.

Controls. The EU Taxonomy includes further requirements related to third-party assurance. The application of the Disclosure Delegated Act and related reporting against the EU Taxonomy may soon be subject to external and independent controls: the CSRD expects companies within its scope to seek assurance for the sustainability information they report, including the percentage of their activities aligned with the EU Taxonomy.[18]

On the other hand, taking the example of EP4 as a framework for E&S risk management which has adopted the PSs, while EPFIs are expected to rely on independent E&S consultants to perform the E&S due diligence of high-risk transactions, therefore providing a level of independent review, there is no requirement under EP4 to seek third-party assurance for the information reported by EPFIs or their financed activities.

[18] See ***https://finance.ec.europa.eu/capital-markets-union-and-financial-markets/company-reporting-and-auditing/company-reporting/corporate-sustainability-reporting_en#review***

3

Comparing technical requirements: E&S due diligence and performance expectations

3

Comparing technical requirements: E&S due diligence and performance expectations

This chapter compares the technical criteria set by the EU Taxonomy's DNSH and MS requirements, versus those set by the PSs and EHS Guidelines. This report does not aim to compare the entire Climate Delegated Act with the PSs and EHS Guidelines, but to analyze and establish the level of alignment between the two Frameworks by focusing on selected areas, as detailed below.

The comparative analysis focuses on the objective that is common to the EU Taxonomy and the PSs and EHS Guidelines, namely the avoidance, minimization, mitigation, and compensation of negative E&S impacts, which in the EU Taxonomy is embedded in the DNSH principle and MS criteria. This comparison is conducted at two levels: (i) topic level and (ii) sectoral level.

- At ***topic level***, the research compares the generic criteria for DNSH and the MS criteria with the relevant PSs (including their Guidance Notes) and General EHS Guidelines:
  - ***Comparison tool 1:*** *climate change adaptation (CCA)*
  - ***Comparison tool 2:*** *water*
  - ***Comparison tool 3:*** *pollution*
  - ***Comparison tool 4:*** *biodiversity*
  - ***Comparison tool 5:*** *human rights*
  - ***Comparison tool 6:*** *workers' rights*

It must be noted that there are currently no generic DNSH criteria for the climate change mitigation and circular economy objectives of the EU Taxonomy. Therefore, the study is limited to the four generic DNSH criteria related to climate change adaptation, water, pollution, and biodiversity, and the MS related to human rights and workers' rights.

The comparative analysis is split in three parts: the "*what*" section outlines the overall objectives, the "*how*" section describes the way in which the E&S risks and impacts are expected to be analyzed and managed, and the "*how much*" section details the E&S level of performance that is expected from the business activity.

- At ***sector level***, the research provides a deep dive comparison of the DNSH (generic and specific) and MS criteria with the PSs (including their Guidance Notes) and EHS Guidelines (General EHS Guidelines and relevant Industry Sector Guidelines) for two select sectors:
  - **electricity generation from wind power**
  - **manufacture of cement**

The sectoral analysis provides in-depth examples of the interoperability between the EU Taxonomy and the PSs and EHS Guidelines when applied to specific sectors. The sectors have been selected considering the following aspects: (i) both the EU Taxonomy and the Industry Sector Guidelines set specific criteria for them; (ii) they represent two sectors with different E&S risks and impacts; (iii) one sector (wind power) is usually seen by the general public as entailing fewer E&S risks and impacts than the other (cement).

Practical Tools associated with the research: Wind Power and Manufacture of Cement

To make the interoperability between the EU Taxonomy and the PSs and EHS Guidelines operational, new tools are needed to help practitioners clarify expectations in addition to the PSs and EHS Guidelines to comply fully with the DNSH and MS criteria disclosure requirements – and eventually demonstrate alignment with the EU Taxonomy.

To address and illustrate this need in a practical manner, an operational tool was developed building on the comparison tools presented in this report. The tool sets a checklist of what should be done to comply with the EU Taxonomy's DNSH and MS criteria, in cases where the PSs and EHS Guidelines would be applied. For the two sectors covered in depth in this report (Wind Power and Manufacture of Cement), the tool provides a detailed comparison of the requirements of the EU Taxonomy (including generic and specific DNSH, and MS criteria) and those of the PSs and EHS Guidelines (including general and industry sector guidelines). In cases where a PS-based assessment is not sufficient to meet the EU Taxonomy criteria, the tool indicates additional actions to be taken to fully comply with the DNSH and MS criteria.

Of relevance, as the EU Taxonomy does not provide generic criteria for DNSH on climate change mitigation and transition to a circular economy, this report does not provide an analysis on these objectives, however, the sectoral tools do cover these two objectives.

The tools are available at ***www.ifc.org/ifceutaxonomy***.

The main takeaways of this section are summarized below, and additional observations are outlined at the beginning of each comparison tool.

Finding 2.1: [What–Overall objective]

While the EU Taxonomy prescribes a list of E&S topics to be addressed for each economic sector, an analysis performed under the PSs and EHS Guidelines would be tailored to each business activity. If applying the PSs and EHS Guidelines to assess alignment with the EU Taxonomy, it is important to confirm that all the E&S topics pre-identified for a given economic sector in the EU Taxonomy are addressed.

An essential difference between the two Frameworks is illustrated across the technical comparative analyses: with the DNSH criteria, the European Commission has pre-identified the most material environmental risks and impacts for each economic activity.[19] The PSs and EHS Guidelines approach, on the other hand, requires for each business activity a case-by-case identification of relevant E&S risks and impacts, based on specific characteristics of the business activity.[20] This identification leads to an E&S assessment that, in some cases, may not trigger certain PSs (e.g., PS5 is not triggered if no involuntary resettlement is expected, or PS6 may not be triggered if the business activity is developed in a modified habitat or areas with no ecological value). An assessment based on the PSs and EHS Guidelines is therefore intended to address all relevant E&S topics, taking into consideration the specificities that a business activity may have (including its technical design, geographical location, etc.).

The prescriptive nature of the EU Taxonomy is also clear when compared with the PSs and EHS Guidelines at sector level: both for wind power and manufacture of cement, the EU Taxonomy lists a larger number of criteria and establishes more specific thresholds, particularly referring to EU legislation.

The PSs and EHS Guidelines adopt a more holistic approach by addressing multiple issues, broadening the scope across the entire life of the project, and proposing more granular information in terms of prevention and control solutions. While a comprehensive PS-based assessment is likely to capture all relevant E&S topics for a given business activity, screening the activity's alignment with the EU Taxonomy would require additional efforts to verify that all topics listed in the EU Taxonomy are addressed.

Finding 2.2: [How – Means]

The approach to assess and manage E&S risks and impacts in line with the PSs and EHS Guidelines is entirely compatible with the EU Taxonomy: once the most material E&S topics have been identified, both the DNSH and MS, and the PSs and EHS Guidelines rely on a risk-based approach to confirm that relevant mitigation measures are in place.

The primary purpose of the PSs is to assess and address the E&S risks and impacts related to a specific business activity. Similarly, once an E&S topic has been identified as relevant to a given economic activity, the

[19] This applies to environmental risks and impacts. The social and governance topics addressed through the MS criteria, are applied across all sectors.

[20] Even if the EHS Industry Sector Guidelines identify common issues related to a sector, it is the responsibility of the professional to select the ones that are relevant.

EU Taxonomy requires a detailed impact assessment to enforce the DNSH and MS criteria. In particular, the DNSH criteria often refer to an Environmental Impact Assessment (EIA, to be carried out in accordance with Directive 2011/92/EU), screening, or due diligence. Importantly, the generic criteria for DNSH to protection and restoration of biodiversity and ecosystems refers explicitly to PS1 as a relevant benchmark for the completion of an EIA or screening, particularly for activities in third countries:

"For activities in third countries, in accordance with equivalent applicable national law or international standards requiring the completion of an EIA or screening, for example, IFC Performance Standard 1: Assessment and Management of Environmental and Social Risks." (Commission Delegated Regulation (EU) 2021/2139 – Appendix D. footnote 2).

Finding 2.3: [How much – Expected performance]

The scope of applicability of the DNSH criteria is largely restricted to EU borders, and refers mostly to EU regulations, it is thus challenging to implement it in non-EU countries. The PSs and EHS Guidelines set minimum standards applicable even where host country regulations are less stringent, and therefore offer a credible internationally recognized framework to help address this fundamental gap and meet the requirements of the EU Taxonomy for activities in non-EU countries.

The level of performance expected from the EU Taxonomy's DNSH criteria usually refers to EU regulations (e.g., Directive 2000/60/EC, Regulation 1907/2006, etc.) where definitions, lists, and performance thresholds are specific and detailed. This is particularly true for water and pollution. When definitions are not available in other European texts, the DNSH criteria themselves are quite specific (e.g., climate change adaptation). By contrast, for operations in third countries, particularly in emerging markets, local E&S regulations may at times be less stringent, and EU regulations may be challenging to apply. To address this fundamental discrepancy, the PSs and EHS Guidelines refer to international standards and Good International Industry Practice (GIIP) applicable across markets. The PSs and EHS Guidelines provide a complementary framework of reference that is particularly relevant for application of the EU Taxonomy's DNSH criteria in third countries, as the PSs set an expectation of compliance with the most stringent requirements between national law and EHS Guidelines levels and measures (PS Overview, para. 7).

There are also instances where the EU Taxonomy is less prescriptive than the PSs. For example, the expected performance with regards to biodiversity is much more detailed in PS6 than in the generic criteria for DNSH to protection and restoration of biodiversity and ecosystems. The DNSH criteria makes reference to PS6: "For activities located in third countries, in accordance with equivalent applicable national law or international standards, that aim at the conservation of natural habitats, wild fauna and wild flora (...) such an appropriate assessment where the screening determines that it is needed, for example IFC Performance Standard 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources." (Commission Delegated Regulation (EU) 2021/2139 – Appendix D. footnote 3). Therefore, a PS-based assessment would likely largely meet the expectations of the generic criteria

for DNSH to protection and restoration of biodiversity and ecosystems in non-EU countries.

Although the DNSH criteria seem specifically suited for application in EU countries, the DNSH criteria for water and biodiversity also set specific requirements for activities in third countries. In such cases, it is required to perform "equivalent procedural and substantive rules, in accordance with applicable national law or international standards." The PSs and EHS Guidelines offer a credible benchmark for the application of international standards as suggested by the EU Taxonomy. Other DNSH criteria do not have specific provisions for activities in third countries, therefore their application outside of the EU appears more challenging.

Finding 2.4: [How much – Expected performance]

On social aspects, in particular human rights and workers' rights, the PSs and EHS Guidelines and the EU Taxonomy's minimum safeguards are largely similar in terms of overall objectives and coverage of internationally recognized frameworks.

With respect to human rights, both the MS criteria and the PSs refer to the same international frameworks, namely the eight fundamental conventions set out in the Declaration of the International Labour Organization, and the International Bill of Human Rights.

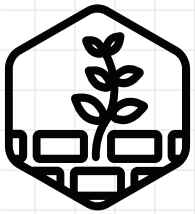
Furthermore, both the MS criteria and PSs recognize the responsibility of business to respect human rights. While some requirements may differ (e.g., expectations of standalone human right due diligence and public disclosure), both the EU Taxonomy and PSs refer to a risk-based approach and set out similar expectations in terms of applying a mitigation hierarchy to assess, mitigate, and monitor risks and impacts, and requiring ongoing stakeholder engagement. The PSs go further than Article 18 of the EU Taxonomy in specifying expectations about how companies implement their responsibilities to assess and manage E&S risk and impacts in practice and with regards to specific vulnerable groups.

Regarding workers' rights, both the EU Taxonomy and PSs have a similar approach to safeguarding the rights of workers defined in accordance with international conventions and instruments, including the ILO's fundamental conventions. However, the requirements of the PSs reflect different employment relationships between the company and the workers (direct workers vs. contracted workers vs. supply chain workers).

By referring to the OECD MNE Guidelines, the MS criteria includes some governance-related topics, such as bribery, competition and taxation, which are not addressed by the PSs and EHS Guidelines. As noted in the ***Important Caveats*** section of this report, these issues are thus not within the scope of analysis.

Comparing technical requirements: Navigating the generic criteria for DNSH and MS

Comparison Tool 1:



Technical comparative analysis on climate change adaptation

Takeaways that are specific to climate change adaptation:

The PSs do not explicitly require a climate risk and vulnerability assessment to be conducted; however, a PS-based environmental and social assessment would consider a business activity's risks and impacts associated with climate change, including opportunities for climate change adaptation. The business activity's vulnerability to climate change and its potential to increase the vulnerability of ecosystems and communities should dictate the extent of climate change considerations in the assessment process. The EU Taxonomy's generic criteria for DNSH to climate change adaptation provides greater details than the PSs, with specific issues to consider and performance expectations.

There is no PS specifically covering climate change adaptation, however, as indicated in the Overview of PSs, "a number of cross-cutting topics such as climate change … are addressed across multiple Performance Standards." PS1 requires a thorough assessment and management of any relevant E&S risks and impacts, including opportunities for climate change adaption,[21] and the remaining PSs (PS2-PS8) also consider risks and impacts associated with climate change, especially focusing on risks and impacts on stakeholders, including workers, affected communities, as well as biodiversity areas and cultural heritage sites (See "How – Means" in the table below).

Conversely, the EU Taxonomy lists the sub-topics to be considered in detail (climate hazards, climate projections, side-effects on the resilience of other people, of nature, of cultural heritage, of assets, and of other economic activities), and distinguishes the performance expected for activities using existing physical assets from the performance expected for activities using newly-built physical assets.

The detailed comparison is available below:

[21] It is worth mentioning that IFC defines and enforces internal procedures and processes to assess climate-related risks at facility level and to identify cost-effective technical adaptation measures that will be integrated in the technical design of the project.

	DNSH CRITERIA FROM THE EU TAXONOMY	IFC PSs AND WBG EHS GUIDELINES
WHAT – OVERALL OBJECTIVE	Apply the technical screening criteria for "do no significant harm" to climate change adaptation to all activities that can lead to an increased adverse impact of the current climate and the expected future climate, on the activity itself or on people, nature, or assets.	Apply the relevant IFC PSs/WBG EHS Guidelines when changing weather patterns due to climate change has been identified as a potential hazard/risk (based on an environmental assessment and the professional opinion of qualified and experienced persons), and when those standards are more stringent that host country regulation. A project's vulnerability to climate change and its potential to increase the vulnerability of ecosystems and communities to climate change should dictate the extent of climate change considerations in the risks and impacts identification process. > Project vulnerability is a function of the type of infrastructure involved, the activities supported by the project, and the geographical location of the project (Guidance Note 1, GN33). > Vulnerability is the degree to which a system is susceptible to, or unable to cope with, adverse effects of climate change, including climate variability and extremes (Guidance Note 1, GN33). > Vulnerability is a function of the character, magnitude and rate of climate change and variation to which a system is exposed, its sensitivity, and its adaptive capacity (Guidance Note 1, GN33).

DNSH CRITERIA FROM THE EU TAXONOMY

- ***Generic criteria for DNSH to climate change adaptation*** (Commission Delegated Regulation (EU) 2021/2139, Appendix A)

IFC PSs AND WBG EHS GUIDELINES

- **Performance Standard 1** and **related guidance note** (Assessment and Management of E&S Risks and Impacts)
- **Performance Standard 2** and **related guidance note** (Labor and Working Conditions)
- **Performance Standard 3** and **related guidance note** (Resource Efficiency and Pollution Prevention)
- **Performance Standard 4** and **related guidance note** (Community Health, Safety, and Security)
- **Performance Standard 5** and **related guidance note** (Land Acquisition and Involuntary Resettlement)
- **Performance Standard 6** and **related guidance note** (Biodiversity Conservation and Sustainable Management of Living Natural Resources)
- **Performance Standard 7** and **related guidance note** (Indigenous Peoples)
- **Performance Standard 8** and **related guidance note** (Cultural Heritage)

WHAT – OVERALL OBJECTIVE

Apply the technical screening criteria for "do no significant harm" to climate change adaptation to all activities that can lead to an increased adverse impact of the current climate and the expected future climate, on the activity itself or on people, nature, or assets.

Apply the relevant IFC PSs/WBG EHS Guidelines when changing weather patterns due to climate change has been identified as a potential hazard/risk (based on an environmental assessment and the professional opinion of qualified and experienced persons), and when those standards are more stringent that host country regulation.

A project's vulnerability to climate change and its potential to increase the vulnerability of ecosystems and communities to climate change should dictate the extent of climate change considerations in the risks and impacts identification process.

> Project vulnerability is a function of the type of infrastructure involved, the activities supported by the project, and the geographical location of the project (Guidance Note 1, GN33).

> Vulnerability is the degree to which a system is susceptible to, or unable to cope with, adverse effects of climate change, including climate variability and extremes (Guidance Note 1, GN33).

> Vulnerability is a function of the character, magnitude and rate of climate change and variation to which a system is exposed, its sensitivity, and its adaptive capacity (Guidance Note 1, GN33).

	DNSH CRITERIA FROM THE EU TAXONOMY	IFC PSs AND WBG GENERAL EHS GUIDELINES
HOW – MEANS[22]	A **robust climate risk and vulnerability assessment** that identifies physical climate risks that are material to the activity: (a) Screening of the activity to identify which physical climate risks may affect the performance of the economic activity during its expected lifetime. (b) Where the activity is assessed to be at risk from one or more climate-related hazards, a climate risk and vulnerability assessment to assess the materiality of the physical climate risks on the economic activity. (c) Assessing adaptation solutions that can reduce the identified physical climate risk (Commission Delegated Regulation (EU) 2021/2139, Appendix A, para. I). > The physical climate risks to be considered include the following hazards: (a) Temperature-related: chronic hazards (changing temperature, heat stress, temperature variability, permafrost thawing) and acute hazards (heat wave, cold wave/frost, wildfire). (b) Wind-related: chronic hazards (changing wind patterns) and acute hazards (cyclone, hurricane, typhoon, storm, tornado). (c) Water-related: chronic hazards (changing precipitation patterns and types, precipitation or hydrological variability, ocean acidification, saline intrusion, sea level rise, water stress) and acute hazards (drought, heavy precipitation, flood, glacial lake outburst). (d) Solid mass-related: chronic hazards (coastal erosion, soil degradation, soil erosion, solifluction) and acute hazards (avalanche, landslide, subsidence) (Commission Delegated Regulation (EU) 2021/2139, Appendix A, para. II). > The climate risk and vulnerability assessment is proportionate to the scale of the activity and its expected lifespan, such that: (a) For activities with an expected lifespan of less than 10 years, the assessment is performed, at least by using climate projections at the smallest appropriate scale. (b) For all other activities, the assessment is performed using the highest available resolution, state-of-the-art climate projections across the existing range of future scenarios (Intergovernmental Panel on Climate Change representative concentration pathways RCP2.6, RCP4.5, RCP6.0 and	A process of **environmental and social assessment** conducted by the client, in coordination with other responsible government agencies and third parties as appropriate, and an **ESMS** that is appropriate to the nature and scale of the project and commensurate with the level of its E&S risks and impacts (PS1, para. 5). > Where the project involves specifically identified physical elements, aspects and facilities that are likely to generate impacts and is located in an area of recognized climate risk, the client should consider incorporating certain aspects related to climate into its baseline analyses, using climatologic data and accounting for projected variability in climatic and environmental conditions that could occur over the life of the project. The client should use the most current climatologic data in the design of project's infrastructure, and for other relevant studies, such as, for example, pollutant fate and transport models, and water resources impact studies (Guidance Note 1, GN34). > Specific identification of risks associated with climate change should be conducted for projects located in recognized climate sensitive areas (i.e., those potentially affected by impacts of climate-related stimuli, including extreme weather events, such as floods and droughts, extended periods of warm temperatures, variability in precipitation, windstorms, cold spells and freeze-thaw cycles, coastal erosion, and coastal flooding due to sea-level rise) (Guidance Note 1, GN35). > The project's direct impacts on priority ecosystem services may result in adverse health and safety risks and impacts to Affected Communities. Where appropriate and feasible, the client will identify those risks and potential impacts on priority ecosystem services that may be exacerbated by climate change (PS4, para. 8). Climate-dependent projects (i.e., those projects whose operation is closely tied to local or regional hydrologic regimes) should evaluate potential impacts due to predicted or observed changes in hydrology, including a review of reasonably accessible historical hydrologic information (including frequency and intensity of hydrologic events) and scientifically projected trends. The evaluation of climate-related risks should include a discussion of potential changes in hydrologic scenarios, and the resulting potential impacts and mitigation measures considered in the design and operation of the project (Guidance Note 4, GN15).

[22] As previously noted, Climate Change Risk Assessment (CCRA) requirements under Equator Principles 4 may complement a PS-based assessment to meet the climate risk and vulnerability assessment required under the EU Taxonomy's DNSH to climate change adaptation. As per EP4, the depth and nature of the CCRA depend on the type of project, as well as the nature of risks, including their materiality and severity.

	DNSH CRITERIA FROM THE EU TAXONOMY	IFC PSs AND WBG GENERAL EHS GUIDELINES
HOW – MEANS (CONT'D)	RCP8.5) consistent with the expected lifetime of the activity, including, at least, 10 to 30 year climate projections scenarios for major investments (Commission Delegated Regulation (EU) 2021/2139, Appendix A, para. I). > The climate projections and assessment of impacts are based on best practice and available guidance and take into account the state-of-the-art science for vulnerability and risk analysis and related methodologies in line with the most recent Intergovernmental Panel on Climate Change (IPCC) reports, scientific peer-reviewed publications, and open source (such as Copernicus services managed by the European Commission) or paying models (Commission Delegated Regulation (EU) 2021/2139, Appendix A, para. I).	> The assessment may consider issues to which – if unmitigated by the project – climate change may provoke risks and impacts across the following Performance Standards: (a) **PS2 – Labor and Working Conditions:** Potential risks and impacts of climate change on workers' health and safety, in terms of exposure to climate hazards and weather emergencies, increase of health issues risks due to changes in weather pattern, and potential impacts on workers' accommodation by avoiding areas prone to weather and climate disasters. (b) **PS3 – Resource Efficiency and Pollution Prevention:** Potential risks and impacts to resource efficiency and to the environment in the project's area of influence including changes in weather patterns having an effect on resource-use (availability) or pollution by the project. (c) **PS4 – Community Health, Safety and Security:** Potential risks and impacts to health and safety of project-affected communities, such as increased exposure of local communities to accidents and health concerns, and the potential harm to the public from infrastructure failures caused by extreme weather events and climate hazards. (d) **PS5 – Land Acquisition and Involuntary Resettlement:** Potential risks and impacts to physically and economically displaced people by the project, including adverse effects of climate change on restoration of livelihoods and standards of living of displaced persons, and restrictions on access to land or use of other resources. (e) **PS6 – Biodiversity Conservation and Sustainable Management:** Potential risks and impacts to areas of high biodiversity value and to ecosystem services in the project's area of influence, such as changes in weather pattern or extreme events posing a threat to biodiversity and habitats. (f) **PS7 – Indigenous Peoples:** Potential risks and impacts to indigenous communities near the project's location. (g) **PS8 – Cultural Heritage:** Potential risks and impacts of climate change and extreme weather events in the cultural heritage sites in project's area of influence.
HOW MUCH – EXPECTED PERFORMANCE	> **For existing activities and new activities using existing physical assets,** implement physical and non-physical solutions ("adaptation solutions"), over a period of time of up to five years, that reduce the most important identified physical climate risks that are material to that activity. An adaptation plan for the implementation of those solutions is drawn up accordingly (Commission Delegated Regulation (EU) 2021/2139, Appendix A, para. I). > **For new activities and existing activities using newly built physical assets,** integrate the adaptation solutions that reduce the most important	**Define monitoring program and adaptation measures,** consistent with the potential direct and indirect climate-related adverse effects (i) that may affect the project during its life cycle, and/or (ii) that may be exacerbated by the project (Guidance Note 1, GN35). The E&S assessment will guarantee the identification and assessment of the E&S risks and impacts of climate change due to underperformance of the project. The assessment should particularly investigate: (i) the risks, as well as opportunities,

	DNSH CRITERIA FROM THE EU TAXONOMY	IFC PSs AND WBG GENERAL EHS GUIDELINES
HOW MUCH – EXPECTED PERFORMANCE (CONT'D)	identified physical climate risks that are material to that activity at the time of design and construction and has implemented them before the start of operations (Commission Delegated Regulation (EU) 2021/2139, Appendix A, para. I). > **The adaptation solutions implemented:** (a) Do not adversely affect the adaptation efforts or the level of resilience to physical climate risks of other people, of nature, of cultural heritage, of assets and of other economic activities. (b) Are consistent with local, sectoral, regional or national adaptation strategies and plans. (c) Consider the use of nature-based solutions or rely on blue or green infrastructure (in accordance with **Green Infrastructure (GI) — Enhancing Europe's Natural Capital (COM/2013/0249 final)**) to the extent possible (Commission Delegated Regulation (EU) 2021/2139, Appendix A, para. I). A GI is "a strategically planned network of natural and semi-natural areas with other environmental features designed and managed to deliver a wide range of ecosystem services. It incorporates green spaces (or blue if aquatic ecosystems are concerned) and other physical features in terrestrial (including coastal) and marine areas. On land, GI is present in rural and urban settings" (COM/2013/0249 final, para. 1.2).	resulting from climate change impacts on the project; (ii) the level of those climate-related risks (low/medium/high); (iii) relevant impacts and risk mitigating actions and the estimated level of residual risks after possible mitigating actions; (iv) consistency with the national/broad context for climate resilience

Comparison Tool 2:

Technical comparative analysis on water

Takeaways that are specific to water:

The EU Taxonomy provides detailed requirements related to the quality status of surface and groundwater within the EU, while the PSs and EHS Guidelines provide more generic guidance on water body status, and more specific guidance on wastewater levels and measures. For activities in third countries, the PSs and EHS Guidelines provide a highly relevant framework of reference to meet the generic criteria for DNSH to sustainable use and protection of water and marine resources.

The EU Taxonomy is aligned with the EU goal to achieve a well-defined and greatly detailed objective regarding the quality status of European surface and groundwater resources (see Annex V of Directive 2000/60/EC). The PSs and EHS Guidelines are more generic on water body status (see Section 11 of PS3 and "General Liquid Effluent Quality" section in the General EHS Guidelines), but they are very specific in terms of wastewater thresholds, which is a topic of marginal consideration in the EU Taxonomy.

Outside of the EU, the EU Taxonomy sets the expectation to "avoid deterioration or prevention of good water status and good ecological potential" by taking "equivalent procedural and substantive rules" that are pursued "in accordance with applicable national law or international standards." In line with these expectations, the PSs and EHS Guidelines provide robust and well-established standards, and encompass water management notably through PS1, PS3, PS6, and the General EHS Guidelines.

The detailed comparison is available below:

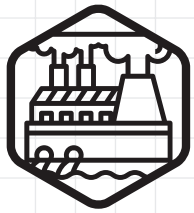
	DNSH CRITERIA FROM THE EU TAXONOMY	IFC PSs AND WBG GENERAL EHS GUIDELINES
	Generic criteria for DNSH to sustainable use and protection of water and marine resources (Commission Delegated Regulation (EU) 2021/2139, Appendix B)	**Performance Standard 1** and **related guidance note** (Assessment and Management of E&S Risks and Impacts) **Performance Standard 3** and **related guidance note** (Resource Efficiency and Pollution Prevention) **Performance Standard 6** and **related guidance note** (Biodiversity Conservation and Sustainable Management of Living Natural Resources) **General EHS Guidelines** (1.3 for Wastewater and Ambient Water Quality and 1.4 for Water Conservation) + industry specific EHS Guidelines (as applicable)
WHAT – OVERALL OBJECTIVE	Apply the technical screening criteria for "do no significant harm" to sustainable use and protection of water and marine resources to all activities that can pose a risk to such sustainable use and protection. Those criteria should aim at avoiding activities that are detrimental to the good status or the good ecological potential of bodies of water, including surface water and groundwater, or to the good environmental status of marine waters, by requiring that environmental degradation risks are identified and addressed, in accordance with a water use and protection management plan.	Apply the relevant PSs/General EHS Guidelines when water has been identified as a potential hazard/risk (based on an environmental assessment and the professional opinion of qualified and experienced persons) and when those standards are more stringent that host country regulation: > The client will implement measures for **improving efficiency in its consumption of water**, with a focus on areas that are considered core business activities (PS3, para. 6). > When the project is a potentially significant consumer of water, the client shall adopt measures that avoid or **reduce water usage** so that the project's water consumption does not have significant adverse impacts on others (PS3, para. 9). Water is addressed through multiple PSs and General EHS Guidelines (PS4 'Ecosystem Services' chapter, PS6 'Management of Ecosystem Services' chapter, and EHSG 3.1 "Water Quality and Availability"). However, the described "expected performance" is based on PS3 and EHSG 1.3 and 1.4, where water-related issues are mostly addressed. Water-related requirements of the PSs are mainly intended **to avoid significant impacts on the host communities**, in particular the potential for significant impacts on the **quality** (e.g., due to project's wastewater discharges), **quantity** (e.g., due to project's use of water or diversion of water bodies), **availability of water**, and/or on **water-related ecoservices** by the local communities.
HOW – MEANS	*In the EU:* > Identify and address **environmental degradation risks** related to **preserving water quality and avoiding water stress** (Commission Delegated Regulation (EU) 2021/2139, Appendix B). If an **Environmental Impact Assessment (EIA)** in accordance with **Directive 2011/92/EU** is prepared (provided the risks identified have been addressed), no additional impact assessment is required. In the EU, an EIA is mandatory for certain	> **A process of environmental and social assessment** conducted by the client, in coordination with other responsible government agencies and third parties as appropriate, and an ESMS that is appropriate to the nature and scale of the project and commensurate with the level of its E&S risks and impacts (PS1, para. 5). > **Wastewater management:** (a) For **industrial wastewater**, the treatment approaches should reflect the wastewater characteristics. In case of (i) process wastewater, wastewater

	DNSH CRITERIA FROM THE EU TAXONOMY	IFC PSs AND WBG GENERAL EHS GUIDELINES
HOW – MEANS (CONT'D)	projects and optional for others (case-by-case examination or thresholds/ criteria set by the Member State) (Directive 2011/92/EU, art. 4 (2)) and provides a description of the project, including an estimate, by type and quantity, of expected residues and emissions (water, air and soil pollution, noise, vibration, light, heat, radiation, etc.) resulting from the operation of the proposed project (Directive 2011/92/EU, Annex IV). > Based on the results above, prepare a **Water Management Plan** in collaboration with relevant stakeholders (Commission Delegated Regulation (EU) 2021/2139, Appendix B). *In third countries:* Perform equivalent procedural and substantive rules (a water use and protection management plan developed in consultation with relevant stakeholders), in accordance with applicable national law or international standards, in order to assess the impact of the activities on the identified status or ecological potential of potentially affected water body or bodies (Commission Delegated Regulation (EU) 2021/2139, Appendix B, footnote 1).	treatment technologies should avoid uncontrolled air emissions of volatile chemicals and residuals be disposed in compliance with local regulatory requirements, or at least with protection of public health and safety; (ii) wastewater from utilities operations, water management strategies should be adopted, such as the adoption of water conservation opportunities for facility cooling systems, the use of heat recovery/cooling methods, the minimization of use of antifouling and corrosion inhibiting chemicals and testing for residual biocides and other pollutants of concern; (iii) stormwater, it should be separated from process and sanitary wastewater streams, potential sources of contamination should be prevented, runoffs should be properly treated and managed, oil water separators and grease traps should be installed (EHSG, para. 1.3). (b) For **sanitary wastewater**, recommended sanitary wastewater management strategies include: (i) segregation of wastewater streams to ensure compatibility with selected treatment option; (ii) segregation and pretreatment of oil and grease containing effluents prior to discharge into sewer systems; (iii) treatment to meet national or local standards for sanitary wastewater discharges (EHSG, para. 1.3). (c) For **emissions from wastewater treatment operations**, (i) measures to prevent, minimize, and control potential environmental impacts associated with the storage, handling and use of disinfection chemicals in water treatment facilities; (ii) measures to manage air emissions include installation of an ozone-destroying device at the exhaust of the ozone-reactor (EHSG, para. 1.3). (d) For **residuals from wastewater treatment operations**, sludge from a waste treatment plant needs to be evaluated on a case-by-case basis to establish whether it constitutes a hazardous or a non-hazardous waste and managed accordingly (EHSG, para. 1.3). > **Water conservation management:** (a) Identification, regular measurement, and recording of **principal flows** within a facility (EHSG, para. 1.4). (b) Definition and regular review of **performance targets**, which are adjusted to account for changes in major factors affecting water use (e.g., industrial production rate) (EHSG, para. 1.4). (c) Regular comparison of water flows with performance targets to identify **where action should be taken** to reduce water use (EHSG, para. 1.4). (d) Water measurement (metering) should emphasize **areas of greatest water use** (EHSG, para. 1.4).

	DNSH CRITERIA FROM THE EU TAXONOMY	IFC PSs AND WBG GENERAL EHS GUIDELINES
HOW – MEANS (CONT'D)		**According to PS3, the client shall promote the sustainable use of resources, including water:** > **Resources efficiency:** Clients developing new projects or expansions shall assess and incorporate environmental aspects, such as total use and efficiency of use of resources, including water issues (e.g., potable water supplies, the expected project demand for water). The client will implement technically feasible and cost-effective measures for improving efficiency in its consumption of water (PS3, para. 6). > **Water consumption:** When the project is a potentially significant consumer of water, in addition to applying the resource efficiency requirements of this PS, the client shall adopt measures that avoid or reduce water usage so that the project's water consumption does not have significant adverse impacts on others. These measures include, but are not limited to, the use of additional technically feasible water conservation measures within the client's operations, the use of alternative water supplies, water consumption offsets to reduce total demand for water resources to within the available supply, and evaluation of alternative project locations (PS3, para. 9). Client's projects should not cause or contribute to unacceptable water stress on third parties (including local communities) (Guidance Note 6, GN25). > **Water pollution:** The client will avoid the release of pollutants or, when avoidance is not feasible, minimize and/or control the intensity and mass flow of their release. This applies to the release of pollutants to air, water, and land due to routine, non-routine, and accidental circumstances with the potential for local, regional, and transboundary impacts. Where historical pollution such as land or ground water contamination exists, the client will seek to determine whether it is responsible for mitigation measures (PS3, para. 10). According to **PS4**, the client will avoid or minimize the potential for community exposure to water-borne, water-based, water-related, and vector-borne diseases, and communicable diseases that could result from project activities, taking into consideration differentiated exposure to and higher sensitivity of vulnerable groups (PS4, para. 9).
HOW MUCH – EXPECTED PERFORMANCE	*In the EU:* > Achieve **good water status**: (a) **For surface water, having both "good ecological status" and "good surface water chemical status"**, as defined in **Directive 2000/60/EC**. A 'good ecological status' is met when "the values of the biological quality elements for the surface water body type show low levels of distortion resulting from human activity but deviate only slightly from those normally associated with the surface water body type under undisturbed conditions" (Directive 2000/60/EC, para. 1.2). The definitions vary depending on the	> **For wastewater**, with detailed recommendations by topic (liquid effluent quality, wastewater management, and monitoring) and by sectors (industry sector guidelines): (a) Understand the quality, quantity, frequency, and sources of liquid effluents in its installations. This includes knowledge about the locations, routes, and integrity of internal drainage systems and discharge points. (b) Plan and implement the segregation of liquid effluents principally along industrial, utility, sanitary, and stormwater categories, in order to limit

	DNSH CRITERIA FROM THE EU TAXONOMY	IFC PSs AND WBG GENERAL EHS GUIDELINES
HOW MUCH – EXPECTED PERFORMANCE (CONT'D)	surface water (rivers, lakes, transitional waters, coastal waters) and consider the quality of several elements: biological (composition, abundance and biomass of phytoplankton, flora and fauna), hydro-morphological, chemical and physico-chemical (Directive 2000/60/EC, para. 1.1). A 'good surface water chemical status' is met when concentrations of pollutants for mercury, cadmium, hexachlorocyclohexane and dangerous substance do not exceed the environmental quality standards established in other EU Directives (82/176/EEC, 83/513/EEC, 84/156/EEC, 84/491/EEC, 86/280/EEC) (Directive 2000/60/EC, Annex IX). (b) **For groundwater, having both "good quantitative status" and "good groundwater chemical status"**, as defined in Directive 2000/60/EC. A "good quantitative status" is met when "the level of groundwater in the groundwater body is such that the available groundwater resource is not exceeded by the long-term annual average rate of abstraction. Accordingly, the level of groundwater is not subject to anthropogenic alterations (such as would result in (i) failure to achieve the environmental objectives specified for associated surface waters; (ii) any significant diminution in the status of such waters; and (iii) any significant damage to terrestrial ecosystems which depend directly on the groundwater body), and alterations to flow direction resulting from level changes may occur temporarily, or continuously in a spatially limited area, but such reversals do not cause saltwater or other intrusion, and do not indicate a sustained and clearly identified anthropogenically induced trend in flow direction likely to result in such intrusions" (Directive 2000/60/EC, Annex V, table 2.1.2). A "good quantitative status" is met when "the chemical composition of the groundwater body is such that the concentrations of pollutants (i) do not exhibit the effects of saline or other intrusions, (ii) do not exceed the quality standards applicable under other relevant Community legislation and (iii) are not such as would result in failure to achieve the environmental objectives specified for associated surface waters nor any significant diminution of the ecological or chemical quality of such bodies nor in any significant damage to terrestrial ecosystems which depend directly on the groundwater body" (Directive 2000/60/EC, Annex V, table 2.3.2). *In third countries:* Avoid deterioration or prevention of good water status and good ecological potential or, where this is not possible, justified by the lack of better environmental alternatives which are not disproportionately costly/technically unfeasible, and all practicable steps are taken to mitigate the adverse impact on the status of the body of water (Commission Delegated Regulation (EU) 2021/2139, Appendix B, footnote 1).	the volume of water requiring specialized treatment. Characteristics of individual streams may also be used for source segregation. (c) Identify opportunities to prevent or reduce wastewater pollution through such measures as recycle/reuse within their facility, input substitution, or process modification (e.g., change of technology or operating conditions/modes). (d) Assess compliance of their wastewater discharges with the applicable: (i) discharge standard (if the wastewater is discharged to a surface water or sewer), and (ii) water quality standard for a specific reuse (e.g., if the wastewater is reused for irrigation) (EHSG, para. 1.3). > For **water conservation**, with detailed recommendations by topic (water monitoring and management, water reuse and recycling, building facility operations, cooling systems, and heating systems) and by sectors (industry sector guidelines): implement water conservation programs that promote the continuous reduction in water consumption and achieve savings in the water pumping, treatment and disposal costs (EHSG, para. 1.4).

Comparison Tool 3:



Technical comparative analysis on pollution

Takeaways that are specific to pollution:

Compared to the EU Taxonomy's generic criteria for DNSH to pollution prevention and control regarding use and presence of chemicals, the PSs and EHS Guidelines encompass additional considerations related to pollution prevention. Generally, a PS-based assessment, particularly following PS3 (Resource efficiency and pollution prevention) and associated requirements to meet the levels and measures of the EHS Guidelines, would cover comprehensively the DNSH criteria for pollution prevention and control

The PSs and EHS Guidelines adopt a broad definition of pollution, while the EU Taxonomy has a narrower approach. Notably, the generic criteria for DNSH to pollution prevention and control regarding use and presence of chemicals focuses on chemical substances: even if such substances have impacts on air, water and land, the DNSH criteria do not refer explicitly to air pollution[23] or land pollution.[24] Hazardous and non-hazardous waste are often ignored by the EU Taxonomy, whereas the topic is extensively covered by the PSs and EHS Guidelines.[25] Another noticeable difference in terms of scope is that the EU Taxonomy is targeting "the manufacture, placing on the market or use" of specific substances, while the PSs and EHS Guidelines focus primarily on operations (raw material, production, and transportation).

In terms of convergence, the EU Taxonomy, the PSs and the EHS Guidelines all address health and safety topics and refer to good international industry practice for hazardous materials handling, storage and transport, including emergency preparedness and response and process safety.

The detailed comparison is available below:

[23] "Air quality" is part of certain specific DNSH under "pollution prevention and control regarding use and presence of chemicals" in relation to geothermal energy and bioenergy.

[24] The potential risks to generate a significant increase in the "emissions of pollutants to land" is only used as a specific DNSH criteria for professional, scientific and technical activities.

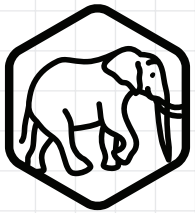
[25] In the EU Taxonomy, waste would fall under the technical screening criteria for "do no significant harm" to transition to a circular economy but there are no generic criteria: about 30 economic activities only have a DNSH related to waste under "transition to a circular economy."

	DNSH CRITERIA FROM THE EU TAXONOMY	IFC PSs AND WBG GENERAL EHS GUIDELINES
	Generic criteria for DNSH to pollution prevention and control regarding use and presence of chemicals (Commission Delegated Regulation (EU) 2021/2139, Appendix C)	**Performance Standard 1** and **related guidance note** (Assessment and Management of E&S Risks and Impacts) **Performance Standard 3** and **related guidance note** (Resource Efficiency and Pollution Prevention) **General EHS Guidelines** (1.1 for Air Emissions and Ambient Air Quality, 1.3 for Wastewater and Ambient Water Quality, 1.5 for Hazardous Materials Management, 1.6 for Waste Management, and 1.8 for Land Contamination) + industry specific EHS Guidelines (as applicable)
WHAT – OVERALL OBJECTIVE	Apply the technical screening criteria for "do no significant harm" to pollution prevention and control regarding use and presence of chemicals to all activities that can lead to pollution into air, water or land.	Apply the relevant PSs/General EHS Guidelines when pollution has been identified as a potential hazard/risk (based on an environmental assessment and the professional opinion of qualified and experienced persons) and when those standards are more stringent that host country regulations: > The client will avoid the release of pollutants or, when avoidance is not feasible, minimize and/or control the intensity and mass flow of their release. This applies to the release of pollutants to air, water, and land due to routine, non-routine, and accidental circumstances with the potential for local, regional, and transboundary impacts (PS3, para. 10). > The client will avoid the generation of hazardous and non-hazardous waste materials. Where waste generation cannot be avoided, the client will reduce the generation of waste, and recover and reuse waste in a manner that is safe for human health and the environment. Where waste cannot be recovered or reused, the client will treat, destroy, or dispose of it in an environmentally sound manner that includes the appropriate control of emissions and residues resulting from the handling and processing of the waste material (PS3, para. 12). > Hazardous materials are sometimes used as raw material or produced as product by the project. The client will avoid or, when avoidance is not possible, minimize and control the release of hazardous materials (PS3, para. 13).
HOW – MEANS	Not specified.	A process of **environmental and social assessment** conducted by the client, in coordination with other responsible government agencies and third parties as appropriate, and an **ESMS** that is appropriate to the nature and scale of the project and commensurate with the level of its environmental and social risks and impacts (PS1, para. 5). > **When developing a new project that is expected to produce potentially significant emissions of pollutants,** clients should evaluate whether the existing background ambient levels are in compliance with the relevant ambient quality guidelines and/or standards (Guidance Note 3, GN35). If the ambient levels exceed these latter (i.e., ambient conditions are already deteriorated), clients are expected to demonstrate that they have explored

	DNSH CRITERIA FROM THE EU TAXONOMY	IFC PSs AND WBG GENERAL EHS GUIDELINES
HOW – MEANS (CONT'D)		and, if necessary, adopted a higher level of performance as further mitigation measures, in order to minimize further deterioration of the environment or preferably to achieve improvement. If ambient levels are in compliance with quality guidelines and/or standards, projects with potentially significant emissions of pollutants should be designed so as to reduce the potential for significant deterioration and to ensure continuing compliance (Guidance Note 3, GN36). > **Where a project that is expected to produce potentially significant emissions of pollutants involves the modernization or retrofit of an existing facility,** clients are encouraged to evaluate whether the current ambient conditions are in compliance with the ambient quality guidelines and/or standards. If the levels exceed them, and if the existing facility is one of the major sources of emissions affecting such exceedances, clients are encouraged to evaluate the feasibility of options to reduce emissions and implement selected options so that the already deteriorated ambient conditions will be improved, targeting the relevant ambient quality guidelines and/or standards (Guidance Note 3, GN38). > Clients with **projects whose area of influence includes ecologically sensitive areas** such as national parks or providers of ecosystem services should implement
HOW MUCH – EXPECTED PERFORMANCE	Do not lead to the manufacture, placing on the market, or use of the following substances (Commission Delegated Regulation (EU) 2021/2139, Appendix C): > **Persistent organic pollutants**, whether on their own, in mixtures or in articles, as listed in **Regulation 2019/1021**, except in the case of substances present as an unintentional trace contaminant (Commission Delegated Regulation (EU) 2021/2139, Appendix C). About 30 substances are listed in Annexes I or II to this Regulation, including pesticides (Dieldrin, Aldrin), PCBs, PeCB, or PFOS. Some of them are subject to specific exemption on intermediate use or other specification (Regulation 2019/1021, Annex I). > **Metallic mercury** (i.e., Hg, CAS RN 7439-97-6 (Regulation 2017/852, art. 2)) and mercury compounds (i.e., any substance consisting of atoms of mercury and one or more atoms of other chemical elements that can be separated into different components only by chemical reactions (Regulation 2017/852, art. 2)), their mixtures and mercury-added products, as defined in **Regulation 2017/852** (Commission Delegated Regulation (EU) 2021/2139, Appendix C). > **Substances that deplete the ozone layer**, whether on their own, in mixture or in articles, as listed in **Regulation (EC) No 1005/2009** (which enforces the Vienna Convention for the Protection of the Ozone Layer and the Montreal Protocol on Substances that Deplete the Ozone Layer in the EU) (Commission Delegated Regulation (EU) 2021/2139, Appendix C). About 100 substances	> For **air ambient quality**, emissions (i) do not result in pollutant concentrations that reach or exceed relevant ambient quality guidelines and standards by applying national legislated standards, or in their absence, the current WHO Air Quality Guidelines and (ii) do not contribute a significant portion to the attainment of relevant ambient air quality guidelines or standards (i.e., 25 percent of the applicable air quality standards to allow additional, future sustainable development in the same airshed). Additional guidelines are supplementing this general approach for point sources, fugitive sources (volatile organic compounds, particulate matter, ozone depleting substances) or mobile sources (EHSG, para. 1.1). > For **wastewater**, identify opportunities to prevent or reduce wastewater pollution through such measures as recycle/reuse within their facility, input substitution, or process modification (e.g., change of technology or operating conditions/modes) (EHSG, para. 1.3). > For **hazardous materials management**, avoid or, when avoidance is not feasible, minimize uncontrolled releases of hazardous materials or accidents (including explosion and fire) during their production, handling, storage, and use. Guidance is made of management actions, preventive measures, and control measures (EHSG, para. 1.5).

	DNSH CRITERIA FROM THE EU TAXONOMY	IFC PSs AND WBG GENERAL EHS GUIDELINES
HOW MUCH – EXPECTED PERFORMANCE (CONT'D)	are listed in Annexes I or II, including CFCs and HCFCs (Regulation (EC) No 1005/2009, Annex I and Annex II). > **Electrical and electronic equipment** (including cables and spare parts for its repair, its reuse, updating of its functionalities, or upgrading of its capacity) that contains the substances following listed in **Directive 2011/65/EU** (Annex II): lead, mercury, cadmium, hexavalent chromium, polybrominated biphenyls (PBB), or polybrominated diphenyl ethers (PBDE) (Directive 2011/65/EU, Annex II), except where specific provisions are made (Commission Delegated Regulation (EU) 2021/2139, Appendix C). > **Chemical substances**, whether on their own, in mixtures or in an article, as listed **Regulation 1907/2006** (REACH), except where specific provisions are made (Commission Delegated Regulation (EU) 2021/2139, Appendix C): (a) About 80 substances, groups of substances or mixtures for which the conditions of restriction are detailed in Annex XVII (Regulation (EC) 1907/2006, Annex XVII). (b) About 60 substances subject to authorization (as listed in Annex XIV) or any other hazardous substances (carcinogenicity, germ cell mutagenicity, reproductive toxicity, substances which are persistent, bioaccumulative and toxic, etc.), except where their use has been proven to be essential for the society (Regulation (EC) 1907/2006, Annex XIV).	> For **waste management**, avoid or minimize the generation of (hazardous and non-hazardous) waste materials as far as practicable: where waste generation cannot be avoided but has been minimized, recover and reuse waste, and where waste cannot be recovered or reused, treat, destroy, and dispose it in an environmentally sound manner (EHSG, para. 1.6). > For **contaminated land**, prevent or control the release of hazardous materials, hazardous wastes, or oil to the environment and, when contamination of land is suspected or confirmed during any project phase, identify and correct the cause of the uncontrolled release to avoid further releases and associated adverse impacts (EHSG, para. 1.8).

Comparison Tool 4:



Technical comparative analysis on biodiversity

Takeaways that are specific to biodiversity:

Considering the detailed and comprehensive framework offered by the PSs to assess and manage biodiversity risks, particularly through PS6 (Biodiversity conservation and sustainable management of living natural resources), a PS-based assessment would comprehensively cover the EU Taxonomy's criteria for DNSH to protection and restoration of biodiversity ecosystems, especially for activities in non-EU countries.

Both the EU Taxonomy and the PSs and EHS Guidelines have adopted the definition of biodiversity from the UN Convention on Biological Diversity (1992): "the variability among living organisms arising from all sources including terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part and includes diversity within species, between species and of ecosystems."

To address this topic, the PSs clearly define a well-structured impact mitigation framework based on the existing ecological characteristic of affected area(s). The EU Taxonomy offers a simpler structure by, on one hand, referring to EU Regulations in EU countries,[26] and on the other hand, directly to PS1 and PS6 for activities in third countries.

The detailed comparison is available below:

[26] In particular ***Directive 2009/147/EC*** on the conservation of wild birds and ***Directive 92/43/EEC*** on the conservation of natural habitats and of wild fauna and flora

	DNSH CRITERIA FROM THE EU TAXONOMY	IFC PSs AND WBG GENERAL EHS GUIDELINES
	Generic criteria for DNSH to protection and restoration of biodiversity and ecosystems (Commission Delegated Regulation (EU) 2021/2139, Appendix D)	**Performance Standard 1** and **related guidance note** (Assessment and Management of E&S Risks and Impacts) **Performance Standard 6** and **related guidance note** (Biodiversity Conservation and Sustainable Management of Living Natural Resources)
WHAT – OVERALL OBJECTIVE	Apply the technical screening criteria for "do no significant harm" to protection and restoration of biodiversity and ecosystems to all activities that can pose risks to the status or condition of habitats, species or ecosystems and should require that, where relevant, environmental impact assessments or appropriate assessments are undertaken and the conclusions from such assessments are implemented. Those criteria should support the objective that even in the absence of a requirement to perform an environmental impact assessment or other appropriate assessment, activities do not lead to the disturbance, capture, or killing of legally protected species or the deterioration of legally protected habitats.	Apply the relevant PSs when biodiversity has been identified as a potential hazard/risk (based on an environmental assessment and the professional opinion of qualified and experienced persons) and when those standards are more stringent that host country regulation. In particular, apply Performance Standard 6: > The client will seek to avoid direct and indirect project-related impacts on biodiversity and ecosystem services (taking into account the differing values attached to biodiversity and ecosystem services by Affected Communities and, where appropriate, other stakeholders), especially focusing on habitat loss, degradation and fragmentation, invasive alien species, overexploitation, hydrological changes, nutrient loading, and pollution (PS6, para. 6). > When avoidance of impacts is not possible, the client will implement measures to minimize impacts and restore biodiversity and ecosystem services (PS6, para. 7). > The client will adopt a practice of adaptive management (i.e., a practical approach to managing uncertainty in biodiversity mitigation and management planning) in which the implementation of mitigation and management measures are responsive to changing conditions and the results of monitoring throughout the project's lifecycle (PS6, para. 7). > A risk assessment must be also carried out where a client is purchasing primary production on an ongoing basis (especially but not exclusively food and fiber commodities) that is known to be produced in regions where there is a risk of significant conversion of natural and/or critical habitats (PS6, para. 30).
HOW – MEANS	*In the EU:* > An **Environmental Impact Assessment** or screening in accordance with **Directive 2011/92/EU** (Commission Delegated Regulation (EU) 2021/2139, Appendix D). In the EU, an Environmental Impact Assessment is mandatory for certain projects and optional for others (case-by-case examination or thresholds/criteria set by the Member State) (Directive 2011/92/EU, art. 4 (2)). This assessment includes a description of the project, including an estimate, by type and quantity, of expected residues and emissions (water, air and soil pollution, noise, vibration, light, heat, radiation, etc.) resulting from the operation of the proposed project (Directive 2011/92/EU, Annex IV).	A process of **environmental and social assessment** conducted by the client, in coordination with other responsible government agencies and third parties as appropriate, and an **ESMS** that is appropriate to the nature and scale of the project and commensurate with the level of its E&S risks and impacts. The ESMS incorporates the following elements: (i) policy; (ii) identification of risks and impacts; (iii) management programs; (iv) organizational capacity and competency; (v) emergency preparedness and response; (vi) stakeholder engagement; and (vii) monitoring and review (PS1, para. 5). As a matter of priority, the client should seek to avoid impacts on biodiversity and ecosystem services, adopting an adaptive management (PS6, para. 7).

	DNSH CRITERIA FROM THE EU TAXONOMY	IFC PSs AND WBG GENERAL EHS GUIDELINES
HOW – MEANS (CONT'D)	> For sites/operations located in or near biodiversity-sensitive areas, an assessment performed in accordance with **Directive 2009/147/EC** on the conservation of wild birds and with **Directive 92/43/EEC** on the conservation of natural habitats and of wild fauna and flora (Commission Delegated Regulation (EU) 2021/2139, Appendix D). *In third countries:* > **Environmental impact assessment or screening**, in accordance with applicable national law or international standards (e.g., IFC Performance Standard 1: Assessment and Management of Environmental and Social Risks) (Commission Delegated Regulation (EU) 2021/2139, Appendix D, footnote 2). > For sites/operations located in or near biodiversity-sensitive areas, **assessment**, in accordance with applicable national law or international standards, that aim at the conservation of natural habitats, wild fauna and wild flora, and that require to carry out (i) a screening procedure to determine whether, for a given activity, an appropriate assessment of the possible impacts on protected habitats and species is needed; (ii) such an appropriate assessment where the screening determines that it is needed (e.g., IFC Performance Standard 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources) (Commission Delegated Regulation (EU) 2021/2139, Appendix D, footnote 3).	**Biodiversity Management Plan (BMP):** > The client's mitigation strategy should be commensurate with the project's risks and impacts to make sure that the requirements of PS6 are met and should take a risk-averse approach that explicitly identifies and accommodates uncertainty about outcomes of mitigation measures (Guidance Note 6, GN20). > Biodiversity-related commitments and mitigation and management actions should be captured in the client's ESMS. For all projects that have the potential to significantly convert or degrade natural habitats and for projects in critical habitats, these biodiversity actions should be captured in a single dedicated BMP or integrated into one or more topic-specific management plans (for example, Invasive Species Management Plan, Induced Access Management Plan, or Water Management Plan) (Guidance Note 6, GN50). > The BMP or equivalents should be auditable management plans and integrated into a project's ESMS, which defines parties responsible for an action, monitoring, and/or verification requirements of an action, and an implementation schedule or frequency for an action (Guidance Note 6, GN50). > The BMP or equivalents are operational tools for site managers and contractors, with focus on on-site mitigation measures (Guidance Note 6, GN50). > Flexibility should be built into the client's ESMS so that the mitigation and management approach can be adapted according to its performance over time. The client has the responsibility to update its approach to integrate findings that may arise from the monitoring program or from independent sources and to continually improve on the existing management of biodiversity, ecosystem services, and living natural resources (Guidance Note 6, GN20).
HOW MUCH – EXPECTED PERFORMANCE	> Where an EIA (or equivalent) has been carried out, implement the required mitigation and compensation measures for protecting the environment (Commission Delegated Regulation (EU) 2021/2139, Appendix D). > Where sites/operations are located in or near biodiversity-sensitive areas (including the Natura 2000 network of protected areas, UNESCO World Heritage sites and Key Biodiversity Areas, as well as other protected areas), where applicable, implement the necessary mitigation measures in order for the project, plan, or activity not to have any significant effects on the conservation objectives of the protected area (Commission Delegated Regulation (EU) 2021/2139, Appendix D).	> In **modified habitat**, i.e., areas that may contain a large proportion of plant and/or animal species of non-native origin, and/or where human activity has substantially modified an area's primary ecological functions and species composition (PS6, para. 11), minimize impacts on such biodiversity and implement mitigation measures as appropriate (PS6, para. 12). > In **natural habitat**, i.e., areas composed of viable assemblages of plant and/or animal species of largely native origin, and/or where human activity has not essentially modified an area's primary ecological functions and species composition (PS6, para.13), not significantly convert or degrade them, unless (i) no other viable alternative exists, (ii) stakeholders have been consulted and (iii) conversion/degradation have been mitigated to achieve, where feasible, no net loss of biodiversity (PS6, para. 14). > In **critical habitat**, i.e., areas with high biodiversity value, including (i) habitat of significant importance to Critically Endangered and/or Endangered species, (ii) habitat of significant importance to endemic and/or restricted-range

	DNSH CRITERIA FROM THE EU TAXONOMY	IFC PSs AND WBG GENERAL EHS GUIDELINES
HOW MUCH – EXPECTED PERFORMANCE (CONT'D)		species, (iii) habitat supporting globally significant concentrations of migratory species and/or congregatory species, (iv) highly threatened and/or unique ecosystems, and/or (v) areas associated with key evolutionary processes (PS6, para. 16), not implement any project activities unless (i) no other viable alternative exists, (ii) the project does not lead to measurable adverse impacts, (iii) the project does not lead to a net reduction in the global and/or national/ regional population of any Critically Endangered or Endangered species over a reasonable period of time, and (iv) a robust, appropriately designed, and long-term biodiversity monitoring and evaluation program is integrated into the client's management program (PS6, para.17). In such cases where these criteria are met, design a Biodiversity Action Plan to achieve net gains (PS6, para. 18). Similar requirements apply to a project that is located within a **legally protected area** (IUCN definition) or an internationally recognized area (UNESCO Natural World Heritage Sites, UNESCO Man and the Biosphere Reserves, Key Biodiversity Areas, and wetlands designated under the Ramsar Convention) (PS6, para. 20). > Not intentionally introduce any **new alien species** (not currently established in the country or region of the project) unless this is carried out in accordance with the existing regulatory framework for such introduction (PS6, para. 22). > Avoid adverse impacts on **priority ecosystem services**, i.e., those services on which project operations are most likely to have an impact and/or on which the project is directly dependent for its operations (PS6, para. 24) or, if these impacts are unavoidable, minimize them and implement mitigation measures that aim to maintain the value and functionality of priority ecosystem services (PS6, para. 25). > In relevant industries, manage living natural resources in a sustainable manner through the application of industry-specific good management practices and available technologies, and implement relevant global, regional, or national standards (PS6, para. 26). More generally, **implement applicable international law and conventions**, including the Convention on Biological Diversity (1992), the Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention, 1979), the Convention on International Trade in Endangered Species of Wild Flora and Fauna (1975), the Convention on Wetlands of International Importance especially as Waterfowl Habitat (Ramsar Convention, 1971), the Convention Concerning the Protection of World Cultural and Natural Heritage (UNESCO World Heritage Convention, 1972) (Guidance Note 6, GN24).

Comparison Tool 5:

Technical comparative analysis on human rights

Takeaways that are specific to human rights:

Both the EU Taxonomy and the PSs recognize the responsibility of business to respect human rights and refer to the same frameworks. IFC does so through establishing respect for human rights in PS1 and through elements related to human rights dimensions throughout the PSs, while the EU Taxonomy, in Article 18, refers to two international frameworks: the UN Guiding Principles on Business and Human Rights (UNGPs) and the OECD Guidelines for Multinational Enterprises.

More specifically, both the EU Taxonomy and the PSs:

- Refer to the **eight fundamental conventions set out in the Declaration of the International Labor Organization**,[27] and the **International Bill of Human Rights** (1948).
- Refer to a **risk-based approach** to assessing and addressing impacts of business on people and on the environment. The EU Taxonomy references frameworks which explicitly endorse human rights due diligence, while the PSs integrate human rights aspects into E&S risk assessment and management, noting that "in limited high-risk circumstances, it may be appropriate for the client to complement its environmental and social risks and impacts process with specific human rights due diligence as relevant to the particular business" (PS 1, para. 12).[28]
- Set out **similar expectations** in terms of ongoing stakeholder engagement processes; ongoing reporting to affected communities and access to a grievance mechanism; and a mitigation hierarchy that prioritizes avoidance and prevention and requires mitigation or compensation for specific adverse impacts.

[27] ILO Convention 87 on Freedom of Association and Protection of the Right to Organize, ILO Convention 29 on Forced Labor, ILO Convention 98 on the Right to Organize and Collective Bargaining, ILO Convention 105 on the Abolition of Forced Labor, ILO Convention 138 on Minimum Age of Employment, ILO Convention 182 on the Worst Forms of Child Labor, ILO Convention 100 on Equal Remuneration, and ILO Convention 111 on Discrimination.

[28] Of relevance, the Equator Principles 4 (2020) set out an additional requirement to include assessment of adverse human rights impacts as part of ESIA or other assessment with reference to the UNGPs. (EP4, Principle 2). Further guidance on the implementation of this requirement is set out in the ***Guidance Note On Implementation of Human Rights Assessments Under the Equator Principles (Sept 2020)***.

- Acknowledge **complexity in identifying and addressing risks and impacts in supply chains**, specifically that this is dependent on control and influence (PSs) or leverage (UNGPs and OECD Guidelines). The UNGPs explicitly formulate a company's responsibility to address adverse human rights impacts which arise from its activities or those linked to its operations, products or services by its business relationships with other parties (UNGPs, Principle 13). While this responsibility remains, addressing impacts in the value chain might be complex and will depend, among other factors, on the company's leverage and the severity of the abuse (UNGPs, Principle 19). The PSs focuses on E&S risks associated with a company's operations, including its primary supply chains.[29] A primary supplier "may supply its goods or materials directly to the project (a Tier I primary supplier), to the Tier I primary supplier (a Tier II primary supplier) or may be at a deeper tier of the primary supply chain [Introduced June 14, 2021]" (Guidance Note 1, Footnote GN 9).

There is, however, an area of divergence between the EU Taxonomy and the PSs related to the disclosure of human rights impacts:

- Through its reference to the UNGPs and OECD Guidelines, the EU Taxonomy expects a level of public disclosure of human rights impacts: the UNGPs require companies, in the case of severe adverse human rights impacts, to publicly disclose how they identify and address them. Such formal reporting can take the form of an annual report, a sustainability report, or online updates and should include information and indicators about how a company identify and address adverse impacts (UNGPs, Principle 21).

- The PSs require disclosure of relevant information to affected communities by providing periodic reports, as part of the ongoing stakeholder engagement process, to describe progress on issues involving ongoing risk, impacts on affected communities, and issues identified by the grievance mechanism (PS1, paras 29 and 36). Disclosed documentation can include full E&S assessments and action plans, e.g., Stakeholder Engagement Plan, Resettlement Action Plan, company policies, or summaries of key issues and commitments (PS1, Footnote 26). However, the PSs do not specifically require public disclosure of human rights impacts.

Finally, it is worth noting that, even though the EU Taxonomy requires alignment with the UNGPs and OECD Guidelines, it does not provide specific guidance as to how to achieve this alignment (EU Taxonomy Regulation 2020/852, Article 18). The PSs, as a comprehensive operational framework for E&S risk management, center on how companies implement their responsibilities to assess and manage E&S risks in practice. For example, the PSs bring to fore topics relevant to particular vulnerable groups by, for example, formulating requirements specific to Indigenous People (PS7) and the risk of forced eviction (PS5), and referring to other international frameworks such as the ILO Convention on the Rights of Indigenous and Tribal Peoples in Independent Countries (1989), UN Guiding Principles on Internal Displacement (2004), the UN Convention on the Rights of the Child (1990) and to the UN Convention on the Protection of the Rights of all Migrant Workers and Members of their Families (2003), including in the Guidance Notes.

The detailed comparison is available below:

[29] "Where the client can reasonably exercise control, the risks and impacts identification process will also consider those risks and impacts associated with primary supply chains, as defined in Performance Standard 2 (paragraphs 27–29) and Performance Standard 6 (paragraph 30)." (IFC PS1, para. 10)

MS CRITERIA FROM THE EU TAXONOMY

- **Guidelines for Multinational Enterprises** (OECD, 2011)
- **Guiding Principles on Business and Human Rights** (United Nations, 2011)
- **Declaration on Fundamental Principles and Rights at Work** (ILO, 1998)
- **International Bill of Human Rights** (United Nations, 1948)

IFC PSs AND WBG EHS GUIDELINES

- **Performance Standard 1** and **related guidance note** (Assessment and Management of E&S Risks and Impacts)
- **Performance Standard 2** and **related guidance note** (Labor and Working Conditions)
- **Performance Standard 3** and **related guidance note** (Resource Efficiency and Pollution Prevention)
- **Performance Standard 4** and **related guidance note** (Community Health, Safety, and Security)
- **Performance Standard 5** and **related guidance note** (Land Acquisition and Involuntary Resettlement)
- **Performance Standard 6** and **related guidance note** (Biodiversity Conservation and Sustainable Management of Living Natural Resources)
- **Performance Standard 7** and **related guidance note** (Indigenous Peoples)
- **Performance Standard 8** and **related guidance note** (Cultural Heritage)

WHAT – OVERALL OBJECTIVE

EU Taxonomy Regulation – Art. 18:

> The minimum safeguards shall be procedures implemented by an undertaking that is carrying out an economic activity to seek alignment with the **OECD Guidelines for Multinational Enterprises and the UN Guiding Principles on Business and Human Rights** (UNGPs), including the principles and rights set out in the eight fundamental conventions identified in the Declaration of the International Labour Organization on Fundamental Principles and Rights at Work and the International Bill of Human Rights (point (**c**) of Article **3**)

> When implementing these procedures, undertakings shall adhere to the principle of do no significant harm.

According to the ***UNGPs***, the responsibility to respect human rights includes requirements that business enterprises:

> Avoid causing or contributing to adverse human rights impacts through their own activities and address such impacts when they occur.

> Seek to prevent or mitigate adverse human rights impacts that are directly linked to their operations, products or services by their business relationships, even if they have not contributed to those impacts. (UNGPs, Principle 13)

Businesses have the corporate responsibility to respect human rights. This means "to avoid infringing on the human rights of others and address adverse human rights impacts business may cause or contribute to" (PS 1, para 3). Each Performance Standard includes elements of human rights dimensions that a project might encounter throughout its life cycle. Specifically:

Performance Standard 1:

- Explicitly recognizes the responsibility of the private sector to respect human rights (Guidance Note 1, GN3), which the Guidance Notes clarify as referring to the human rights concepts found in the International Bill of Rights, consisting of the Universal Declaration of Human Rights (UDHR), the International Covenant on Civil and Political Rights (ICCPR), and the International Covenant on Economic, Social, and Cultural Rights (ICESCR) (Guidance Note 1, GN44)
- Requires clients to establish and maintain processes for identifying risks and impacts guided by type, scale, and location of project (PS1 para. 7)
- Requires considering "all relevant environmental and social risks and impacts of the project" including the issues identified in the PSs, cumulative impacts, impacts in the project area of influence, and impacts that have not yet materialized. (PS1 para. 7)
- Prioritizes avoidance as the first step in the hierarchy. (PS1 paras. 14-15)
- Requires early engagement with Affected Communities in the identification of risks and impacts and that continues on an ongoing basis as risks and impacts arise (PS1 para. 30).
- Environmental and Social Management Plans (ESMP) and Action Plans (ESAP) are required for every project (PS1 para. 16).

	DNSH CRITERIA FROM THE EU TAXONOMY	IFC PSs AND WBG GENERAL EHS GUIDELINES
WHAT – OVERALL OBJECTIVE (CONT'D)		> Apply **Performance Standard 2** (Labor and Working Conditions) to address labor issues related to workers' rights (see ***Comparison tool 6***). > Apply **Performance Standard 3** (Resource Efficiency and Pollution Prevention) to avoid or minimize adverse impacts on human health and the environment especially through addressing pollution; to address impacts from water consumption (PS3, para. 9), waste (PS3, para. 12), hazardous materials (PS3, para.13), and pesticide (PS3, para.16). > Apply **Performance Standard 4** (Community Health, Safety, and Security) to "anticipate and avoid adverse impacts on the health and safety of the Affected Community" and to emphasize that "the safeguarding of personnel and property is carried out in accordance with relevant human rights principles and in a manner that avoids or minimizes risks to the Affected Communities." (PS4, Objectives). > Apply **Performance Standard 5** (Land Acquisition and Involuntary Resettlement) to physical and economic displacement in a way that respects rights and protections for internally displaced persons as laid out in the UN Guiding Principles on Internal Displacement (Guidance Note 5, GN6). > Apply **Performance Standard 6** (Biodiversity Conservation and Sustainable Management of Living Natural Resources) to protect biodiversity and maintain ecosystem services which people derive benefits from (PS6, para. 2). Impacts on biodiversity can often adversely affect the delivery of ecosystem services, and by extension to people (PS6, para. 3). Engage and consult Affected Communities, indigenous people and other stakeholders, particularly women, poor and vulnerable groups throughout the process to understand impacts and to identify appropriate responses (Guidance Note 6, GN12, GN96). > Apply **Performance Standard 7** (Indigenous Peoples) to "ensure that the development process fosters full respect for the human rights, dignity, aspirations, culture, and natural resource-based livelihoods of Indigenous Peoples," recognizing six United Nations conventions relevant to Indigenous Peoples and other international treaties, declarations, and guidelines (PS 7, Objectives; Guidance Note 7, GN1); and to set out circumstances under which a free prior and informed consent of the Affected Communities of Indigenous Peoples is required (PS7, para. 13-17). > Apply **Performance Standard 8** (Cultural Heritage) to preserve and protect cultural heritage by avoiding, reducing, restoring, where possible, and in some cases compensating for the adverse impacts; and to seek equitable flow of development benefits accruing from the commercial use of cultural heritage to the Affected Communities (PS8, Objectives). PS8 addresses a range of human rights issues which can emerge with regards to identification of cultural heritage of importance and the need to consult the Affected Communities as well as the requirement to allow access to the Affected Communities to the cultural site (PS8, para 9-10).

	DNSH CRITERIA FROM THE EU TAXONOMY	IFC PSs AND WBG GENERAL EHS GUIDELINES
HOW – MEANS[38]	To meet their responsibility to respect human rights, business enterprises should have in place: (a) A **policy commitment** to meet their responsibility to respect human rights (b) A **human rights due diligence process** to identify, prevent, mitigate, and account for how they address their impacts on human rights (c) **Processes to enable the remediation** of any adverse human rights impacts they cause or to which they contribute. (UNGPs, Principle 15) **Human rights due diligence** as an on-going process should include assessing actual and potential human rights impacts, integrating and acting upon the findings, tracking responses, and communicating how impacts are addressed (UNGPs, Principle 17). It: (a) Should cover adverse human rights impacts that the business enterprise may cause or contribute to through its own activities, or which may be directly linked to its operations, products, or services by its business relationships, (b) Will vary in complexity with the size of the business enterprise, the risk of severe human rights impacts, and the nature and context of its operations, (c) Should be ongoing, recognizing that the human rights risks may change over time as the business enterprise's operations and operating context evolve (UNGPs, Principle 17). When business enterprises identified they have caused or contributed to the adverse impacts, they should provide or cooperate in their **remediation** (UNGPs, Principle 22).	> Establish an effective **Environmental and Social Management System** (ESMS) appropriate to the nature and scale of the project and commensurate with the level of its E&S risks and impacts (PS1, para 5). ESMS is "a dynamic and continuous process initiated and supported by management" that "involves engagement between the client, its workers, local communities directly affected by the project (the Affected Communities) and, where appropriate, other stakeholders" (PS1, para. 1). The ESMS incorporates: (i) policy, (ii) identification of risks and impacts, (iii) management programs, (iv) organizational capacity and competency, (v) emergency preparedness and response, (vi) stakeholder engagement, and (vii) monitoring and review (PS1, para. 5). > An **overarching policy** defining the E&S objectives and principles that guide the project to achieve sound environmental and social performance (PS1, para 6). **The policy should be consistent with the principles of the PSs, which include the commitment to respect human rights.** Business activities will **comply with applicable laws and regulations of the jurisdictions** in which they are being undertaken, including those laws implementing **host country obligations under international law** (PS1, para. 6). > A comprehensive process of **E&S risks and impacts assessment** focusing on issues identified in PS2-PS8 (see detailed description above) and those stakeholders who are likely to be affected by such risks and impacts (PS1, paras 5 and 7). Some "high- risk circumstances" might require complementing E&S risks and impact identification with "specific human rights due diligence." (PS 1, footnote 12) > A **mitigation hierarchy** to address identified risks and impacts will favor the avoidance of impacts over minimization, and, where residual impacts remain, compensation/offset, wherever technically and financially feasible (PS1, para. 14). > An **emergency preparedness and response system** to respond to accidental and emergency situations associated with the project in a manner appropriate to prevent and mitigate any harm to people and/or the environment (PS1, para. 20). > **Stakeholder engagement** and consultation as an ongoing process (PS1, para. 25). PS2-PS8 specify the nature and the purpose of stakeholder consultation and participation in the identification of risks and impacts and designing of mitigation strategies. > **External Communications** and **Grievance Mechanisms for Affected Communities** to receive and facilitate resolution of their concerns and grievances (PS1, para. 34 -35). > An **ongoing periodic reporting to Affected Communities** on issues that involve ongoing risks and impacts on those Communities (PS1, para. 36).

	DNSH CRITERIA FROM THE EU TAXONOMY	IFC PSs AND WBG GENERAL EHS GUIDELINES
HOW MUCH – EXPECTED PERFORMANCE	**Policy and management systems:** > A business enterprise should have a **policy commitment** as a basis of embedding its responsibility to respect human rights that is: (a) Approved at the most senior level of the business enterprise, (b) Is informed by relevant internal and/or external expertise, (c) Stipulates the enterprise's human rights expectations of personnel, business partners and other parties directly linked to its operations, products or services, (d) Is publicly available and communicated internally and externally to all personnel, business partners and other relevant parties, (e) Is reflected in operational policies and procedures necessary to embed it throughout the business enterprise. (UNGPs, Principle 16) **Due diligence and monitoring:** > **Identifying** human rights impacts should (a) draw on internal and/or independent external human rights expertise; and (b) involve meaningful consultation with potentially affected groups and other relevant stakeholders, as appropriate to the size of the business enterprise and the nature and context of the operation (UNGPs, Principle 18). > Based on the **human rights due diligence**, integrate the findings from impact assessments across relevant internal functions and processes, and **take appropriate action** in order to prevent and mitigate adverse human rights impacts. Effective integration requires that: (a) Responsibility for addressing such impacts is assigned to the appropriate level and function within the business enterprise, (b) Internal decision-making, budget allocations and oversight processes enable effective responses to such impacts (UNGPs, Principle 19). > **Track the effectiveness of the remediation actions** in order to verify whether adverse human rights impacts are being addressed. Tracking should: (a) Be based on appropriate qualitative and quantitative indicators, (b) Draw on feedback from both internal and external sources, including affected stakeholders (UNGPs, Principle 20). **Stakeholder engagement and disclosure:** > **Externally communicate** how business enterprises are addressing human rights impacts (UNGPs, Principle 21) > **Disclose publicly** about all the above so that stakeholders have sufficient information to evaluate the adequacy of an enterprise's response to the	**Policy and management systems:** > Implementation of the ESMS requires an **organizational structure**, including specific personnel, management sponsorship, and financial resources (PS1, para.17). **Due diligence and monitoring:** > The type, scale, and location of the project guide the scope and level of effort devoted to the **risks and impacts identification process**. The scope of the risks and impacts identification process will be consistent with good international industry practice and will determine the appropriate and relevant methods and assessment tools. (PS1, para 7) > Assessment and management of risks and impacts is determined by the client's **ability to control and influence third parties**. Specifically, if "risks and impacts in the project's area of influence [result] from a third party's actions, the client will address those risks and impacts in a manner commensurate with the client's control and influence over the third parties" (PS1, para 9). The risks and impacts identification process will also consider those risks and impacts associated with primary supply chains, where the client can reasonably exercise control (PS1, para 10). > As part of management plans, establish "**Action Plans**, which will define desired outcomes and actions to address the issues raised in the risks and impacts identification process…with elements such as performance indicators, targets, or acceptance criteria that can be tracked over defined time periods, and with estimates of the resources and responsibilities for implementation. As appropriate, the management program will recognize and incorporate the role of relevant actions and events controlled by third parties to address identified risks and impacts. Recognizing the dynamic nature of the project, the management program will be responsive to changes in circumstances, unforeseen events, and the results of monitoring and review" (PS1, para 16). **Stakeholder engagement and disclosure:** > **Disclosure** of project information helps **Affected Communities and other stakeholders** understand the risks, impacts and opportunities of the project. Provide relevant information on: (a) the purpose, nature, and scale of the project (b) the duration of proposed project activities (c) any risks to and potential impacts on such communities and relevant mitigation measures (d) the envisaged stakeholder engagement process (e) the grievance mechanism (PS1, para 29).

	DNSH CRITERIA FROM THE EU TAXONOMY	IFC PSs AND WBG GENERAL EHS GUIDELINES
HOW MUCH – EXPECTED PERFORMANCE (CONT'D)	particular human rights impact involved. Disclosure should include, but not be limited to, material information on: (a) The financial and operating results of the enterprise, (b) Enterprise objectives, (c) Major share ownership and voting rights, including the structure of a group of enterprises and intra-group relations, as well as control enhancing mechanisms, (d) Remuneration policy for members of the board and key executives, and information about board members, including qualifications, the selection process, other enterprise directorships and whether each board member is regarded as independent by the board, (e) Related party transactions, (f) Foreseeable risk factors, (g) Issues regarding workers and other stakeholders, (h) Governance structures and policies, in particular, the content of any corporate governance code or policy and its implementation process (OECD, p.27). > Establish or participate in effective operational-level **grievance mechanisms** for individuals and communities who may be adversely impacted, in order to make it possible for grievances to be addressed early and remediated directly (UNGPs, Principle 29).	> The **Grievance Mechanism** should be scaled to the risks and adverse impacts of the project and have Affected Communities as its primary user. Provide a grievance mechanism for workers (see ***Comparison tool 6*** for definition of "workers") and their organizations, where they exist – to raise workplace concerns. It should seek to resolve concerns promptly, using an understandable and transparent consultative process that is culturally appropriate and readily accessible, and at no cost and without retribution to the party that originated the issue or concern. The mechanism should not impede access to judicial or administrative remedies (PS1, para 35).

Comparison Tool 6:

Technical comparative analysis on workers' rights

Takeaways that are specific to workers' rights

Both the EU Taxonomy and the PSs have a similar approach to safeguarding the rights of workers defined in accordance with international conventions and instruments, including references to the ILO's fundamental conventions and the International Bill of Human Rights.

Moreover, both the UNGPs and the PSs recognize migrant workers and their families, and children as specific vulnerable groups that require additional attention and requirements.

Under the PSs, operationalization of the requirements depends on employment relationships between a company and workers, where PS2 distinguishes between (i) workers directly engaged by the business activity (direct workers), (ii) workers engaged through third parties to perform work related to core business processes for a substantial duration (contracted workers), and (iii) workers engaged by the business activity's suppliers (supply chain workers), and when specific requirements apply.

With regards to frameworks referenced in the EU Taxonomy (UNGPs and OECD Guidelines for Multinational Enterprises), the OECD Guidelines focus predominantly on the workers employed by the multinational enterprise, rather than those with different employment relationships with the enterprise (such as contracted workers or supply chain workers). The UNGPs do not have specific requirements with regards to workers, but rather general requirements for human rights due diligence apply (see ***Comparison tool 5***).

The detailed comparison is available below:

MS CRITERIA FROM THE EU TAXONOMY

- **Guidelines for Multinational Enterprises** (OECD, 2011)
- **Guiding Principles on Business and Human Rights** (United Nations, 2011)
- **Declaration on Fundamental Principles and Rights at Work** (ILO, 1998)
- **International Bill of Human Rights** (United Nations, 1948)

IFC PSs AND WBG GENERAL EHS GUIDELINES

- **Performance Standard 1** and **related guidance note** (Assessment and Management of E&S Risks and Impacts)
- **Performance Standard 2** and **related guidance note** (Labor and Working Conditions)

WHAT – OVERALL OBJECTIVE

EU Taxonomy Regulation– Art. 18:

> The minimum safeguards referred to in point **(c)** of Article **3** shall be procedures implemented by an undertaking that is carrying out an economic activity to seek alignment with the **OECD Guidelines for Multinational Enterprises** and the **UN Guiding Principles on Business and Human Rights**, including the principles and rights set out in the eight fundamental conventions identified in the **Declaration of the International Labour Organization on Fundamental Principles and Rights at Work**[30] and the **International Bill of Human Rights**.

> When implementing the procedures referred to in paragraph 1 of this Article, undertakings shall adhere to the principle of do no significant harm referred to in point **(17)** of Article **2** of **Regulation (EU) 2019/2088**.

In relation to workers employed by the multinational enterprise, those minimum safeguards aim to (OECD, p.35-37):

(a) Respect the right of workers to **establish or join trade unions and representative organizations** of their own choosing;

(b) Respect the right of workers employed of **collective bargaining**;

(c) Contribute to the effective **abolition of child labor**;

(d) Contribute to the **elimination of all forms of forced or compulsory labor**;

(e) Be guided by the principle of **equality of opportunity and treatment in employment and no discrimination**.

The UNGPs do not set out any specific minimum requirements for workers.

Apply the relevant PSs when labor and working conditions have been identified as a potential hazard/risk (based on an E&S assessment and the professional opinion of qualified and experienced persons) and when those standards are more stringent that host country regulation.

The requirements set out in Performance Standard 2 have been in part guided by a number of international conventions and instruments, including those of **ILO**,[31] and the United Nations, specifically **UN Conventions on the Rights of the Child**, and on the **Protection of the Rights of all Migrant Workers and Members of their Families** (PS2, para. 2, footnote 2).

In particular, **PS2** aims to:

> Promote the **fair treatment**, **non-discrimination**, and **equal opportunity** of workers;

> Establish, maintain, and improve the **worker-management relationship**;

> Promote compliance with **national employment and labor laws**;

> Protect workers, including **vulnerable categories of workers** such as **children, migrant workers, workers engaged by third parties, and workers in the client's supply chain**;

> Promote **safe and healthy working conditions**, and the health of workers;

> Avoid the use of **forced labor**.

[30] ILO Convention 87 on Freedom of Association and Protection of the Right to Organize, ILO Convention 29 on Forced Labor, ILO Convention 98 on the Right to Organize and Collective Bargaining, ILO Convention 105 on the Abolition of Forced Labor, ILO Convention 138 on Minimum Age of Employment, ILO Convention 182 on the Worst Forms of Child Labor, ILO Convention 100 on Equal Remuneration, and ILO Convention 111 on Discrimination (PS2, para.2, footnote 2). ILO Convention 155 on Occupational Safety and Health, ILO Protocol 155 of 2002 to the Occupational Safety and Health Convention, ILO Convention 162 on Asbestos, ILO Convention 174 on Prevention of Major Industrial Accidents (GN2)

[31] The eight fundamental ILO Conventions: ILO Convention 87 on Freedom of Association and Protection of the Right to Organize, ILO Convention 29 on Forced Labor, ILO Convention 98 on the Right to Organize and Collective Bargaining, ILO Convention 105 on the Abolition of Forced Labor, ILO Convention 138 on Minimum Age of Employment, ILO Convention 182 on the Worst Forms of Child Labor, ILO Convention 100 on Equal Remuneration, and ILO Convention 111 on Discrimination. Following the 110th Session of the International Labour Conference (ILC) in June 2022, the ILO Declaration on Fundamental Principles and Rights at Work (1998) has been amended. As a result, the Convention 155 on Occupational Safety and Health (1981) and the Convention 187 on Promotional Framework for Occupational Safety and Health (2006) are now considered as "fundamental Conventions."

	DNSH CRITERIA FROM THE EU TAXONOMY	IFC PSs AND WBG GENERAL EHS GUIDELINES
HOW – MEANS	A risk-based **human rights due diligence**, appropriate to the size, nature and context of operations and the severity of the risks is expected to cover adverse human rights impacts on affected stakeholders, including workers (OECD, p.31). Human rights due diligence, as outlined by the UNGPs, entails assessing actual and potential human rights impacts, including those related to workers' rights, integrating and acting upon the findings, tracking responses, and communicating how impacts are addressed. Human rights due diligence: (a) Should cover adverse human rights impacts that the business enterprise may cause or contribute to through its own activities, or which may be directly linked to its operations, products or services by its business relationships; (b) Will vary in complexity with the size of the business enterprise, the risk of severe human rights impacts, and the nature and context of its operations; (c) Should be ongoing, recognizing that the human rights risks may change over time as the business enterprise's operations and operating context evolve (UNGPs, Principle 17). The human rights due diligence process should: > Draw on internal and/or independent external human rights expertise, > Involve meaningful consultation with potentially affected groups and other relevant stakeholders, as appropriate to the size of the business enterprise and the nature and context of the operation (UNGPs, Principle 18). With regards to requirements related to employment and industrial relations outlined by the OECD Guidelines, enterprises should (OECD, Section V, 2-8) > Provide such facilities and information to workers' representatives to assist in the development of effective **collective agreements**, for meaningful negotiations on conditions of employment and transparency. > Promote **consultation and co-operation between workers** and their representatives on matters of mutual concern. > Observe **standards of employment** and industrial relations not less favorable than those observed by comparable employers in the host country > when operating in developing countries without comparable employers, provide the **best possible wages, benefits and conditions of work**, within the framework of government policies. These should be related to the economic position of the enterprise, but should be at least adequate to satisfy the basic needs of the workers and their families. > Take adequate steps to **support occupational health and safety** in their operations.	A process of **E&S assessment** conducted by the client, in coordination with other responsible government agencies and third parties as appropriate, and an **E&S Management System** (ESMS) that is appropriate to the nature and scale of the project and commensurate with the level of its E&S risks and impacts. The ESMS incorporates the following elements: (i) policy; (ii) identification of risks and impacts; (iii) management programs; (iv) organizational capacity and competency; (v) emergency preparedness and response; (vi) stakeholder engagement; and (vii) monitoring and review. The scope of application of PS2 depends on the type of employment relationship between the client and the worker. It applies to: (a) **Direct workers:** workers directly engaged by the client, (b) **Contracted workers:** workers engaged through third parties to perform work related to core business processes of the project for a substantial duration, and (c) **Supply chain workers:** workers engaged by the client's primary suppliers. PS2 defines the requirements for working conditions, worker relationship management and work force protection: > **Human resources policies:** Adopt and implement **human resources policies and procedures** appropriate to its size and workforce that set out its approach to managing workers consistent with the requirements of this PS and national law (PS2, para. 8). > **Workers' organizations:** Respect national law recognizing workers' rights to form and join **workers' organizations** of their choosing without interference and to **bargain collectively**. Where national law substantially restricts workers' organizations, the client will not restrict workers from developing alternative mechanisms to express their grievances and protect their rights regarding working conditions and terms of employment (PS2, para. 13). > **Non-Discrimination and Equal Opportunity:** not make employment decisions on the basis of personal characteristics unrelated to inherent job requirements (PS2, para. 15). Comply with national law in countries where national law provides for non-discrimination in employment. When national laws are silent on non-discrimination in employment, meet the requirements of PS2 (PS2, para. 16). > **Retrenchment:** carry out an analysis of alternatives to retrenchment. If the analysis does not identify viable alternatives to retrenchment, a retrenchment plan will be developed and implemented to reduce the adverse impacts of retrenchment on workers (PS2, para. 18). > **Grievance Mechanism:** provide a grievance mechanism for workers (and their organizations, where they exist) to raise workplace concerns. Inform the

	DNSH CRITERIA FROM THE EU TAXONOMY	IFC PSs AND WBG GENERAL EHS GUIDELINES
HOW – MEANS (CONT'D)	> **Employ local workers and provide training with a view to improving skill levels**, in co-operation with worker representatives and, where appropriate, relevant governmental authorities. > In case of considering changes which would have major employment effects, provide reasonable notice of such changes and mitigate to the maximum extent practicable adverse effects. > In the context of bona fide negotiations with workers' representatives, not threaten, influence unfairly those negotiations or to hinder the exercise of a right to organize. > Enable authorized representatives of the workers to negotiate on collective bargaining or labor-management relations issues.	workers of the grievance mechanism at the time of recruitment and make it easily accessible to them (PS2, para. 20). > **Child Labor:** not employ children in any manner that is economically exploitative or is likely to be hazardous or to interfere with the child's education, or to be harmful to the child's health or physical, mental, spiritual, moral or social development (PS2, para. 21). > **Forced Labor:** not employ forced labor, which consists of any work or service not voluntarily performed that is exacted from an individual under threat of force or penalty. This covers any kind of involuntary or compulsory labor, such as indentured labor, bonded labor, or similar labor-contracting arrangements. Not employ trafficked persons (PS2, para. 22). > **Occupational Health and Safety:** provide a safe and healthy work environment, taking into account inherent risks in its particular sector and specific classes of hazards in the client's work areas, including physical, chemical, biological, and radiological hazards, and specific threats to women. Take steps to prevent accidents, injury, and disease arising from, associated with, or occurring in the course of work by minimizing, as far as reasonably practicable, the causes of hazards (PS2, para. 23). > **Workers Engaged by Third Parties:** with regards to contracted workers, take commercially reasonable efforts to ascertain that the third parties who engage these workers are reputable and legitimate enterprises (PS2, para. 24).
HOW MUCH – EXPECTED PERFORMANCE	> Have a **policy commitment** (UNGPs, para. 16) to respect human rights that: (a) Is approved at the most senior level of the business enterprise, (b) Is informed by relevant internal and/or external expertise, (c) Stipulates the enterprise's human rights expectations of personnel, business partners and other parties directly linked to its operations, products or services, (d) Is publicly available and communicated internally and externally to all personnel, business partners and other relevant parties, (e) Is reflected in operational policies and procedures necessary to embed it throughout the business enterprise. > Based on the human rights due diligence, integrate the findings from their impact assessments across relevant internal functions and processes, and **take appropriate action** in order to prevent and mitigate adverse human rights impacts. Effective integration requires that: (a) Responsibility for addressing such impacts is assigned to the appropriate level and function within the business enterprise,	> **Human resources policies:** provide workers with documented information that is clear and understandable, regarding their rights under national labor and employment law and any applicable collective agreements, including their rights related to hours of work, wages, overtime, compensation, and benefits upon beginning the working relationship and when any material changes occur (PS2, para. 9). > **Working Conditions and Terms of Employment:** respect the agreement with a workers' organization in case of collective bargaining and provide reasonable working conditions and terms of employment (PS2, para. 10). Identify migrant workers and ensure that they are engaged on substantially equivalent terms and conditions to non-migrant workers (PS2, para. 11). Implement policies on the quality and management of accommodation and provision of basic services (PS2, para. 12). > **Workers' organizations:** not restrict, influence of control workers from developing alternative mechanisms to express their grievances and protect their rights (PS2, para. 14). > **Non-Discrimination and Equal Opportunity:** take measures to prevent and address harassment, intimidation and/or exploitation, in regard to women and

	DNSH CRITERIA FROM THE EU TAXONOMY	IFC PSs AND WBG GENERAL EHS GUIDELINES
HOW MUCH – EXPECTED PERFORMANCE (CONT'D)	(b) Internal decision-making, budget allocations and oversight processes enable effective responses to such impacts (UNGPs, Principles 19). > **Track the effectiveness of the remediation actions** in order to verify whether adverse human rights impacts are being addressed. Tracking should: (a) Be based on appropriate qualitative and quantitative indicators, (b) Draw on feedback from both internal and external sources, including affected stakeholders (UNGPs, Principles 20). > **Disclose publicly** about all the above so that stakeholders have sufficient information to evaluate the adequacy of an enterprise's response to the particular human rights impact involved. Disclosure should include, but not be limited to, material information on: (a) The financial and operating results of the enterprise, (b) Enterprise objectives, (c) Major share ownership and voting rights, including the structure of a group of enterprises and intra-group relations, as well as control enhancing mechanisms, (d) Remuneration policy for members of the board and key executives, and information about board members, including qualifications, the selection process, other enterprise directorships and whether each board member is regarded as independent by the board, (e) Related party transactions, (f) Foreseeable risk factors, (g) Issues regarding workers and other stakeholders, (h) Governance structures and policies, in particular, the content of any corporate governance code or policy and its implementation process (OECD, p.27). > Establish or participate in effective operational-level **grievance mechanisms** for individuals and communities who may be adversely impacted, in order to make it possible for grievances to be addressed early and remediated directly (OECD, p.29). > Effective non-judicial grievance mechanism should be: (a) legitimate, (b) accessible, (c) predictable, (d) equitable, (e) transparent , (f) rights-compatible, (g) a source of continuous learning, and (h) based on engagement and learning (UNGPs, Principle 31).	migrant workers (PS2, para. 15). Special measures of protection or assistance to remedy past discrimination or selection for a particular job based on the inherent requirements of the job will not be deemed as discrimination, provided they are consistent with national law (PS2, para. 17). > **Retrenchment :**Analyse alternatives to retrenchment, and if it does not exist, develop and implement a retrenchment plan (based on non-discrimination and consultation with workers, their organizations, the government) to reduce the adverse impacts on workers. All workers may receive notice of dismissal and several payments mandated by law and collective agreements (PS2, para. 18). > **Grievance Mechanism:** Detailed principles of effective grievance mechanism are outlined in Annex D Guidance Note 2 and include (non-exhaustive): transparency of the process, confidentiality, non-retribution, reasonable timescales, and right to appeal. > **Child Labor:** Assess risks and monitor health, working conditions and hours of work of minors (PS2, para. 21), develop a policy against employing child labor and inquire about and address trafficking of children for labor exploitation with third parties who supply labor (Guidance Note 2, GN64-65). > **Forced Labor:** If forced labor is discovered in the client's workforce, including direct and/or contracted workers, or supply chain, immediate steps should be taken to address the practice that has coerced the worker and instead offer terms of employment that can be freely chosen and do not recreate conditions of coercion. Immediate steps should also be taken to refer cases of forced labor to law enforcement authorities, as appropriate (Guidance Note 2, GN70). Exercise diligence with regard to key contractors and subcontractors so that they do not knowingly benefit from practices that lead to bonded or indentured status of workers (Guidance Note 2, GN72). > **Occupational Health and Safety:** In a manner consistent with good international industry practice, as reflected in various internationally recognized sources including the EHS Guidelines, the client will address areas that include the: (a) identification of potential hazards to workers, particularly those that may be life-threatening, (b) provision of preventive and protective measures, including modification, substitution, or elimination of hazardous conditions or substances, (c) training of workers, (d) documentation and reporting of occupational accidents, diseases, and incidents, (e) emergency prevention, preparedness, and response arrangements (PS2, para. 23).

	DNSH CRITERIA FROM THE EU TAXONOMY	IFC PSs AND WBG GENERAL EHS GUIDELINES
HOW MUCH – EXPECTED PERFORMANCE (CONT'D)		> **Workers Engaged by Third Parties:** take reasonable efforts to ascertain that the third parties who engage these workers are reputable and legitimate enterprises and have an appropriate ESMS consistent with the requirements of this PS (PS2, para. 24). Establish policies and procedures for managing and monitoring the performance of such third-party employers (PS2, para. 25). Incorporate requirements of PS2 in contractual agreements. Ensure that contracted workers have access to a grievance mechanism (PS2, para. 26). > **Supply chain:** identify and monitor risks of child and forced labor in the primary supply chain and take appropriate steps to remedy them (PS2, para. 27). Introduce procedures and mitigation measures to ensure that primary suppliers are taking steps to prevent or to correct safety issues (PS2, para. 28). Where remedy is not possible, the client will shift the project's primary supply chain over time to suppliers that can demonstrate that they are complying with this PS (PS2, para. 29).

Comparing technical requirements: an in-depth focus on two select sectors

To illustrate the technical comparability and alignment of the EU Taxonomy's DNSH and MS with the PSs and EHS Guidelines when considering a specific business activity or sector, this section provides a deep-dive analysis focused on two sectors: Wind Power and Manufacture of Cement. The analysis compares the requirements of the EU Taxonomy (including both generic and sector-specific DNSH and MS criteria) and the PSs and EHS Guidelines (including both general and industry sector guidelines). These comparisons are detailed in Annex 4, and accompanied by sector-specific operational tools for practitioners, accessible at ***www.ifc.org/ifceutaxonomy***.

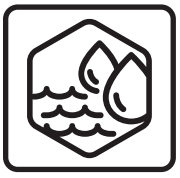
Takeaways that are specific to electricity generation from wind power

The ***Industry Sector Guidelines (ISG) on Wind Energy*** address additional issues compared to the EU Taxonomy, such as impact on water associated with onshore wind power plant construction, visual impact, noise, sector-specific occupational health and safety hazards and risks, community health and safety hazards. Secondly, the ISG cover multiple stages of project evaluation and monitoring (e.g., for biodiversity).

On the other hand, the criteria set by the EU Taxonomy tend to be more specific (especially on water and biodiversity). In particular, based on EU legislation and related to qualitative descriptors to determine good environmental status, they require the calculation of specific indicators and compliance with nationally established thresholds.

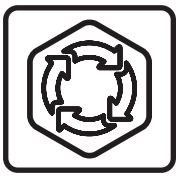
For each DNSH and minimum safeguards topic, the comparative analysis led to the following conclusions:

Climate change adaptation: The approach is generally similar, but the EU Taxonomy is more specific than the PSs and EHS Guidelines about the topics to be considered: climate hazards, climate projections, side-effects on the resilience of people, nature, cultural heritage, assets, and other economic activities. Neither the EU Taxonomy nor the ISG detail measures specific to wind power activities.

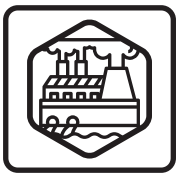


Water: (1) Expected levels of performance for projects located in the EU are more detailed in the EU Taxonomy than in the PSs and EHS Guidelines, but the latter provide more specific measures than the EU Taxonomy for activities in third countries; (2) the EU Taxonomy sets detailed measures regarding the quality status of European surface and groundwater resources, while both the General EHS Guidelines and the ISG for Wind Power are very specific in terms of wastewater levels and

more generic on water body status; (3) while the PSs require application of the most stringent expectations between the EHS Guidelines and local regulations, the EU Taxonomy expects compliance with regulations in the EU. However, outside of the EU, the EU Taxonomy expects "equivalent procedural and substantive rules" that are pursued "in accordance with applicable national law or international standards." Therefore, the PSs and EHS Guidelines can play a significant role as international standards to be applied outside the EU.



Circular economy: Issues related to the transition to a circular economy are not specifically addressed in the EU Taxonomy technical screening criteria for electricity generation from wind power. Even though the ISG do not specifically address circular economy-related topics either, the General EHS Guidelines include recommended best practices on waste management planning, waste prevention, waste recycling, and reuse and hazardous waste management.



Pollution: Given the nature of wind power activities, the issues related to pollution are not specifically targeted in the EU Taxonomy technical screening criteria for DNSH. The ISG for Wind Power mention potential pollution risks related to vessel collisions with offshore wind turbine and light pollution risks caused by onshore wind facilities

Biodiversity: The EU Taxonomy and the PSs and EHS Guidelines adopt two different approaches: while the EU Taxonomy uses a more prescriptive approach, the PSs and ISG for Wind Energy assess expected E&S impacts – and related measures to prevent and/or mitigate them – across multiple stages of project evaluation and monitoring.

Human rights: The EU Taxonomy does not provide specific human rights criteria in this sector. For the comparison of generic human rights criteria of the EU Taxonomy and the expectations set out by the PSs, see ***Comparison Tool 5***.

Workers' rights: While the EU Taxonomy does not include specific criteria with regards to workers' rights in this sector, the ISG for Wind Power detail occupational health and safety hazards specific to wind power operations, such as those associated with working at height and protection from falling objects, working over water, and working in remote locations. In this respect, the ISG go beyond the generic criteria of the EU Taxonomy. For the comparison of generic workers' rights criteria of the EU Taxonomy and expectations set out by the PSs, see ***Comparison Tool 6***.

A detailed comparison table is available in ***Annex 4***.

Practical Tool: Wind Power

The practical tools accompanying this report provide a detailed comparison of the requirements of the EU Taxonomy and those of the PSs and EHS Guidelines (including the Industry Sector Guidelines), and in cases where a PS-based assessment is not sufficient, indicate additional actions to be taken to fully comply with the DNSH and MS criteria of the EU Taxonomy.

In addition to the detailed comparison available in ***Annex 4***, the operational tool for Wind Power provides practitioners with a view of how this alignment might be implemented in practice. The tool is available at ***www.ifc.org/ifceutaxonomy***.

Takeaways that are specific to manufacture of cement

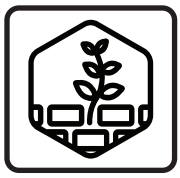
Overall, the recently updated ***Industry Sector Guidelines (ISG) for Cement and Lime Manufacturing*** (dated June 24, 2022) combined with the General EHS Guidelines and the relevant PSs, largely address the EU Taxonomy's DNSH/MS requirements applicable to the Manufacture of Cement activity (Annex I, Activity 3.7).

There are a few instances where the PSs and EHS Guidelines are less prescriptive (i.e., climate change adaptation) than the DNSH/MS criteria and, in contrast, several instances where the PSs and EHS Guidelines are more granular and broader in scope by (i) addressing more topics (e.g., water and wastewater, circular economy, biodiversity, labor, and working conditions), and (ii) considering the whole project lifespan (construction, operation, and decommissioning of cement facilities) and therefore a significant number of additional E&S issues.

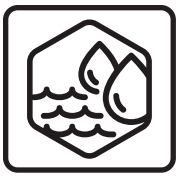
In addition, and similar to the Wind Power sector, the PSs and EHS Guidelines provide more operational information in terms of pollution prevention and control techniques than the EU Taxonomy, particularly for operations carried out outside the EU where EU Directives and Regulations referred to by the DNSH/MS criteria are not applicable, and more generic requirements are proposed.

For each DNSH and minimum safeguards topic, the comparative analysis led to the following conclusions:

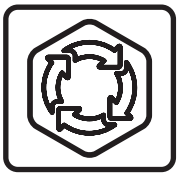
Climate change mitigation: The EU Taxonomy threshold for GHG emissions (469 kgCO2eq/ton of cement) is lower than the GIIP performance indicators for new cement equipment as defined in the ISG (550-700 kgCO2eq/ton cement). No details about acceptable mitigation techniques are provided by the EU Taxonomy, while the ISG specify industry-specific and detailed GHG emissions prevention and mitigation measures.



Climate change adaptation: Neither the EU Taxonomy nor the ISG detail measures and/or techniques specific to cement manufacturing activities. As mentioned in the ***Comparison Tool 1*** section of this report, the general approach is quite similar, though the EU Taxonomy is more specific and detailed than the PSs and EHS Guidelines about the topics to be considered.

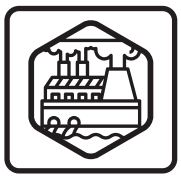


Water: The EU Taxonomy does not provide industry-specific criteria, while the ISG detail (i) specific water management GIIP relevant to the cement industry, and (ii) wastewater discharge levels for cement manufacturing-related parameters, which are to be met where local regulatory standards are above such values. In general, as detailed in the ***Comparison Tool 3*** section of this report, both the EU Taxonomy and the PSs and EHS Guidelines rely on a risk-based approach, which includes an impact assessment and, if needed, a water management plan. However, the former is focused on the quality status of European surface water and groundwater resources, while the latter is more focused on water conservation measures and wastewater management/treatment GIIP.



Circular economy: Issues related to the transition to the circular economy are not specifically targeted by the EU Taxonomy technical screening criteria for the manufacture of cement. It is worth noting that the BATs for the production of cement (Commission Implementing Decision 2013/163/EU) allow for the use of waste as alternative fuel in the kiln and details a full range of acceptable techniques to be implemented by a cement plant when dealing with waste-derived-fuels aimed at mitigating the potential environmental issues associated with the reuse/burning of waste. The ISG also highlight the opportunity to use high-calorific-value waste fuel providing that certain operational conditions in terms

of waste quality standards, emission monitoring, and prevention and control techniques, are met. In addition, the waste management guidance set out by the General EHS Guidelines include recommended GIIP on waste management planning, waste prevention, waste recycling and reuse, and hazardous waste management.



Pollution: The EU Taxonomy (through the application of the BATs) and the ISG provide detailed and very similar requirements/guidance for (i) general air emission management methodologies, (ii) industry-related air pollutants prevention and reduction techniques, and (iii) emission levels. The latter indicates a high level of consistency between the EU Taxonomy and the PSs and EHS Guidelines (e.g., Metals), though for some pollutants (e.g., dust, NOx and SOx), the levels set out by BATs are slightly more stringent than those specified by the ISG.

Biodiversity: Neither the EU Taxonomy nor the ISG detail measures and/or techniques specific to cement manufacturing activities. However, the overall approach to biodiversity is similar between the EU Taxonomy and the PSs and EHSG, as detailed in ***Comparison Tool 4***.

Human rights: The EU Taxonomy does not provide specific human rights criteria in this sector. The comparison of generic human rights criteria of the EU Taxonomy and the expectations set out by the PSs is detailed in ***Comparison Tool 5***.

Workers' rights: While the EU Taxonomy does not include specific criteria with regards to workers' rights in this sector, the ISG detail the most significant hazards for workers during the operational phase of cement and lime manufacturing projects. Those include methods to prevent and control exposure to hazardous dust, explosions and fires, hazardous energy sources, electric hazards, confined spaces, complex and critical lifting, welding, cutting and brazing, heat, noise and vibrations, and physical hazards. In this respect, the ISG go beyond the generic criteria of the EU Taxonomy. For the comparison of generic workers' rights criteria of the EU Taxonomy and expectations set out by the PSs, see ***Comparison Tool 6***.

A detailed comparison table is available in ***Annex 4***.

Practical Tool: Manufacture of Cement

The practical tools accompanying this report provide a detailed comparison of the requirements of the EU Taxonomy and those of the PSs and EHS Guidelines (including the Industry Sector EHS Guidelines), and in cases where a PS-based assessment is not sufficient, indicate additional actions to be taken to fully comply with the DNSH and MS criteria of the EU Taxonomy.

In addition to the detailed comparison available in ***Annex 4***, the operational tool for Manufacture of Cement provides practitioners with a view of how this alignment might be implemented in practice. The tool is available at ***www.ifc.org/ifceutaxonomy***.

4

Conclusion

4 Conclusion

The lack of alignment among the existing frameworks and regulations that govern approaches to implement sustainable finance instruments both in developed economies and emerging markets is a key challenge to the successful delivery of the low-carbon transition. This report and its accompanying tools are a contribution to addressing the calls from investors and standards-setters to improve alignment and interoperability between existing international standards and new regulatory obligations.

The analysis presented in this report suggests that **the IFC PSs and WBG EHS Guidelines, recognized as leading international standards and technical reference documents for assessing and managing E&S risks and impacts, provide a useful and credible Framework that can be leveraged to satisfy the DNSH and MS criteria set by the EU Taxonomy.** While some differences exist when comparing the details of each Framework, the overall approach of the PSs and EHS Guidelines is similar to the EU Taxonomy's DNSH and MS criteria approach: identifying the risks and impacts that are material, and assessing, avoiding, mitigating, and managing them in line with good international industry practice (GIIP).

This alignment and comparability are relevant to activities within the EU, and even more so for activities in non-EU countries:

- For activities conducted in EU countries, although the EU Taxonomy's requirements – in particular DNSH – make reference to detailed EU regulations that are not systematically directly aligned with the language of PSs and EHS Guidelines, application of the latter remains useful for practitioners. As per PS1, para. 15, users of the PSs are required to ensure that business activities "will operate in compliance with applicable laws and regulations and meet the requirements of Performance Standards 1 through 8." Therefore, whether or not the PSs requirements and EHS Guidelines levels and measures are fully aligned with EU requirements, compliance with EU regulations is embedded in the framework of the PSs as a minimum requirement for business activities within the EU.

- **The PSs and EHS Guidelines may constitute an even more relevant framework when assessing alignment with the EU Taxonomy's DNSH and MS criteria for activities in non-EU countries and bring significant value to close a fundamental gap that the EU Taxonomy will face when extending its reporting requirements to activities in emerging markets.** The PSs and EHS Guidelines can provide consistency in underdeveloped regulatory environments, and are widely known to financial institutions globally, creating potential synergies for the PSs to support the implementation of the EU Taxonomy as its scope of application expands.

Indeed, for the EU Taxonomy's DNSH and MS criteria that refer to international standards rather the European regulation for activities in third countries, **the PSs, by requiring business activities to achieve whichever is more stringent between host country regulations and the levels and measures presented in EHS Guidelines (PS Overview, para. 7), provide a strong framework to support the application of GIIP for activities in non-EU countries, in line with the objectives of the EU Taxonomy.**

Moreover, the PSs and EHS Guidelines are aligned with those DNSH and MS criteria of the EU Taxonomy that are not related to specific and detailed EU regulations. This is especially the case for the generic criteria for DNSH to protection and restoration of biodiversity and ecosystems, where Performance Standard 6 (which is explicitly cited by the Climate Delegated Act) appears to be sufficient to meet the criteria for activities both within and outside the EU. On the other hand, for some E&S topics (e.g., pollution, water), the generic DNSH and MS criteria of the EU Taxonomy reference many EU regulations. In such cases, the use of the PSs and EHS Guidelines (in addition to their minimum requirement of meeting national laws) remains relevant, but gap analysis between EU regulations, PSs requirements, and EHS Guidelines guidance may be required for economic activities that are conducted within the EU.

To further connect the EU Taxonomy's DNSH and MS criteria with the PSs and EHS Guidelines from an operational perspective, new tools are needed to clarify expectations to complement the PSs and EHS Guidelines to comply fully with the DNSH and MS criteria disclosure requirements, and eventually demonstrate alignment with the EU Taxonomy. To support and illustrate this objective, **an operational tool accompanying this report was developed** based on the comparative analysis presented in the report for two economic activities: **electricity generation from wind power** and **manufacture of cement.** These tools set a checklist of what should be done to comply with the DNSH and MS criteria, in cases where an assessment based on the requirements of the PSs and levels and measures of the EHS Guidelines would be conducted. Such tools could be replicated for other economic activities listed in the EU Taxonomy, and for other environmental objectives of the EU Taxonomy to further help practitioners.

The analysis presented in this report also contributes to providing helpful foundations and operating principles for companies and financial institutions subject to those taxonomies adopted outside the EU which include similar DNSH and MS requirements. While not necessarily fully aligned with the EU Taxonomy requirements, several taxonomies contain features that are interoperable and comparable to the EU's DNSH and MS criteria. The conclusions of this report support further efforts globally to promote alignment and interoperability of sustainable finance frameworks across markets.

Moving forward, additional research and analysis may be considered to integrate the continuous developments that will take place in this area, not only at EU level (e.g., European sustainability reporting standards, Directive on corporate sustainability due diligence, etc.), but also globally, in particular with the emergence of new regional and national taxonomies, and international sustainability standards. In addition, potential future revisions and/or updates of the PSs and EHS Guidelines would have to be taken into consideration when revisiting the findings of this report.

Annexes

Annex 1:

Summary of strategic comparative analysis

	EU TAXONOMY	PERFORMANCE STANDARDS	EHS GUIDELINES
OFFICIAL NAME	EU taxonomy for sustainable activities (EU Taxonomy)	IFC Environmental and Social Performance Standards (PSs) and Guidance Notes	World Bank Group Environmental, Health, and Safety Guidelines (EHSG)
REFERENCE/VERSION	Regulation (EU) 2020/852 of the European Parliament and of the Council of 18 June 2020 on the establishment of a framework to facilitate sustainable investment, and amending Regulation (EU) 2019/2088 (the EU Taxonomy)	January 1, 2012	April 30, 2007 (for the General EHS Guidelines)
AUTHORS	EU Commission	International Finance Corporation (World Bank Group)	World Bank Group
NATURE	Regulation	Standard	Technical reference documents
OVERALL DEFINITION	Robust, science-based classification system	A risk management framework for assessment and management of environmental and social risks and impacts	Technical reference documents with general and industry-specific examples of good international industry practice
OBJECTIVES	> Allowing non-financial and financial companies to share a common definition of sustainability > Providing protection against greenwashing > Facilitating the achievement of the European Green Deal (become climate-neutral by 2050 and reduce GHG emissions by at least 55% by 2030 compared to 1990 levels)	> Avoiding, mitigating, and managing environmental and social risks and impacts as a way of doing business in a sustainable way > Defining companies' responsibilities for managing their environmental and social risks	> Providing guidance on EHS performance levels and measures that are generally considered to be achievable in new facilities by existing technology at reasonable costs > Supplementing PS2, PS3, and PS4 with benchmark criteria
WHAT IT IS...	The EU Taxonomy establishes the criteria for determining whether an economic activity qualifies as environmentally sustainable for the purposes of establishing the degree to which an investment is environmentally sustainable. The EU Taxonomy	The eight PSs establish standards that the party responsible for implementing and operating a business activity that is being financed is expected to meet throughout the life of the investment. A set of eight Guidance Notes related to each PS offers	The General EHS Guidelines contain information on cross-cutting environmental, health, and safety issues potentially applicable to all industry sectors. These technical reference documents provide general and industry-specific examples of Good International

	EU TAXONOMY	PERFORMANCE STANDARDS	EHS GUIDELINES
WHAT IT IS (CONT'D)	recognizes as green, or "environmentally sustainable", economic activities that make a **substantial contribution** to at least one of the EU's climate and environmental objectives, while at the same time not significantly harming any of these objectives ("do no significant harm" principle – **DNSH**) and meeting minimum safeguards (**MS**).	guidance on the requirements contained in the PSs, including reference materials and good sustainability practices to improve business activity performance.	Industry Practice (GIIP). The General EHS Guidelines are designed to be used together with the relevant Industry Sector EHS Guidelines which provide guidance to users on EHS issues in specific industry sectors.
WHAT IT IS NOT...	> The EU Taxonomy is not a mandatory list of economic activities for investors to invest in. Nor does it set mandatory requirements on environmental performance for companies or for financial products. Investors are free to choose what to invest in. > The EU Taxonomy criteria does not cover all activities of the economy. It is estimated, however, that current criteria (Climate Delegated Act) cover the economic activities of roughly 40% of EU-domiciled listed companies, in sectors which are responsible for almost 80% of direct greenhouse gas emissions in the EU.[32]	> The PSs are not of a regulatory nature, even though financial institutions that adopt the PSs commit to applying them to the business activities they finance, and their investee companies commit to applying the PSs through legal agreements. > The PSs and their related Guidance Notes do not require compliance with specific quantitative levels and measures. However, by referring to the EHS Guidelines, they require that "when host country regulations differ from the levels and measures presented in the EHS Guidelines, projects are expected to achieve whichever is more stringent (PS Overview, para. 7). > It is not the responsibility of the financial institution to apply the PSs, but that of the business activities it finances. The financial institution monitors implementation of the PSs by the business activities it finances.	The EHS Guidelines do not constitute E&S risk management standards like the PSs, but are technical reference documents. However, through certain provisions of the PSs, business activities are required to meet the levels and measures provided in the EHS Guidelines. In particular, PS3 (paras 4 and 5) requires business activities to achieve the levels and measures provided in the EHS Guidelines.
RELATED REGULATIONS AND/OR INITIATIVES	> The Commission Delegated Regulation (EU) 2021/2139 of 4 June 2021 (the **Climate Delegated Act**) and the Commission Delegated Regulation (EU) 2022/1214 (the **Complementary Climate Delegated Act**) establish the technical screening criteria for determining the conditions under which a specific economic activity qualifies as contributing substantially to climate change mitigation or climate change adaptation and the technical	> The **Equator Principles** (EP) are intended to serve as a common baseline and risk management framework for financial institutions to identify, assess and manage environmental and social risks when financing projects. Under Principle 3 (applicable environmental and social standards), it is required that projects in non-designated countries must comply with the applicable PSs and EHS Guidelines	*See above*.

[32] ***European Commission: EU Taxonomy Climate Delegated Act and Amendments to Delegated Acts***

	EU TAXONOMY	PERFORMANCE STANDARDS	EHS GUIDELINES
RELATED REGULATIONS AND/OR INITIATIVES (CONT'D)	screening criteria for determining whether that economic activity causes no significant harm to one or more of those environmental objectives. > The Commission Delegated Regulation (EU) 2021/2178 of 6 July 2021 (the **Disclosures Delegated Act**) supplements the current Corporate Sustainability Reporting Directive (**CSRD**) and requires large companies to disclose information about their alignment of their activities with the EU Taxonomy. The Proposal for a Corporate Sustainability Reporting Directive (**CSRD**) extends the scope of Non-Financial Reporting Directive (NFRD) to more companies. > For each financial product, Regulation (EU) 2019/2088 of 27 November 2019 on sustainability-related disclosures (**SFDR**) requires portfolio managers to disclose information about how the EU Taxonomy is taken into account (comply or explain approach). The EU Taxonomy is also used as a reference in other European regulations (such as **suitability assessments under MiFID or IDD**), standards (such as the **EU Green Bond Standard** or the **EU Ecolabel for Retail Financial Products** that are currently under development) and directives (such as the **Corporate Sustainability Due Diligence Directive** that is at a proposal stage).		
EXTERNAL REFERENCES	As criteria: > EU regulations > WHO Recommended Classification of Pesticides by Hazard > Guidelines for Multinational Enterprises (OECD, 2011) > Guiding Principles on Business and Human Rights (United Nations, 2011) > Declaration on Fundamental Principles and Rights at Work (International Labour Organization, 1998) > International Bill of Human Rights (United Nations, 1948)	As recurring/major examples of good practices and international standards (non-exhaustive list of references): > World Bank/IFC > United Nations (UNECE, UNEP, WHO, OHCHR, ILO, etc.) > US regulations and agencies (e.g., Environmental Protection Agency) > EU regulations and agencies (e.g., European Environment Agency) > ISO > OHSAS	As recurring/major examples of good practice: > United Nations (World Health Organization, International Labour Organization) > US regulations (Environmental Protection Agency, Department of Energy, Occupational Safety and Health Administration, National Ambient Air Quality Standards, American Conference of Governmental Industrial Hygienists, etc.) > EU, UK, and Canadian regulations

	EU TAXONOMY	PERFORMANCE STANDARDS	EHS GUIDELINES
EXTERNAL REFERENCES (CONT'D)		> SAI > Declaration on Fundamental Principles and Rights at Work (International Labour Organization, 1998) > International Bill of Human Rights (United Nations, 1948) > IPCC (Intergovernmental Panel on Climate Change) > IUCN (International Union for Conservation of Nature) > UNESCO	
STATE OF PLAY	**Partly in force.** EU Taxonomy, Climate Delegated Acts, Disclosures Delegated Act and SFDR are in force and will be gradually implemented up to 2024. As of 2022, companies were only required to identify their activities that are targeted by the Climate Delegated Acts. The calculation of their alignment (considering the DNSH and MS) will be required starting from 2023 for non-financial companies and from 2024 for financial undertakings. The second Delegated Acts specifying the screening criteria for the other four environmental objectives of the EU Taxonomy will be adopted in 2022 and will enter into force one year later. The CSRD was adopted by the Council on November 28, 2022, and it will enter into force 20 days after publication.[33]	**Fully in force.** The PSs were established in 2006 and are updated on a regular basis (latest update: 2012).	**Fully in force.** The EHS Guidelines are updated on a regular basis.
TARGET E&S TOPICS	> Climate Change Mitigation > Climate Change Adaptation > Sustainable Use and Protection of Water and Marine Resources > Transition to a Circular Economy > Pollution Prevention and Control > Protection and Restoration of Biodiversity and Ecosystems > Fundamental Human and Labor Rights	> Assessment and Management of Environmental and Social Risks and Impacts > Labor and Working Conditions > Resource Efficiency and Pollution Prevention > Community Health, Safety, and Security > Land Acquisition and Involuntary Resettlement > Biodiversity Conservation and Sustainable Management of Living Natural Resources > Indigenous Peoples > Cultural Heritage	> Environment (air, energy, water, waste, noise, land) > Occupational Health and Safety > Community Health and Safety

[33] For more information about four stages of implementation of CSRD reporting, read ***https://www.consilium.europa.eu/en/press/press-releases/2022/11/28/council-gives-final-green-light-to-corporate-sustainability-reporting-directive/***

	EU TAXONOMY	PERFORMANCE STANDARDS	EHS GUIDELINES
TARGET SECTORS	The Climate Delegated Acts cover the following macro-sectors: > Forestry (4 sectors) > Environmental protection and restoration activities (1 sector) > Manufacturing (16 sectors) > Energy (31 sectors) > Water supply, sewerage, waste management and remediation (12 sectors) > Transport (20 sectors) > Construction and real estate (7 sectors) > Information and communication (4 sectors) > Professional, scientific and technical activities (4 sectors) > Financial and insurance activities (2 sectors) > Education (1 sector) > Human health and social work activities (1 sector) > Arts, entertainment, and recreation (3 sectors)	The Performance Standards are industry- agnostic.	The EHS Guidelines cover all sectors, with specific guidelines in the following macro-sectors: > Agribusiness/Food Production (13 sectors) > Chemicals (11 sectors) > Forestry (4 sectors) > General manufacturing (12 sectors) > Infrastructure (14 sectors) > Mining (1 sector) > Oil and Gas (3 sectors) > Power (4 sectors)

Annex 2:

List of economic activities listed in the EU Taxonomy and subject to Industry Sectors EHS Guidelines

Note: For the sake of simplicity, the table presented below does not include the tertiary sectors that are included in the EU Taxonomy since they are not addressed by the Industry Sector Guidelines. It is important to note, however, that the **PSs and General EHS Guidelines address all the macro-sectors identified by the EU Taxonomy** (as illustrated Table 3 of this report).

INDUSTRY	EU TAXONOMY	INDUSTRY SECTOR EHS GUIDELINES
FORESTRY	Afforestation	Forest Harvesting Operations
	Rehabilitation and restoration of forests, including reforestation and natural forest regeneration after an extreme event	Forest Harvesting Operations
	Forest management	Forest Harvesting Operations
	Conservation forestry	Forest Harvesting Operations
MANUFACTURING	Manufacture of renewable energy technologies	Covered by the IFC PSs/General EHS Guidelines
	Manufacture of equipment for the production and use of hydrogen	Covered by the IFC PSs/General EHS Guidelines
	Manufacture of low carbon technologies for transport	Covered by the IFC PSs/General EHS Guidelines
	Manufacture of batteries	Covered by the IFC PSs/General EHS Guidelines
	Manufacture of energy efficiency equipment for buildings	Covered by the IFC PSs/General EHS Guidelines
	Manufacture of other low carbon technologies	Covered by the IFC PSs/General EHS Guidelines
	Manufacture of cement	Cement and Lime Manufacturing
	Manufacture of aluminium	Foundries; Base Metal Smelting and Refining
	Manufacture of iron and steel	Foundries; Integrated Steel Mills
	Manufacture of hydrogen	Covered by the IFC PSs/General EHS Guidelines
	Manufacture of carbon black	Large Volume Inorganic Compounds Manufacturing and Coal Tar Distillation
	Manufacture of soda ash	Large Volume Inorganic Compounds Manufacturing and Coal Tar Distillation

INDUSTRY	EU TAXONOMY	INDUSTRY SECTOR EHS GUIDELINES
MANUFACTURING (CONT'D)	Manufacture of chlorine	Large Volume Inorganic Compounds Manufacturing and Coal Tar Distillation
	Manufacture of organic basic chemicals	Large Volume Petroleum-based Organic Chemicals Manufacturing
	Manufacture of anhydrous ammonia	Large Volume Inorganic Compounds Manufacturing and Coal Tar Distillation Nitrogenous Fertilizer Production
	Manufacture of nitric acid	Large Volume Inorganic Compounds Manufacturing and Coal Tar Distillation Nitrogenous Fertilizer Production
	Manufacture of plastics in primary form	Metal, Plastic, Rubber Products Manufacturing
ENERGY	Electricity generation using solar photovoltaic technology	Covered by the IFC PSs/General EHS Guidelines
	Electricity generation using concentrated solar power (CSP) technology	Covered by the IFC PSs/General EHS Guidelines
	Electricity generation from wind power	Wind Energy
	Electricity generation from ocean energy technologies	Covered by the IFC PSs/General EHS Guidelines
	Electricity generation from hydropower	Covered by the IFC PSs/General EHS Guidelines; and ***IFC Good Practice Note on EHS Approaches for Hydropower Projects***
	Electricity generation from geothermal energy	Geothermal Power Generation
	Electricity generation from renewable non-fossil gaseous and liquid fuels	Covered by the IFC PSs/General EHS Guidelines
	Electricity generation from bioenergy	Covered by the IFC PSs/General EHS Guidelines
	Transmission and distribution of electricity	Electric Power Transmission and Distribution
	Storage of electricity	Covered by the IFC PSs/General EHS Guidelines
	Storage of thermal energy	Thermal Power
	Storage of hydrogen	Covered by the IFC PSs/General EHS Guidelines
	Manufacture of biogas and biofuels for use in transport and of bioliquids	Covered by the IFC PSs/General EHS Guidelines
	Transmission and distribution networks for renewable and low-carbon gases	Covered by the IFC PSs/General EHS Guidelines
	District heating/cooling distribution	Covered by the IFC PSs/General EHS Guidelines
	Installation and operation of electric heat pumps	Covered by the IFC PSs/General EHS Guidelines
	Cogeneration of heat/cool and power from solar energy	Covered by the IFC PSs/General EHS Guidelines
	Cogeneration of heat/cool and power from geothermal energy	Geothermal Power Generation
	Cogeneration of heat/cool and power from renewable non-fossil gaseous and liquid fuels	Covered by the IFC PSs/General EHS Guidelines

INDUSTRY	EU TAXONOMY	INDUSTRY SECTOR EHS GUIDELINES
ENERGY (CONT'D)	Cogeneration of heat/cool and power from bioenergy	Covered by the IFC PSs General EHS Guidelines
	Production of heat/cool from solar thermal heating	Thermal Power Plants
	Production of heat/cool from geothermal energy	Geothermal Power Generation
	Production of heat/cool from renewable non-fossil gaseous and liquid fuels	Covered by the IFC PSs/General EHS Guidelines
	Production of heat/cool from bioenergy	Covered by the IFC PSs/General EHS Guidelines
	Production of heat/cool using waste heat	Covered by the IFC PSs/General EHS Guidelines
	Pre-commercial stages of advanced technologies to produce energy from nuclear processes with waste from fuel cycle	Covered by the IFC PSs/General EHS Guidelines
	Construction and safe operation of new nuclear power plants, for the generation of electricity or heat, including for hydrogen production, using best-available technologies	Covered by the IFC PSs/General EHS Guidelines
	Electricity generation from nuclear energy in existing installations	Covered by the IFC PSs/General EHS Guidelines
	Electricity generation from fossil gaseous fuels	Covered by the IFC PSs/General EHS Guidelines
	High-efficiency co-generation of heatcool and power from fossil gaseous fuels	Offshore Oil and Gas Development; Onshore Oil and Gas Development
	Production of heat/cool from fossil gaseous fuels in an efficient district heating and cooling system	Offshore Oil and Gas Development; Onshore Oil and Gas Development
WATER, SUPPLY, SEWERAGE, WASTE MANAGEMENT, AND REMEDIATION	Construction, extension and operation of water collection, treatment and supply systems	Water and Sanitation
	Renewal of water collection, treatment and supply systems	Water and Sanitation
	Construction, extension and operation of wastewater collection and treatment	Water and Sanitation
	Renewal of wastewater collection and treatment	Water and Sanitation
	Collection and transport of non-hazardous waste in source segregated fractions	Waste Management Facilities
	Anaerobic digestion of sewage sludge	Water and Sanitation
	Anaerobic digestion of bio-waste	Covered by the IFC PSs/General EHS Guidelines
	Composting of bio-waste	Covered by the IFC PSs/General EHS Guidelines
	Material recovery from non-hazardous waste	Waste Management Facilities
	Landfill gas capture and utilisation	Waste Management Facilities
	Transport of CO_2	Covered by the IFC PSs/General EHS Guidelines
	Underground permanent geological storage of CO_2	Covered by the IFC PSs/General EHS Guidelines

INDUSTRY	EU TAXONOMY	INDUSTRY SECTOR EHS GUIDELINES
TRANSPORT	Passenger interurban rail transport	Railways
	Freight rail transport	Railways
	Urban and suburban transport, road passenger transport	Covered by the IFC PSs/General EHS Guidelines
	Operation of personal mobility devices, cycle logistics	Covered by the IFC PSs/General EHS Guidelines
	Transport by motorbikes, passenger cars, and light commercial vehicles	Covered by the IFC PSs/General EHS Guidelines
	Freight transport services by road	Covered by the IFC PSs/General EHS Guidelines
	Inland passenger water transport	Covered by the IFC PSs General EHS Guidelines
	Inland freight water transport	Shipping
	Retrofitting of inland water passenger and freight transport	Shipping
	Sea and coastal freight water transport, vessels for port operations and auxiliary activities	Shipping
	Sea and coastal passenger water transport	Covered by the IFC PSs/General EHS Guidelines
	Retrofitting of sea and coastal freight and passenger water transport	Shipping
	Infrastructure for personal mobility, cycle logistics	Covered by the IFC PSs/General EHS Guidelines
	Infrastructure for rail transport	Railways Ports, Harbors, and Terminals
	Infrastructure enabling low-carbon road transport and public transport	Ports, Harbors, and Terminals
	Infrastructure enabling low carbon water transport	Ports, Harbors, and Terminals
	Low carbon airport infrastructure	Airports
	Passenger interurban rail transport	Railways
	Freight rail transport	Railways
	Urban and suburban transport, road passenger transport	Covered by the IFC PSs/General EHS Guidelines
	Operation of personal mobility devices, cycle logistics	Covered by the IFC PSs/General EHS Guidelines
	Transport by motorbikes, passenger cars, and light commercial vehicles	Covered by the IFC PSs/General EHS Guidelines

INDUSTRY	EU TAXONOMY	INDUSTRY SECTOR EHS GUIDELINES
CONSTRUCTION AND REAL ESTATE ACTIVITIES	Construction of new buildings	Construction Materials Extraction
	Renovation of existing buildings	Covered by the IFC PSs/General EHS Guidelines
	Installation, maintenance, and repair of energy efficiency equipment	Covered by the IFC PSs/General EHS Guidelines
	Installation, maintenance, and repair of charging stations for electric vehicles in buildings (and parking spaces attached to buildings)	Covered by the IFC PSs/General EHS Guidelines
	Installation, maintenance, and repair of instruments and devices for measuring, regulation, and controlling energy performance of buildings	Covered by the IFC PSs/General EHS Guidelines
	Installation, maintenance, and repair of renewable energy technologies	Covered by the IFC PSs/General EHS Guidelines
	Acquisition and ownership of buildings	Covered by the IFC PSs/General EHS Guidelines

Annex 3:

EU Taxonomy DNSH heatmap

As indicated in this report, the European Commission has set three options for the application of the"do no significant harm" principle depending on each economic activity: for a given eligible activity, the DNSH criteria is either specific (i.e., tailored to the economic activity being considered), generic (i.e., general technical criteria uniformly applied across various economic activities), or not applicable (i.e., assuming that the economic activity cannot significantly harm the other environmental objectives). This heatmap provides further details on the coverage of DNSH criteria for climate change mitigation and adaptation per sector.

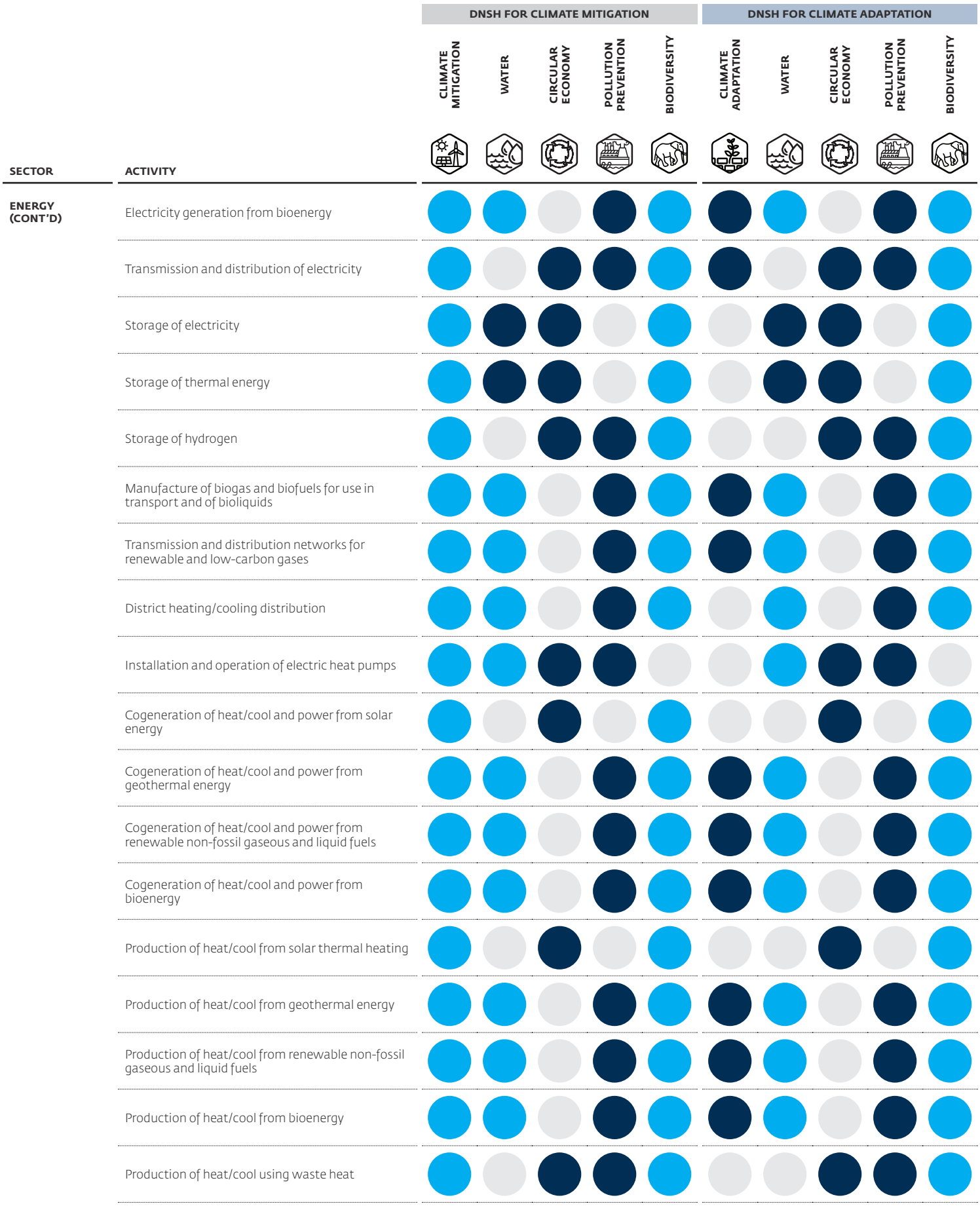
LEGEND: Generic criteria (Appendix A to D) | Additions to Appendix A-D / Specific criteria | Not eligible | Not applicable

		DNSH FOR CLIMATE MITIGATION					DNSH FOR CLIMATE ADAPTATION				
SECTOR	**ACTIVITY**	CLIMATE MITIGATION	WATER	CIRCULAR ECONOMY	POLLUTION PREVENTION	BIODIVERSITY	CLIMATE ADAPTATION	WATER	CIRCULAR ECONOMY	POLLUTION PREVENTION	BIODIVERSITY
FORESTRY	Afforestation	Generic	Additions	Not eligible	Additions	Additions	Additions	Additions	Not applicable	Additions	Additions
	Rehabilitation and restoration of forests, including reforestation and natural forest regeneration after an extreme event	Generic	Additions	Additions	Additions	Additions	Additions	Additions	Additions	Additions	Additions
	Forest management	Generic	Additions	Additions	Additions	Additions	Additions	Additions	Additions	Additions	Additions
	Conservation forestry	Generic	Additions	Additions	Additions	Additions	Additions	Additions	Additions	Additions	Additions
ENVIRONMENTAL PROTECTION AND RESTORATION	Restoration of wetlands	Generic	Generic	Additions	Additions	Additions	Additions	Generic	Additions	Additions	Additions
MANUFACTURING	Manufacture of renewable energy technologies	Generic	Generic	Additions	Generic	Generic	Not applicable	Generic	Additions	Generic	Generic
	Manufacture of equipment for the production and use of hydrogen	Generic	Generic	Additions	Generic	Generic	Not applicable	Generic	Additions	Generic	Generic
	Manufacture of low carbon technologies for transport	Generic	Generic	Additions	Additions	Generic	Not applicable	Generic	Additions	Additions	Generic
	Manufacture of batteries	Generic	Generic	Additions	Additions	Generic	Not applicable	Generic	Additions	Additions	Generic
	Manufacture of energy efficiency equipment for buildings	Generic	Generic	Additions	Generic	Generic	Not applicable	Generic	Additions	Generic	Generic
	Manufacture of other low carbon technologies	Generic	Generic	Additions	Generic	Generic	Not applicable	Generic	Additions	Generic	Generic

LEGEND: Generic criteria (Appendix A to D) | Additions to Appendix A-D / Specific criteria | Not eligible | Not applicable

		DNSH FOR CLIMATE MITIGATION					DNSH FOR CLIMATE ADAPTATION				
SECTOR	**ACTIVITY**	**CLIMATE MITIGATION**	**WATER**	**CIRCULAR ECONOMY**	**POLLUTION PREVENTION**	**BIODIVERSITY**	**CLIMATE ADAPTATION**	**WATER**	**CIRCULAR ECONOMY**	**POLLUTION PREVENTION**	**BIODIVERSITY**
MANUFACTURING (CONT'D)	Manufacture of cement	●	●	○	■	●	■	●	○	■	●
	Manufacture of aluminium	●	●	○	■	●	■	●	○	■	●
	Manufacture of iron and steel	●	●	○	■	●	■	●	○	■	●
	Manufacture of hydrogen	●	●	○	■	●	■	●	○	■	●
	Manufacture of carbon black	●	●	○	■	●	■	●	○	■	●
	Manufacture of soda ash	●	●	○	■	●	■	●	○	■	●
	Manufacture of chlorine	●	●	○	■	●	■	●	○	■	●
	Manufacture of organic basic chemicals	●	●	○	■	●	■	●	○	■	●
	Manufacture of anhydrous ammonia	●	●	○	■	●	■	●	○	■	●
	Manufacture of nitric acid	●	●	○	■	●	■	●	○	■	●
	Manufacture of plastics in primary form	●	●	○	■	●	■	●	○	■	●
ENERGY	Electricity generation using solar photovoltaic technology	●	○	■	○	●	○	○	■	○	●
	Electricity generation using concentrated solar power (CSP) technology	●	●	■	○	●	○	●	■	○	●
	Electricity generation from wind power	●	■	■	○	■	○	■	■	○	■
	Electricity generation from ocean energy technologies	●	■	■	■	■	○	■	■	■	■
	Electricity generation from hydropower	●	■	○	○	●	■	■	○	○	●
	Electricity generation from geothermal energy	●	●	○	■	●	■	●	○	■	●
	Electricity generation from renewable non-fossil gaseous and liquid fuels	●	●	○	■	●	■	●	○	■	●

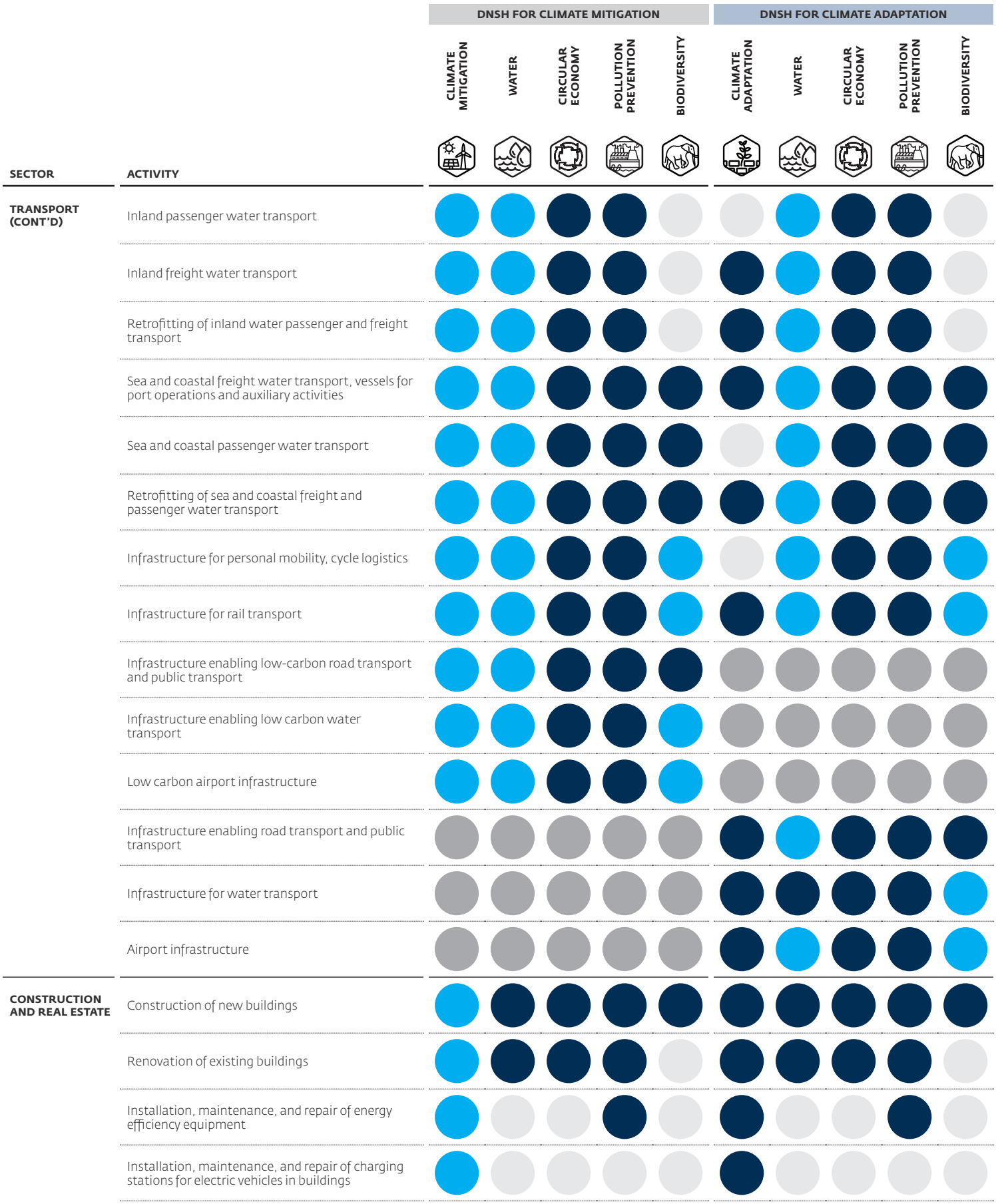
LEGEND: Generic criteria (Appendix A to D) | Additions to Appendix A-D / Specific criteria | Not eligible | Not applicable



LEGEND: Generic criteria (Appendix A to D) | Additions to Appendix A-D / Specific criteria | Not eligible | Not applicable

		DNSH FOR CLIMATE MITIGATION					DNSH FOR CLIMATE ADAPTATION				
SECTOR	**ACTIVITY**	**CLIMATE MITIGATION**	**WATER**	**CIRCULAR ECONOMY**	**POLLUTION PREVENTION**	**BIODIVERSITY**	**CLIMATE ADAPTATION**	**WATER**	**CIRCULAR ECONOMY**	**POLLUTION PREVENTION**	**BIODIVERSITY**
WATER SUPPLY, SEWERAGE, WASTE MANAGEMENT, AND REMEDIATION	Construction, extension, and operation of water collection, treatment, and supply systems	●	●			●		●			●
	Renewal of water collection, treatment, and supply systems	●	●			●		●			●
	Construction, extension, and operation of wastewater collection and treatment	●	■		■	●	■	●		■	●
	Renewal of wastewater collection and treatment	●	■		■	●	■	●		■	●
	Collection and transport of non-hazardous waste in source- segregated fractions	●		■					■		
	Anaerobic digestion of sewage sludge	●	●		■	●	■	●		■	●
	Anaerobic digestion of bio-waste	●	●		■	●	■	●		■	●
	Composting of bio-waste	●			■	●				■	●
	Material recovery from non-hazardous waste	●				●					●
	Landfill gas capture and utilisation	●			■	●	■			■	●
	Transport of CO_2	●	●			●	■	●			●
	Underground permanent geological storage of CO_2	●	●		■	●	■	●		■	●
TRANSPORT	Passenger interurban rail transport	●		■	■				■	■	
	Freight rail transport	●		■	■		■		■	■	
	Urban and suburban transport, road passenger transport	●		■	■				■	■	
	Operation of personal mobility devices, cycle logistics	●		■					■		
	Transport by motorbikes, passenger cars, and light commercial vehicles	●		■	■		■		■	■	
	Freight transport services by road	●		■	■		■		■	■	

LEGEND: Generic criteria (Appendix A to D) | Additions to Appendix A-D / Specific criteria | Not eligible | Not applicable



LEGEND: Generic criteria (Appendix A to D) | Additions to Appendix A-D / Specific criteria | Not eligible | Not applicable

		DNSH FOR CLIMATE MITIGATION					DNSH FOR CLIMATE ADAPTATION				
SECTOR	**ACTIVITY**	**CLIMATE MITIGATION**	**WATER**	**CIRCULAR ECONOMY**	**POLLUTION PREVENTION**	**BIODIVERSITY**	**CLIMATE ADAPTATION**	**WATER**	**CIRCULAR ECONOMY**	**POLLUTION PREVENTION**	**BIODIVERSITY**
CONSTRUCTION AND REAL ESTATE (CONT'D)	Installation, maintenance and repair of instruments and devices for measuring, regulation, and controlling energy performance of buildings	Generic					Additions				
	Installation, maintenance and repair of renewable energy technologies	Generic					Additions				
	Acquisition and ownership of buildings	Generic					Additions				
INFORMATION AND COMMUNICATION	Data processing, hosting, and related activities	Generic	Generic	Additions			Additions	Additions	Additions		
	Data-driven solutions for GHG emissions reductions	Generic		Additions			Not eligible	Not eligible	Not eligible	Not eligible	Not eligible
	Computer programming, consultancy, and related activities	Not eligible	Not eligible	Not eligible	Not eligible	Not eligible					
PROFESSIONAL, SCIENTIFIC, AND TECHNICAL ACTIVITIES	Close to market research, development, and innovation	Generic	Additions	Additions	Additions	Additions	Additions	Additions	Additions	Additions	Additions
	Research, development, and innovation for direct air capture of CO_2	Generic	Additions	Additions	Additions	Additions	Not eligible	Not eligible	Not eligible	Not eligible	Not eligible
	Professional services related to energy performance of buildings	Generic					Not eligible	Not eligible	Not eligible	Not eligible	Not eligible
	Engineering activities and related technical consultancy dedicated to adaptation to climate change	Not eligible	Not eligible	Not eligible	Not eligible	Not eligible	Additions	Generic			
FINANCIAL AND INSURANCE ACTIVITIES	Non-life insurance: underwriting of climate-related perils	Not eligible	Not eligible	Not eligible	Not eligible	Not eligible	Additions				
	Reinsurance	Not eligible	Not eligible	Not eligible	Not eligible	Not eligible	Additions				
EDUCATION	Education	Not eligible	Not eligible	Not eligible	Not eligible	Not eligible					
HUMAN HEALTH AND SOCIAL WORK	Residential care activities	Not eligible	Not eligible	Not eligible	Not eligible	Not eligible				Additions	
ARTS, ENTERTAINMENT, AND RECREATION	Creative, arts, and entertainment activities	Not eligible	Not eligible	Not eligible	Not eligible	Not eligible					
	Libraries, archives, museums, and cultural activities	Not eligible	Not eligible	Not eligible	Not eligible	Not eligible					
	Motion picture, video, and television program production; sound recording; and music publishing	Not eligible	Not eligible	Not eligible	Not eligible	Not eligible					

Annex 4:

Detailed comparison of technical requirements: Wind Power and Cement Manufacturing

Comparative tool 7: Detailed technical comparative analysis for electricity generation from wind power

Note: This comparative analysis focuses on specific DNSH criteria for this sector in the EU Taxonomy and sector-specific technical guidance provided in the WBG EHS Guidelines. The analysis must be read together with the comparative analyses done in this report between the EU Taxonomy's generic DNSH/MS criteria and the PSs and General EHS Guidelines.

TOPIC	EU TAXONOMY	IFC PSs AND WBG EHS GUIDELINES
	> **Technical screening criteria for determining the conditions under which Electricity generation from wind power qualifies as contributing substantially to climate change mitigation and for determining whether that economic activity causes no significant harm to any of the other environmental objectives** (Commission Delegated Regulation (EU) 2021/2139, Annex I, activity 4.3) > **Technical screening criteria for determining the conditions under which Electricity generation from wind power qualifies as contributing substantially to climate change adaptation and for determining whether that economic activity causes no significant harm to any of the other environmental objectives** (Commission Delegated Regulation (EU) 2021/2139, Annex II, activity 4.3)	> **Industry Sector EHS Guidelines for Wind Energy** > **General EHS Guidelines** (1.6 for waste management)
CLIMATE CHANGE ADAPTATION	No addition to the generic criteria (see ***Comparison tool 1: Technical comparative analysis on climate change adaptation***) (Commission Delegated Regulation (EU) 2021/2139, Annex I, activity 4.3)	No addition to the PSs and General EHS Guidelines (see ***Comparison tool 1: Technical comparative analysis on climate change adaptation***)
WATER	In addition to the generic criteria (***Comparison tool 2: Technical comparative analysis on water***): **NOISE:** > **Underwater noise from offshore wind facility:** In case of construction of offshore wind, the activity does not hamper the achievement of good environmental status as set out in **Directive 2008/56/EC** (Marine Strategy Framework Directive), requiring that the appropriate measures are taken to prevent or mitigate impacts of the introduction of underwater noise and energy	In addition to the PSs and General EHS (***Comparison tool 2: Technical comparative analysis on water***): **NOISE:** > **Underwater noise and vibration from offshore construction**—e.g., from piling activity—may adversely impact marine life, including fish, marine mammals, and sea turtles. Environmental parameters that determine sound propagation in the sea are site-specific, and marine species could be impacted differently depending on their sensitivity to underwater sound frequencies.

TOPIC	EU TAXONOMY	IFC PSs AND WBG EHS GUIDELINES
WATER (CONT'D)	as set out in **Commission Decision (EU) 2017/848** in relation to the relevant criteria and methodological standards for them (Commission Delegated Regulation (EU) 2021/2139, Annex I, activity 4.3 and Commission Delegated Regulation (EU) 2021/2139, Annex II, activity 4.3). > A **"good environmental status"** is defined as the environmental status of marine waters where these provide ecologically diverse and dynamic oceans and seas which are clean, healthy, and productive within their intrinsic conditions, and the use of the marine environment is at a level that is sustainable, thus safeguarding the potential for uses and activities by current and future generations (Directive 2008/56/EC, article 3(5)). > **Expected performance:** The introduction of energy, including underwater noise, must be at levels that do not adversely affect the marine environment: (a) **Anthropogenic impulsive sound sources:** The achievement of a good environmental status is expressed in terms of temporal extent (number of days per quarter – or per month if appropriate – with impulsive sound sources), spatial distribution (proportion of unit areas or extent in km2 of assessment area with impulsive sound sources per year), and the achievement of threshold values set at national level (taking into account regional or subregional specificities). Impulsive sound described as monopole energy source level in units of dB re 1 µPa2 s or zero to peak monopole source level in units of dB re 1µPa m, both over the frequency band 10 Hz to 10 kHz (Commission Decision (EU) 2017/848, Annex, Part I Descriptor 11). (b) **Anthropogenic continuous low-frequency sound:** The achievement of a good environmental status is expressed in terms of temporal extent (annual average, or other suitable temporal metric agreed at regional or subregional level, of continuous sound level per unit area) and spatial distribution (proportion or extent in km2 of assessment area with sound levels exceeding threshold values) (Commission Decision (EU) 2017/848, Annex, Part I Descriptor 11).	Assessments should be conducted to identify where and/or when underwater noise has the potential to impact marine life significantly and to identify appropriate mitigation measures (EHS ISG para. 18). > **Mitigation measures:** Employ a "soft start" procedure for pile-driving activities to help prevent exposure of marine life to damaging underwater noise and vibration levels and provide them with an opportunity to leave the area. The use of bubble curtains during pile driving is also recommended (EHS ISG para. 34). **WATER QUALITY:** > **Water quality impacts from onshore wind facility:** The installation of turbine foundations, underground cables, access roads, and other ancillary infrastructure may result in increased erosion, soil compaction, increased run-off, and sedimentation of surface waters. Measures to prevent and control these issues are discussed in the General EHS Guidelines and in the Toll Roads EHS Guideline (EHS ISG para. 42). > **Water quality impacts from offshore wind facility:** The installation of the turbine foundations and subsurface cables may disturb the marine seabed and may temporarily increase suspended sediments in the water column, thereby decreasing water quality and potentially adversely affecting marine species and commercial or recreational fisheries. Furthermore, the installation of the offshore structures may result in localized seabed erosion due to changes in water movements. Additional guidance to prevent and/or mitigate impacts resulting from offshore installation is provided in the Ports, Harbors, and Terminals EHS Guideline (EHS ISG para. 43).
CIRCULAR ECONOMY	The activity assesses availability of and, where feasible, uses equipment and components of high durability and recyclability and that are easy to dismantle and refurbish (Commission Delegated Regulation (EU) 2021/2139, Annex I, activity 4.3 and Commission Delegated Regulation (EU) 2021/2139, Annex II, activity 4.3).	The issues related to the transition to a circular economy are not specifically targeted in the EHS Industry Sector Guidelines, but comprehensive and detailed requirements on waste management are discussed in the General EHS Guidelines: > Facilities that generate and store wastes should practice the following (EHSG 1.6): (a) Establishing **waste management priorities** at the outset of activities based on an understanding of potential Environmental, Health, and Safety (EHS) risks and impacts and considering waste generation and its consequences.

TOPIC	EU TAXONOMY	IFC PSs AND WBG EHS GUIDELINES
CIRCULAR ECONOMY (CONT'D)		(b) Establishing a **waste management hierarchy** that considers prevention, reduction, reuse, recovery, recycling, removal and finally disposal of wastes. (c) **Avoiding or minimizing the generation waste materials**, as far as practicable. (d) Where waste generation cannot be avoided but has been minimized, **recovering and reusing waste.** > **Waste Management Planning:** Facilities that generate waste should characterize their waste according to composition, source, types of wastes produced, generation rates, or according to local regulatory requirements. Effective planning and implementation of waste management strategies should include (EHSG 1.6): (a) Review of new waste sources during planning, siting, and design activities, including during equipment modifications and process alterations, to identify expected waste generation, pollution prevention opportunities, and necessary treatment, storage, and disposal infrastructure (EHSG 1.6). (b) Collection of data and information about the process and waste streams in existing facilities, including characterization of waste streams by type, quantities, and potential use/disposition (EHSG 1.6). (c) Establishment of priorities based on a risk analysis that takes into account the potential EHS risks during the waste cycle and the availability of infrastructure to manage the waste in an environmentally sound manner (EHSG 1.6). (d) Definition of opportunities for source reduction, as well as reuse and recycling (EHSG 1.6). (e) Definition of procedures and operational controls for on-site storage (EHSG 1.6). (f) Definition of options/procedures/operational controls for treatment and final disposal (EHSG 1.6). > **Waste Prevention:** Processes should be designed and operated to prevent, or minimize, the quantities of wastes generated, and hazards associated with the wastes generated in accordance with the following strategy (EHSG 1.6): (a) Substituting raw materials or inputs with less hazardous or toxic materials, or with those where processing generates lower waste volumes (EHSG 1.6). (b) Applying manufacturing processes that convert materials efficiently, providing higher product output yields, including modification of design of the production process, operating conditions, and process controls (EHSG 1.6).

TOPIC	EU TAXONOMY	IFC PSs AND WBG EHS GUIDELINES
CIRCULAR ECONOMY (CONT'D)		(c) Instituting good housekeeping and operating practices, including inventory control to reduce the amount of waste resulting from materials that are out-of-date, off-specification, contaminated, damaged, or excess to plant needs (EHSG 1.6). (d) Instituting procurement measures that recognize opportunities to return usable materials such as containers and which prevents the over-ordering of materials (EHSG 1.6). (e) Minimizing hazardous waste generation by implementing stringent waste segregation to prevent the commingling of non-hazardous and hazardous waste to be managed (EHSG 1.6). > **Recycling and Reuse:** In addition to the implementation of waste prevention strategies, the total amount of waste may be significantly reduced through the implementation of recycling plans, which should consider the following elements (EHSG 1.6): (a) Evaluation of waste production processes and identification of potentially recyclable materials (EHSG 1.6). (b) Identification and recycling of products that can be reintroduced into the manufacturing process or industry activity at the site (EHSG 1.6). (c) Investigation of external markets for recycling by other industrial processing operations located in the neighborhood or region of the facility (e.g., waste exchange) (EHSG 1.6). (d) Establishing recycling objectives and formal tracking of waste generation and recycling rates (EHSG 1.6). (e) Providing training and incentives to employees in order to meet objectives (EHSG 1.6).
POLLUTION	No addition to the generic criteria (see ***Comparison tool 3: Technical comparative analysis on pollution***) (Commission Delegated Regulation (EU) 2021/2139, Annex I, activity 4.3)	In addition to the PSs and General EHS (see ***Comparison tool 3: Technical comparative analysis on pollution***): > Pollution risks may occur in case of offshore wind turbine located near ports, harbors, or known shipping lanes that may impact shipping safety through collision with vessels (EHS ISG para. 67). > Artificial lights of onshore wind turbines may result in light pollution, that could be reduced by timers, motion sensors, or downward-hooded lights.

TOPIC	EU TAXONOMY	IFC PSs AND WBG EHS GUIDELINES
BIODIVERSITY	In addition to the generic criteria (see ***Comparison tool 4: Technical comparative analysis on biodiversity***):	In addition to the PSs and General EHS (see ***Comparison tool 4: Technical comparative analysis on biodiversity***):

> **Biodiversity impacts and seabed integrity from offshore wind facility:** In case of offshore wind, the activity does not hamper the achievement of good environmental status as set out in **Directive 2008/56/EC** (Marine Strategy Framework Directive), requiring that the appropriate measures are taken to prevent or mitigate impacts on biodiversity and seabed integrity, as set out in the **Decision (EU) 2017/848** in relation to the relevant criteria and methodological standards for them (Commission Delegated Regulation (EU) 2021/2139, Annex I, activity 4.3 and Commission Delegated Regulation (EU) 2021/2139, Annex II, activity 4.3).

> A **"good environmental status"** is defined as the environmental status of marine waters where these provide ecologically diverse and dynamic oceans and seas which are clean, healthy and productive within their intrinsic conditions, and the use of the marine environment is at a level that is sustainable, thus safeguarding the potential for uses and activities by current and future generations (Directive 2008/56/EC article 3(5)).

> **Expected performance – Species with high biodiversity value:** The environmental status of marine water in terms of physical and chemical features, the habitat types, the biological features and the hydro-morphology is not adversely affected:

(a) **For species of birds, mammals, reptiles and non-commercially exploited species of fish and cephalopods, which are at risk from incidental by-catch in the region or subregion:** The achievement of a good environmental status is expressed in terms of the mortality rate per species from incidental by-catch. The rate must be below levels which threaten the species (set at national level), such that its long-term viability is supported (Commission Decision (EU) 2017/848, Annex, Part II, Descriptor 1).

(b) **For birds, mammals, reptiles, fish and cephalopods,** as listed in Table 1 of the **Decision (EU) 2017/848**: With reference to national thresholds set by Member States, a good environmental status is achieved when (i) the population abundance of the species (the natural variation in population size and the mortality rate) and the health of the population (represented by the demographic characteristics of the species) are not adversely affected due to anthropogenic pressures; (ii) the species distributional range and pattern are in line with prevailing physiographic, geographic and climatic conditions; and (iii) the habitat for the species has the necessary extent and condition to support the different stages in the life history of the species (Commission Decision (EU) 2017/848, Annex, Part II, Descriptor 1).

> **Biodiversity impacts from onshore and offshore wind facility:** Wind energy facilities have the potential for direct and indirect adverse impacts on both onshore and offshore biodiversity during construction, operation and maintenance, and decommissioning (EHS ISG para. 24). Due to the limited footprint of wind energy facilities, habitat conversation/degradation is more likely a consideration in high-value habitats, especially in forested habitats that are more likely to incur impacts related to habitat fragmentation (EHS ISG footnote 18). Biodiversity impact considerations should be taken into account in the site-selection phase, in the pre-construction assessment and in the development of mitigation measures.

> **Site selection:** Site selection is critical to avoiding and minimizing potential adverse impacts on biodiversity. Site selection should include the following:

(a) Consideration of the proximity of the proposed wind energy facility to sites of high biodiversity value in the region (including those located across national boundaries). Early screening can improve macro-level project site selection and the scoping of priorities for further assessment, thus reducing unnecessary biodiversity impacts and costs in the future. Sites of local, regional, and international importance may include: national and international protected areas (including marine protected areas), Important Bird Areas (IBA), Key Biodiversity Areas (KBAs), Alliance for Zero Extinction (AZE) sites, Ramsar sites (Wetlands of International Importance), known congregatory sites, and unique or threatened ecosystems. These sites may be known to be important migration routes, wetlands, or staging, foraging, or breeding areas; they may house bat hibernation areas and roosts; or they may contain important topographical features, including ridges, river valleys, shorelines, and riparian areas. Useful site selection tools can include: (i) strategic environmental assessments that compare the biodiversity and other environmental sensitivity of different wind resource areas; (ii) sensitivity (overlay) maps; (iii) digital resources that display areas of high biodiversity value; and (iv) zoning maps (EHS ISG para. 25).

(b) With respect to offshore facilities, site selection would include a review of areas of importance to the life history of marine life, notably fish, marine mammals, and sea turtles or other habitats, such as juvenile/nursery habitats, mussel/oyster beds, reefs, or sea grass and kelp beds. Siting would also include a review of productive fishing areas (EHS ISG para. 25).

(c) Consultation with relevant national and/or international conservation organizations also helps to inform site selection for both onshore and offshore facilities (EHS ISG para. 25).

TOPIC	EU TAXONOMY	IFC PSs AND WBG EHS GUIDELINES
BIODIVERSITY (CONT'D)	(c) **For pelagic habitats:** With reference to national thresholds set by Member States, a good environmental status is achieved when the condition of the habitat type, including its biotic and abiotic structure and its functions, is not adversely affected due to anthropogenic pressures. The extent of habitat adversely affected is expressed in km2 and as a proportion of the total extent of the habitat type (Commission Decision (EU) 2017/848, Annex, Part II, Descriptor 1). (d) For **benthic habitats:** A good environmental status is achieved when the extent of loss of the habitat type, resulting from anthropogenic pressures, and the extent of those adverse anthropogenic effects on the condition of the habitat type do not exceed a specified proportion of the natural extent of the habitat type in the assessment area. The maximum allowable extent of habitat loss is established by each Member State (Commission Decision (EU) 2017/848, Annex, Part II, Descriptor 1). > **Expected performance – Seabed integrity:** Sea-floor integrity must be at a level that seek to safeguard the structure and functions of the ecosystems and to avoid adverse affects on benthic ecosystems, in particular. (a) The achievement of a good environmental status is expressed in terms of either spatial extent and distribution of physical loss of the natural seabed (extent of the assessment area physically lost in km2) or spatial extent and distribution of physical disturbance pressures on the seabed (extent of the assessment area physically disturbed in km2) (Commission Decision (EU) 2017/848, Annex, Part I, Descriptor 6). (b) Relevant pressures are (i) physical loss (due to permanent change of seabed substrate or morphology and to extraction of seabed substrate); and (ii) physical disturbance to seabed (temporary or reversible) (Commission Decision (EU) 2017/848, Annex, Part I, Descriptor 6).	> **Pre-construction assessment:** Appropriate site-specific baseline biodiversity information may be needed to inform the Environmental & Social Impact Assessment (ESIA) (EHS ISG para. 26). Where robust in-country guidelines are not yet developed, international guidelines should be used and should always consider the need for surveys to be site-, species-, and season-specific. Generic risk assessments and mitigation plans are unlikely to be useful or easily transferable between species and locations (EHS ISG para. 27). (a) **Site-specific issues:** Surveys should consider habitats, geographical location, topography, and vicinity of the wind farm to sites of high biodiversity value (EHS ISG para. 27). (b) **Species-specific issues:** Surveys should be targeted to species of flora and fauna of high biodiversity value, those with a special international or national conservation status, endemic species, and species that are at elevated risk of impact from wind energy facilities. Impacts and potential mitigation options should be assessed on a species-by-species basis (EHS ISG para. 27). (c) **Season-specific issues:** Surveys should take into consideration certain periods during the year when the project site may have a greater or different ecological function or value (e.g., migration, breeding season, or winter seasons). Surveys should usually be conducted for at least one year when at-risk wildlife is identified. The need of longer survey should be determined on a project-by-project basis (EHS ISG para. 27). (d) On a project-by-project basis, surveys should be designed and implemented in order to: (i) minimize collision risks to birds and bats through an adequate micro-siting of the turbines and the turbine selection (EHS ISG para. 28); (ii) evaluate the use and effectiveness of radar and/or other remote-sensing technologies in pre-construction studies (EHS ISG para. 29); and implement a Collision Risk Modeling (CRM), especially in case of offshore wind farm or when wind energy facilities are located close to areas of high biodiversity value (EHS ISG para. 31). > **Mitigation measures:** Careful site selection and layout should reduce adverse impacts on biodiversity. Any significant residual adverse impacts will need appropriate mitigation (EHS ISG para. 33). (a) **Onshore wind facility:** Careful site selection and layout should reduce adverse impacts on biodiversity. Any significant residual adverse impacts will need appropriate mitigation, in accordance with site-, species-, and season-specific risks and impacts identified. Mitigation measures could include: (i) modify the number and size of turbines and their layout; (ii) when wind energy facility is located close to areas of high biodiversity value, active turbine management such as curtailment and shut-down on-demand procedures should be considered as part of the mitigation strategy, and factored into financial modeling and sensitivities at an early stage; (iii) avoid

TOPIC	EU TAXONOMY	IFC PSs AND WBG EHS GUIDELINES
BIODIVERSITY (CONT'D)		artificially creating features in the environment that could attract birds and bats to the wind energy facility; (iv) avoid attracting birds to predictable food sources; (v) consider adjustments of cut-in wind speeds to reduce potential bat collisions; (vi) eliminate "free-wheeling"; (vii) avoid artificial light sources, where possible; (viii) bury on-site transmission lines; (ix) install bird flight diverters on transmission lines and guy wires from meteorological masts to reduce bird collisions when located in or near areas of high biodiversity value and/or where birds of high biodiversity value are at risk of collision; (x) use "raptor safe" designs for power line poles to reduce electrocution risk; (xi) assess the current state of the art of bird and bat deterrence technology, and consider implementing any proven effective technologies where appropriate (EHS ISG para. 33). (b) **Offshore wind facility:** Biodiversity-related mitigation measures for offshore facilities, including noise-related mitigation: (i) plan construction activities to avoid sensitive times of the year (e.g., migration and breeding seasons) and to coincide with less productive times of year for fish; (ii) soft start" procedure for pile-driving activities to help prevent exposure of marine life to damaging underwater noise and vibration levels and provide them with an opportunity to leave the area; (iii) employ means fixing wind turbine generators to reduce conventional pile-driving disturbance; (iv) use different turbine foundations depending on the depth of the seafloor; (v) use acoustic deterrent devices; (vi) appoint observers to species of high biodiversity value; (vii) use of low environmentally damaging technologies (EHS ISG para. 33).
HUMAN RIGHTS	No addition to the generic criteria (see ***Comparison tool 5: Technical comparative analysis on human rights***).	The issues related to the respect of human rights are not specifically targeted in the EHS Industry Sector Guidelines for Wind Energy. Apply ***Comparison tool 5: Technical comparative analysis on human rights***.
WORKERS' RIGHTS	No addition to the generic criteria (see ***Comparison tool 6: Technical comparative analysis on workers' rights***)	In addition to the analysis in ***Comparison tool 6***, the Industry Sector EHS Guidelines for Wind Power detail Occupational Health and Safety hazards which are specific to the wind energy operations including the following: > **Working at Height and Protection from Falling Objects:** Working at height occurs frequently throughout all phases of operation at any wind energy facility and is especially relevant for maintenance purposes. The main focus when managing working at height should be the prevention of a fall. However, additional hazards that may also need to be considered include falling objects and adverse weather conditions (wind speed, extreme temperatures, humidity, and wetness). Managing working at height activities requires suitable planning and the allocation of sufficient resources (EHS ISG para. 47).

TOPIC	EU TAXONOMY	IFC PSs AND WBG EHS GUIDELINES
WORKERS' RIGHTS (CONT'D)		> **Working over Water:** Prevention and control measures associated with working over open water include the basic principles described for working at height in addition to a proper risk assessment to develop a safe system of work, the use of Personal Protective Equipment (PPE) and relevant training sessions to all working-over-water workers (EHS ISG para. 49). > **Working in Remote Locations:** Planning is vital in ensuring the safety, health, and welfare of employees when operating in remote locations, especially in offshore sites. Areas to consider when planning for remote working may include suitability of communication equipment, training and competence of personnel, and local emergency plan in place (EHS ISG para. 50).
OTHER	.	In addition to the E&S issues described above, the Industry Sector EHS Guidelines for Wind Power detail the following hazards which are specific to the wind energy operations: > **Environmental hazards:** (a) **Landscape, Seascape, and Visual impacts:** Depending on the location, a wind energy facility may have an impact on viewscapes, especially if visible from or located near residential areas or tourism sites. Visual impacts associated with wind energy projects typically concern the installed and operational turbines themselves (EHS ISG para. 11). Impacts may also arise in relation to operational wind facilities' interaction with the character of the surrounding landscape and/or seascape (EHS ISG para. 12). Avoidance and minimization measures to address landscape, seascape, and visual impacts are largely associated with the siting and layout of wind turbines and associated infrastructure, such as meteorological towers, onshore access tracks, and substations (EHS ISG para. 13). (b) **Shadow Flicker:** Shadow flicker occurs when the sun passes behind the wind turbine and casts a shadow. As the rotor blades rotate, shadows pass over the same point causing an effect termed shadow flicker. Shadow flicker may become a problem when potentially sensitive receptors (e.g., residential properties, workplaces, learning and/or health care spaces/facilities) are located nearby, or have a specific orientation to the wind energy facility (EHS ISG para. 35). Prevention and control measures to avoid significant shadow flicker impacts include the following: (i) site wind turbines appropriately to avoid shadow flicker being experienced or to meet limits placed on the duration of shadow flicker occurrence, as set out in the paragraph above; (ii) wind turbines can be programmed to shut down at times when shadow flicker limits are exceeded (EHS ISG para. 40).

TOPIC	EU TAXONOMY	IFC PSs AND WBG EHS GUIDELINES
OTHER (CONT'D)		**> Occupational Health & Safety hazards:** (a) **Lifting Operations:** Lifting operations are an integral component of the construction of any wind energy facility. During the construction phase, components are typically assembled and transported to the site where assembly will take place. This involves using large, complex pieces of lifting equipment to lift loads of varying dimensions and weights numerous times (EHS ISG para. 52). The management of lifting operations requires the use of competent personnel, thorough planning, effective communication, and a high level of supervision when carrying out a lift (EHS ISG para. 54). **> Community Health and Safety hazards:** (a) **Blade and Ice Throw:** A failure of the rotor blade can result in the "throwing" of a rotor blade, or part thereof, which may affect public safety. The overall risk of blade throw is extremely low (EHS ISG para. 58). Among other risk management strategies, turbines must be sited at an acceptable distance ("setback") between wind turbines and adjacent sensitive receptors to maintain public safety in the event of ice throw or blade failure (EHS ISG para. 59). (b) **Aviation:** (i) Aircraft Safety: if located near airports, military low-flying areas, or known flight paths, a wind energy facility (including anemometer mast) may impact aircraft safety directly through potential collision or alteration of flight paths (EHS ISG para. 63). Prevention and control measures to address these impacts include the following: consult with the relevant aviation authorities before installation, avoid siting wind energy facilities close to airports and within known low-flying areas or flight paths, and use anti-collision lighting and marking systems on towers and/or blades (EHS ISG para. 64); (ii) Aviation Radar: wind energy facilities located near radar may impact the operation of aviation radar by causing signal distortion, which may cause loss of signal, masking real targets and/or erroneous signals on the radar screen, creating flight safety issues (EHS ISG para. 65). These effects are caused by the physical structures of the tower/turbine and the rotating blades. Prevention and control measures to address these impacts include the following: consider wind energy facility design options, consider radar design alterations, and consultation should be undertaken with the relevant aviation authorities to determine prevention and control measures (EHS ISG para. 66). (c) **Marine Navigation and Safety:** As with aviation safety, if located near ports, harbors, or known shipping lanes, an offshore wind turbine may impact shipping safety through collision or alteration of vessel traffic. Additional vessel traffic during construction can increase these risks. This may result in damage to turbines and/or vessels, as well as pollution risk associated with collisions (EHS ISG para. 67). Prevention and control measures to address these impacts include the following: consult with marine regulatory traffic authorities before installation, avoid siting wind

TOPIC	EU TAXONOMY	IFC PSs AND WBG EHS GUIDELINES
OTHER (CONT'D)		energy facilities close to ports and within known shipping lanes, use anti-collision lighting and marking systems on turbines and all other hazards, establish safety zones around each turbine and construction vessel during the construction phase in order to minimize disruption to other sea users, and use reference buoys to aid navigation (EHS ISG para. 70). (d) **Electromagnetic Interference and Radiation:** Wind turbines could potentially cause electromagnetic interference with telecommunication systems (e.g., microwave, television, and radio). This interference could be caused by path obstruction, shadowing, reflection, scattering, or re-radiation. The nature of the potential impacts depends primarily on the location of the wind turbine relative to the transmitter and receiver, characteristics of the rotor blades, signal frequency receiver characteristics, and radio wave propagation characteristics in the local atmosphere (EHS ISG para. 71). Prevention and control measures include the following: modify placement of wind turbines to avoid direct physical interference of point-to-point communication systems, relocate/install a directional antenna, modify the existing aerial, site the turbine away from the line-of-sight of the broadcaster transmitter, and install an amplifier (EHS ISG para. 72 and para. 73). (e) **Public Access:** Safety issues may arise with public access to wind turbines (e.g., unauthorized climbing of the turbine) or to the wind energy facility substation. Any public rights of way located within and close to the wind energy facility site should be identified prior to construction in an effort to establish any measures that may be required to ensure the safety of their users (EHS ISG para. 74). Prevention and control measures to manage public access issues include: use gates on access roads, consider fencing the wind energy facility site or individual turbines, prohibit public access to the turbines, provide fencing of an appropriate standard around the substation with anti-climb paint and warning signs, prevent access to turbine tower ladders, post information boards about public safety hazards and emergency contact information (EHS ISG para. 75). (f) **Abnormal Load Transportation:** The main challenge with respect to wind energy facilities lies with the transportation of oversized or heavy wind turbine components (blades, turbine tower sections, nacelle, and transformers) and cranes to the site. The logistics, traffic, and transportation study should assess impacts on existing offsite roadways, bridges, crossings over culverts, overpasses/underpasses, turning radii, and utilities, as well as whether surface replacements, upgrades, or resettlements will be required. To reduce delays to other road users and the potential for other effects on local communities in the vicinity of the proposed route, schedule deliveries outside of peak hours, use only approved access routes, provide traffic management to stop other traffic where needed and provide police escorts where required (EHS ISG para. 76).

Annex 4:

Detailed comparison of technical requirements: Wind Power and Cement Manufacturing

Comparative tool 8: Detailed technical comparative analysis for the manufacture of cement

Note: This comparative analysis focuses on specific DNSH criteria for this sector in the EU Taxonomy, and sector-specific technical guidance provided in the WBG EHS Guidelines. The analysis must be read together with the comparative analyses done in this report between the EU Taxonomy's generic DNSH/MS criteria and the PSs and General EHS Guidelines.

TOPIC	EU TAXONOMY	IFC PSs AND WBG EHS GUIDELINES
	Technical screening criteria for determining the conditions under which Manufacture of cement qualifies as contributing substantially to climate change mitigation and for determining whether that economic activity causes no significant harm to any of the other environmental objectives (Commission Delegated Regulation (EU) 2021/2139, Annex I, activity 3.7) **Technical screening criteria for determining the conditions under which Manufacture of cement qualifies as contributing substantially to climate change adaptation and for determining whether that economic activity causes no significant harm to any of the other environmental objectives** (Commission Delegated Regulation (EU) 2021/2139, Annex II, activity 3.7)	**EHS Industry Sector Guidelines for Cement and Lime Manufacturing** (June 2022) **General EHS Guidelines** (1.6 Waste Management)
CLIMATE CHANGE MITIGATION	**GREENHOUSE GASES (GHGs):** Greenhouse gas emissions from the cement production processes are: > For grey cement clinker, lower than 0,722 tCO2e per ton of grey cement clinker, > For cement from grey clinker or alternative hydraulic binder, lower than 0,469 tCO2e per ton of cement or alternative binder manufactured (Commission Delegated Regulation (EU) 2021/2139, Annex II, activity 3.7	**GREENHOUSE GASES (GHGs):** > The GHG emissions associated with cement or lime manufacturing projects and associated ther mal power generation should be quantified annually in accordance with internationally recognized methodologies and good practices. (a) GHG emissions in the cement industry, in particular emissions of carbon dioxide (CO_2), are mainly associated with the calcination of limestone during clinker production, the fuel used to heat the kiln, and electricity use and transportation. While conventional fossil fuels remain the dominant fuel source in the leading global cement-producing countries, the substitution of fossil fuel use with waste fuels and biomass is increasing globally. (b) Limestone decarbonation and fuel-related CO_2 emissions in the lime-production process are similar to cement manufacturing. However, there is generally less electricity consumption and related CO_2 emissions from

TOPIC	EU TAXONOMY	IFC PSs AND WBG EHS GUIDELINES
CLIMATE CHANGE MITIGATION (CONT'D)		lime than cement manufacturing. Lime production is also dominated by conventional fossil fuel use among the leading producers. > As performance indicators of Good International Industry Practice (GIIP) for GHGs emission consumption (including GHG emissions from electrical energy consumed, either generated onsite and/or imported from the grid) the industrial benchmark of 550-700 kg CO_2 eq/ton cement can be considered (EHS ISG, Table 4). > Recommendations for the management of GHG emissions are provided in the General EHS Guidelines. Sector-specific techniques for minimizing CO_2 emissions in cement and lime manufacturing include the following: > **Cement manufacturing:** (a) Producing blended cements or new cementitious materials that have a lower content of clinker per unit of final product, resulting in a significant reduction in fuel consumption and subsequent CO_2 emissions (EHS ISG, para 20). (b) Substituting/co-firing conventional (coal/petcoke) fuels with alternative fuels that have a lower ratio of carbon content to calorific value, including switching to less carbon-intensive fuel (for example, natural gas, or, if not feasible, fuel oil); select waste fuels; biomass fuels such as rice, coffee husks, palm kernel shells, wood-waste, and so on; or RDFs (where such alternative fuels are available in sufficient quantities at economic cost) (EHS ISG, para 20). (c) Partially substituting limestone feedstock with non-carbonated sources of calcium oxide or quicklime (CaO) to reduce process CO_2 emissions and fuel CO_2 emissions related to calcination (EHS ISG, para 20). (d) Waste gases discharged from the kiln, the clinker cooler system, and the kiln pre-heater system all contain useful energy that can be used for raw material and fuel drying, and/or for power generation. Although cement manufacturing does not typically have significant low-temperature heating requirements, the heat that remains after the recovery of process heat can be recovered through heat recovery boilers for use in a standalone power generation cycle, or to supplement steam produced from fuel combustion for onsite captive power generation (EHS ISG, para 20).
CLIMATE CHANGE ADAPTATION	No addition to the generic criteria (see ***Comparison tool 1: Technical comparative analysis on climate change adaptation***) (Commission Delegated Regulation (EU) 2021/2139, Annex I, activity 3.7)	No addition to the PSs and General EHS (see ***Comparison tool 1: Technical comparative analysis on climate change adaptation***).

TOPIC	EU TAXONOMY	IFC PSs AND WBG EHS GUIDELINES
WATER	No addition to the generic criteria (see ***Comparison tool 2: Technical comparative analysis on water***) (Commission Delegated Regulation (EU) 2021/2139, Annex I, activity 3.7 and Commission Delegated Regulation (EU) 2021/2139, Annex II, activity 3.7)	In addition to the PSs and General EHS Guidelines (see ***Comparison tool 2: Technical comparative analysis on water***): **WASTEWATER:** > **Industrial Process Wastewater Treatment:** Wastewater is generated mainly from cooling utilities in different phases of the process. Techniques for treating industrial-process wastewater include: (i) flow and load equalization with pH adjustment; (ii) sedimentation for suspended solids reduction using settling basins or clarifiers; and (iii) multimedia filtration for reduction in non-settleable suspended solids (EHS ISG para. 43). > **Other Wastewater Streams and Water Consumption:** Stormwater flowing through petcoke, coal, and waste-material stockpiles may become contaminated. Stormwater should be prevented from contacting stockpiles by covering or enclosing the stockpiles and by installing runoff controls. Recommended pollution-prevention techniques for dust emissions from stockpiles of raw materials, clinker, coal, and waste may also help to minimize contamination of stormwater. If stormwater does contact stockpiles, soil and groundwater should be protected from potential contamination by paving or otherwise lining the base of the stockpiles, installing runoff controls around them, and collecting the stormwater in a lined basin to allow the PM to settle before separation, control, and recycling or discharge (EHS ISG para. 45). > Effluent guideline values for the cement and lime sector are indicative of GIIP (EHS ISG para. 70) and applicable for direct discharge of treated effluents to surface waters for general use (EHS ISG para. 71). The thresholds limits should be achieved, without dilution, at least 95% of the time the plant is operating, and any deviation should be justified through a proper environment assessment (EHS ISG para. 70). Additional requirements and thresholds are described in the General EHS Guidelines. The effluent guideline levels by pollutant category are as follows (EHS ISG Table 3): – pH: 6-9 S.U. – Total suspended solids: 50 mg/L – Oil and grease: 10 mg/L – Temperature increase: <3°C **WATER STRESS:** > Although cement manufacturing is not a water-intensive industry, it can contribute to water stress in seasonally arid locations. Recommendations to reduce water consumption, especially where it may be a limited natural resource, are provided in the General EHS Guidelines. In addition to housekeeping measures, water might be conserved by adopting dry rather than evaporative cooling systems, for example, in power generation cycle condensers (EHS ISG para. 46).

TOPIC	EU TAXONOMY	IFC PSs AND WBG EHS GUIDELINES
CIRCULAR ECONOMY	The issues related to the transition to the circular economy are not specifically targeted in the technical screening criteria for determining the conditions under which manufacture of cement qualifies as contributing substantially to climate change mitigation and as contributing substantially to climate change adaptation and for determining whether that economic activity causes no significant harm to any of the other environmental objective (Commission Delegated Regulation (EU) 2021/2139, Annex I, activity 3.7 and Commission Delegated Regulation (EU) 2021/2139, Annex II, activity 3.7).	> Sources of **solid waste in cement and lime manufacturing** include clinker production waste as well as off-specification clinker wastes. Another potential waste stream, that can be classified as hazardous waste, involves the kiln dust removed from the bypass flow and the stack – if it is not recycled in the process or in the final product. There is also some limited waste generated from plant maintenance – for example, used oil and scrap metal, and kiln refractory materials that may contain heavy metals. Other waste materials may include alkali, chloride, or fluoride contained in dust buildup from the kiln (EHS ISG para. 47). > Guidance on the management of hazardous/nonhazardous wastes is available in the General EHS Guidelines: > Facilities that generate and store wastes should practice the following: (a) Establishing **waste management priorities** at the outset of activities based on an understanding of potential Environmental, Health, and Safety (EHS) risks and impacts and considering waste generation and its consequences. (b) Establishing a **waste management hierarchy** that considers prevention, reduction, reuse, recovery, recycling, removal, and finally disposal of wastes. (c) **Avoiding or minimizing the generation waste materials**, as far as practicable. (d) Where waste generation cannot be avoided but has been minimized, **recovering and reusing waste**. > **Waste Management Planning:** Facilities that generate waste should characterize their waste according to composition, source, types of wastes produced, generation rates, or according to local regulatory requirements. Effective planning and implementation of waste management strategies should include (EHSG 1.6): (a) Review of new waste sources during planning, siting, and design activities, including during equipment modifications and process alterations, to identify expected waste generation, pollution prevention opportunities, and necessary treatment, storage, and disposal infrastructure. (b) Collection of data and information about the process and waste streams in existing facilities, including characterization of waste streams by type, quantities, and potential use/disposition. (c) Establishment of priorities based on a risk analysis that takes into account the potential EHS risks during the waste cycle and the availability of infrastructure to manage the waste in an environmentally sound manner. (d) Definition of opportunities for source reduction, as well as reuse and recycling.

TOPIC	EU TAXONOMY	IFC PSs AND WBG EHS GUIDELINES
CIRCULAR ECONOMY (CONT'D)		(e) Definition of procedures and operational controls for on-site storage. (f) Definition of options/procedures/operational controls for treatment and final disposal. > **Waste Prevention:** Processes should be designed and operated to prevent, or minimize, the quantities of wastes generated, and hazards associated with the wastes generated in accordance with the following strategy (EHSG 1.6): (a) Substituting raw materials or inputs with less hazardous or toxic materials, or with those where processing generates lower waste volumes. (b) Applying manufacturing process that convert materials efficiently, providing higher product output yields, including modification of design of the production process, operating conditions, and process controls. (c) Instituting good housekeeping and operating practices, including inventory control to reduce the amount of waste resulting from materials that are out-of-date, off-specification, contaminated, damaged, or excess to plant needs. (d) Instituting procurement measures that recognize opportunities to return usable materials such as containers and which prevents the over-ordering of materials. (e) Minimizing hazardous waste generation by implementing stringent waste segregation to prevent the commingling of non-hazardous and hazardous waste to be managed. > **Recycling and Reuse:** In addition to the implementation of waste prevention strategies, the total amount of waste may be significantly reduced through the implementation of recycling plans, which should consider the following elements (EHSG 1.6): (a) Evaluation of waste production processes and identification of potentially recyclable materials. (b) Identification and recycling of products that can be reintroduced into the manufacturing process or industry activity at the site. (c) Investigation of external markets for recycling by other industrial processing operations located in the neighborhood or region of the facility (e.g., waste exchange). (d) Establishing recycling objectives and formal tracking of waste generation and recycling rates. (e) Providing training and incentives to employees in order to meet objectives. > **Hazardous Waste Management:** Hazardous wastes should always be segregated from non-hazardous wastes. If generation of hazardous waste cannot be prevented through the implementation of the above general waste management practices, its management should focus on the prevention

TOPIC	EU TAXONOMY	IFC PSs AND WBG EHS GUIDELINES
CIRCULAR ECONOMY (CONT'D)		of harm to health, safety, and the environment, according to the following additional principles (EHSG 1.6): (a) Understanding potential impacts and risks associated with the management of any generated hazardous waste during its complete life cycle. (b) Ensuring that contractors handling, treating, and disposing of hazardous waste are reputable and legitimate enterprises, licensed by the relevant regulatory agencies and following good international industry practice for the waste being handled. (c) Ensuring compliance with applicable local and international regulations.
POLLUTION	In addition to the generic criteria (see ***Comparison tool 3: Technical comparative analysis on pollution***): > Emissions are within or lower than the **emission levels associated with the best available techniques (BAT-AEL) ranges** set out in the latest relevant best available techniques (BAT) conclusions, including the best available techniques (BAT) conclusions for the production of cement, lime, and magnesium oxide (Commission Delegated Regulation (EU) 2021/2139, Annex I, activity 3.7 and Commission Delegated Regulation (EU) 2021/2139, Annex II, activity 3.7). > No significant cross-media effects occur (Commission Delegated Regulation (EU) 2021/2139, Annex I, activity 3.7 and Commission Delegated Regulation (EU) 2021/2139, Annex II, activity 3.7). The "cross-media effects" are the environmental effects of alternative techniques that could be implemented for the Integrated Pollution Prevention and Control (IPPC) process. Indeed, choosing between alternative options might require a choice to be made between releasing different pollutants in the same environmental medium (e.g., different technology options might release different air pollutants) or releasing to different media (e.g., using water to scrub an air emission thereby producing wastewater or filtering a water discharge to produce solid waste) (**Best Available Techniques Reference Document (BREF) on Economics and Cross-Media Effects**, para. 2.1). > For manufacture of cement employing hazardous wastes as alternative fuels, measures are in place to support the safe handling of waste (Commission Delegated Regulation (EU) 2021/2139, Annex I, activity 3.7 and Commission Delegated Regulation (EU) 2021/2139, Annex II, activity 3.7) **BAT CONCLUSIONS** (**Commission Implementing Decision 2013/163/EU**) *GENERAL CRITERIA* > **Careful selection and control of substances entering the kiln** can reduce emissions. The chemical composition of the substances and the way they are	In addition to the PSs and General EHS (see ***Comparison tool 3: Technical comparative analysis on pollution***): > Point source air emissions in cement and lime manufacturing are generated by the operation of kiln systems, clinker coolers, and mills, and by the handling and storage of intermediate and final materials and products. Nonpoint source emissions of dust can also arise. *GENERAL CRITERIA* > **Combustion sources for power generation** are prevalent in this industry sector. The General EHS Guidelines provide guidance for the management of

TOPIC	EU TAXONOMY	IFC PSs AND WBG EHS GUIDELINES
POLLUTION (CONT'D)	fed in the kiln are factors that should be taken into account during the selection (Commission Implementing Decision 2013/163/EU, BAT 4). > **Monitoring and measurements of emissions** to be carried out and in accordance with relevant EN standards, or if EN standards are not available, ISO, national, or other international standards. Parameters to be monitored include process parameters (e.g., O2, T, pressure, flow rate); NH3 (continuous monitoring when SNCR is applied); NOx/SOx and CO (continuous); PCDD/F (periodic); HCl, HF and TOC (continuous or periodic based on emission sources and type of pollutants expected) (Commission Implementing Decision 2013/163/EU, BAT 5). > **Wastes used as fuels and/or raw materials** To guarantee the *characteristics of waste* used as fuel and/or raw material in a cement kiln and reduce emissions: (a) Analyze any waste for (i) constant quality, (ii) physical criteria, and (iii) chemical criteria. (b) Control the number of relevant parameters for any waste such as chlorine, sulphur, relevant metals (e.g., cadmium, mercury, thallium), total halogen content. (c) Apply quality assurance system for each waste load. To seek *appropriate treatment of waste* used as fuel and/or raw material: (a) Use appropriate points to feed the waste into the kiln in terms temperature and residence time. (b) Feed waste material containing organic components that can be volatilized before the calcining zone into the adequately high temperature zones of the kiln systems. (c) To operate in such a way that the gas resulting from the co-incineration of waste is raised in a controlled and homogenous fashion to a temperature of 850°C for 2 seconds. (d) To raise the temperature to 1,100°C if hazardous waste with a content of more than 1% of halogenated organic substances (chlorine) are co-incinerated. (e) To feed waste constantly and continuously. (f) Delay or stop waste co-incineration for operations such as start-up or shut-downs, when appropriate temperature and residence time cannot be reached. (Commission Implementing Decision 2013/163/EU, BAT 11, BAT 69). *POLLUTANTS* > **Total Organic Carbon emissions (TOC)** (a) To keep the emissions of TOC from the flue-gases of the kiln firing processes low, BAT is to avoid feeding raw materials with a high content	small combustion source emissions with a thermal heat input capacity of up to 50 megawatts thermal (MWth), including air emission standards for exhaust emissions. The EHS Guidelines for Thermal Power present guidance applicable to emissions sources greater than 50 MWth. > **Environmental monitoring programs** should be implemented to address all activities that have been identified as having a potentially significant impact on the environment, during normal operations and upset conditions (EHS ISG para. 73). Monitoring frequency should be sufficient to provide representative data for the parameter being monitored. Monitoring should be conducted by trained individual following monitoring and record keeping procedures and using calibrated and maintained equipment. Monitoring data should be analyzed and reviewed at regular intervals and compared with the operating standards (EHS ISG para. 74). Facilities using waste fuel or waste raw material in cement manufacturing should document the amounts and type of waste that are used either as fuel or as raw material and the quality standard such as the minimum calorific value, the max concentration levels of specific pollutants like PCB, chlorine, PAHs, mercury, and other heavy metals. (EHS ISG para. 75) > **Waste Fuels, Wastes, and Associated Air Emissions** (a) Adequate emissions monitoring should be conducted when wastes are fired in cement plants, either as an alternative fuel or for the purpose of waste destruction. (b) The recommended prevention and control techniques for these air pollutants include the following: (i) implementing monitoring and control of the volatile heavy metal content in the input materials and waste fuels though materials selection and the control measures for the Heavy Metals and manage nonvolatile metals according to the recommendations for Particulate Matters; (ii) implementing proper storage and handling practices for hazardous and nonhazardous waste to be used as waste fuel or raw material; (iii) directly injecting fuels that have volatile metals or high VOC concentrations into the main burner rather than via the secondary burners; (iv) avoiding fuels with high halogen content during secondary firing and during the startup and shutdown phases; (v) ensuring rapid cooling of kiln exhaust gases to below 200°C in long wet and long dry kilns without preheating (EHS ISG para. 40). *POLLUTANTS* > **Total Organic Carbon emissions (TOC)** (a) Under normal circumstances, emissions of TOCs are generally low but can be higher because of the organic volatile content in the raw material which

TOPIC	EU TAXONOMY	IFC PSs AND WBG EHS GUIDELINES
POLLUTION (CONT'D)	of volatile organic compounds (VOC) into the kiln system via the raw material feeding route (Commission Implementing Decision 2013/163/EU, BAT 24).	is used at the plant. Optimization of the process, such as smoothing and optimizing the plant's operation, the firing process and/or homogenization of the fuel and raw material feedings, can be applied for keeping TOC emissions low. If elevated concentrations of TOCs occur, adsorption on activated carbon can be considered. (b) Emissions guideline values for the cement and lime sector are indicative of GIIP (EHS ISG para. 70) and applicable to process emissions (EHS ISG para. 71). Additional requirements and thresholds are described in the General EHS Guidelines. The air emissions guideline levels for TOC are (EHS ISG Table 1): – Total organic carbon: 30 mg/Nm3
	> Metals (a) In order to minimize the emissions of metals from the flue-gases of the kiln firing processes, BAT is to use one or a combination of the following techniques: (i) selecting materials with a low content of relevant metals and limiting the content of relevant metals in materials, especially mercury; (ii) using a quality assurance system to guarantee the characteristics of the waste materials used; (iii) using effective dust removal techniques (Commission Implementing Decision 2013/163/EU, BAT 28). (b) BAT-associated emission levels (Commission Implementing Decision 2013/163/EU, BAT 28): – Hg: <0,05 mg/Nm3 – Σ (Cd, Tl): <0,05 mg/Nm3 – Σ (As, Sb, Pb, Cr, Co, Cu, Mn, Ni, V): <0,5 mg/Nm3	**> Heavy Metals** (a) Recommended techniques to limit the emissions of volatile heavy metals include the following: (i) implementing controls for the volatile heavy metal content in the input materials and waste fuels; (ii) dust shuttling or "bleeding" of mercury-enriched kiln dust, combined with sorbent injection, to limit the buildup of mercury levels within the kiln dust. (b) Emissions guideline values for the cement and lime sector are indicative of GIIP (EHS ISG para. 70) and applicable to process emissions (EHS ISG para. 71). Additional requirements and thresholds are described in the General EHS Guidelines. The air emissions guideline levels for Heavy Metals are (EHS ISG Table 1): – Mercury (Hg): 0,05 mg/Nm3 – Cadmium and thallium (Cd+Tl): 0,05 mg/Nm3 – Total metals: 0,5 mg/Nm3
	> Dust emissions *Diffuse dust emissions* (a) In order to minimise/prevent diffuse dust emissions from dusty operations, BAT is to use one or a combination of the following techniques: (i) use a simple and linear site layout of the installation; (ii) enclose/encapsulate dusty operations; (iii) cover conveyors and elevators; (iv) reduce air leakages and spillage points; (v) use automatic devices and control systems; (vi) support trouble-free operations; (vii) support proper and complete maintenance of the installation using mobile and stationary vacuum cleaning; (viii) ventilate and collect dust in fabric filters; (ix) use closed storage with an automatic handling system; (x) use flexible filling pipes for dispatch and loading processes, equipped with a dust extraction system for loading cement, which are positioned towards the loading floor of the lorry (Commission Implementing Decision 2013/163/EU, BAT 14).	**> Dust emissions** *Particulate Matter (PM)* (a) For PM emissions associated with the operation of kiln systems and clinker coolers, in addition to proper smoothing of kiln operations, are recommended: (i) capturing kiln and clinker cooler dusts using filters and recycling the recovered particulates into the kiln feed and into the clinker, respectively; (ii) using fabric filter systems as the preferred control option, with ESPs as an alternative option to collect and control fine particulate emissions (PM10 and PM2.5) in kiln exhaust gas and bypass gas dust, and exhaust air from coolers. (b) For PM emissions associated with the operation of mills, the recommended control technique is to capture mill dust using fabric filters and recycle it within the mill. (c) For PM emissions and fugitive dusts from the handling and storage of intermediate and final materials, handling and storage of solid fuels,

TOPIC	EU TAXONOMY	IFC PSs AND WBG EHS GUIDELINES
POLLUTION (CONT'D)	*Channeled dust emissions from dusty operations* (a) In order to reduce channeled dust emissions arising from dusty operations other than those from kiln firing, cooling and the main milling processes, BAT is to apply a maintenance management system which especially addresses the performance of filters applied to dusty operations, other than those from kiln firing, cooling and main milling processes. Taking this management system into account, BAT is to use dry flue-gas cleaning with a filter (Commission Implementing Decision 2013/163/EU, BAT 16). (b) The BAT-AEL for channeled dust emissions from dusty operations (other than those from kiln firing, cooling, and the main milling processes) is <10 mg/Nm3, as the average over the sampling period (spot measurement, for at least half an hour). It should be noted that for small sources (< 10000 Nm3/h) a priority approach, based on the maintenance management system, regarding the frequency for checking the performance of the filter, has to be taken into account (Commission Implementing Decision 2013/163/EU, BAT 16). *Dust emissions from kiln firing processes* (a) In order to reduce dust emissions from flue-gases of kiln firing processes, BAT is to use dry flue-gas cleaning with a filter: (i) electrostatic precipitators (ESPs); (ii) fabric filters; (iii) hybrid filters (Commission Implementing Decision 2013/163/EU, BAT 17). (b) The BAT-AEL for dust emissions from flue-gases of kiln firing processes is <10 -20 mg/Nm3, as the daily average value. When applying fabric filters or new or upgraded ESPs, the lower level is achieved (Commission Implementing Decision 2013/163/EU, BAT 17). *Dust emissions cooling and milling processes* (a) In order to reduce dust emissions from the flue-gases of cooling and milling processes, BAT is to use dry flue-gas cleaning with a filter: (i) electrostatic precipitators (ESPs); (ii) fabric filters; (iii) hybrid filters (Commission Implementing Decision 2013/163/EU, BAT 18). (b) The BAT-AEL for dust emissions from flue-gases of cooling and milling processes is <10 -20 mg/Nm3, as the daily average value or average over the sampling period (spot measurements for at least half an hour). When applying fabric filters or new or upgraded ESPs, the lower level is achieved (Commission Implementing Decision 2013/163/EU, BAT 18). **> Nitrogen Oxides emissions (NOx)** (a) In order to reduce the emissions of NOx from the flue-gases of kiln firing and/or preheating/precalcining processes, BAT is to use one or a combination of the following techniques: (i) flame cooling; low NOx burners; mid-kiln firing; addition of mineralizers to improve the burnability	transportation of materials, and bagging activities, the recommended pollution prevention and control techniques include the following: (i) using enclosed systems for handling material maintained under negative pressure by exhaust fans, with dedusting of ventilation air using fabric filters; (ii) using enclosed belt conveyors for transporting materials and emission controls at transfer points; (iii) designing sufficiently large covered storage for clinker and solid fuels to avoid the need for frequent double handling to and from outside stockpiles; (iv) implementing automatic bag-filling and handling systems to the extent possible; (v) reducing diffuse or fugitive dust from material and fuel stocks through storage practices; (vi) undertaking routine plant maintenance and good housekeeping to keep small air leaks and spills to a minimum and using mobile and stationary vacuum systems for routine operations and upsets; (vii) using simple, linear layouts for materials-handling operations to reduce the need for multiple transfer points, including paving and wetting and cleaning routines for road transport areas. (d) Emissions guideline values for the cement and lime sector are indicative of GIIP (EHS ISG para. 70) and applicable to process emissions (EHS ISG para. 71). Additional requirements and thresholds are described in the General EHS Guidelines. The air emissions guideline levels for PM emissions are (EHS ISG Table 1): – Particulate matter (new kiln system with dry flue gas cleaning using an ESP, fabric, and/or hybrid filter): 25 mg/Nm3 *Other dust emissions* (a) The air emissions guideline levels for dust emissions (other point sources including clinker cooling, cement grinding) are (EHS ISG Table 1): – Other dust emissions: 25 mg/Nm3 **> Nitrogen Oxides emissions (NOx)** (a) The following prevention and control techniques, in addition to the smoothing of kiln operations, are recommended: (i) using low NOx burners; (ii) using Low NOx calciner; using fuels with reduced N content; (iii) developing a staged combustion process, as applicable, in PHP and PH

TOPIC	EU TAXONOMY	IFC PSs AND WBG EHS GUIDELINES
POLLUTION (CONT'D)	of the raw meal (mineralized clinker); process optimization; (ii) staged combustion (conventional or waste fuels); (iii) selective non-catalytic reduction (SNCR); (iv) selective catalytic reduction (SCR) (Commission Implementing Decision 2013/163/EU, BAT 19). (b) BAT-associated emission levels (Commission Implementing Decision 2013/163/EU, BAT 19): – Preheater kilns: < 200 – 450 mg/Nm3 – Lepol and long rotary kilns: 400 – 800 mg/Nm3	kilns; (vi) optimizing primary and secondary air flow to support appropriate combustion/burning conditions with tight control of excess oxygen, thereby minimizing NOx formation and emissions; (vii) employing flame cooling by adding water to the fuel or directly to the flame to reduce the temperature and increase the concentration of hydroxyl radicals (EHS ISG para. 29). In addition to the primary control techniques for NOx reduction, secondary techniques such as selective noncatalytic reduction (SNCR) can also be used as necessary (EHS ISG para. 30). Because of the lower limestone burning temperatures, NOx emissions are generally lower in lime manufacturing than in cement manufacturing. In addition to the smoothing of kiln operating conditions, the control of NOx emissions can be achieved using optimized low-NOx burners (EHS ISG para. 31). (b) Emissions guideline values for the cement and lime sector are indicative of GIIP (EHS ISG para. 70) and applicable to process emissions (EHS ISG para. 71). Additional requirements and thresholds are described in the General EHS Guidelines. The air emissions guideline levels for NOx are (EHS ISG Table 1): – NOx: 600 non-degraded airshed (NDA) mg/Nm3
	> Sulfur Dioxide emissions (SOx) (a) In order to reduce the emissions of SOx from the flue-gases of kiln firing and/or preheating/precalcining processes, BAT is to use one of the following techniques: (i) absorbent addition; (ii) wet scrubber (Commission Implementing Decision 2013/163/EU, BAT 21). (b) BAT-associated emission levels: (Commission Implementing Decision 2013/163/EU, BAT 21): – SOx expressed as SO2: < 50 – 400 mg/Nm3	**> Sulfur Dioxide emissions (SOx)** (a) Recommended pollution control techniques for reduction of SO2 include the following: (i) selecting raw materials and fuels with low volatile sulfur content; (ii) optimizing the clinker burning process using techniques that include smoothing kiln operations, ensuring uniform distribution of the hot meal in the kiln riser, and preventing reducing conditions in the burning process; (iii) using a vertical raw mill, with gases passing through the mill to recover energy and to reduce the sulfur content in the gas; (iv) injecting absorbents such as calcium hydroxide or hydrated lime; (v) using wet or dry scrubbers. (b) Emissions guideline values for the cement and lime sector are indicative of GIIP (EHS ISG para. 70) and applicable to process emissions (EHS ISG para. 71). Additional requirements and thresholds are described in the General EHS Guidelines. The air emissions guideline levels for SO2 are (EHS ISG Table 1): – SO2: 400 mg/Nm3
	> Hydrogen Chloride (HCl) and Hydrogen Fluoride (HF) (a) In order to prevent/reduce the emissions of HCl from flue-gases of the kiln firing process, BAT is to use one or a combination of the following primary techniques: (i) raw materials and fuel with a low chlorine content and/or (ii) limiting chloride content for any waste that is to be used as raw material and/or fuel (Commission Implementing Decision 2013/163/EU, BAT 25).	**> Hydrogen Chloride (HCl) and Hydrogen Fluoride (HF)** (a) No specific recommended pollution control techniques for reduction of HCl and HF in the flue-gases are provided. (b) Emissions guidelines values for the cement are indicative of GIIP (EHS ISG para. 70) and applicable to process emissions (EHS ISG para. 71). Additional requirements and thresholds are described in the General EHS Guidelines.

TOPIC	EU TAXONOMY	IFC PSs AND WBG EHS GUIDELINES
POLLUTION (CONT'D)	(b) BAT-associated emission levels: (Commission Implementing Decision 2013/163/EU, BAT 25): – HCl: < 10 mg/Nm3 (c) In order to prevent/reduce the emissions of HF from flue-gases of the kiln firing process, BAT is to use one or a combination of the following primary techniques: (i) raw materials and fuel with a low fluorine content and/or (ii) limiting fluorine content for any waste that is to be used as raw material and/or fuel (Commission Implementing Decision 2013/163/EU, BAT 26). (d) BAT-associated emission levels: (Commission Implementing Decision 2013/163/EU, BAT 26): – HCl: < 1 mg/Nm3	The air emissions guideline levels for HCl and HF are as follows (EHS ISG Table 1): – HCl:10 mg/Nm3 – HF:1 mg/Nm3
	> Dioxins-Furans emissions (PCDD/F) (a) In order to prevent/reduce the emissions of PCDD/F from flue-gases of the kiln firing process, BAT is to use one or a combination of the following techniques: (i) carefully selecting and controlling of kiln inputs (raw materials and fuel), (ii) limiting/avoiding the use of waste which contain chlorinated organic compounds, (iii) avoiding fuels with high content of halogens in secondary firing, (iv) quick cooling of kiln flue-gases to lower than 200°C and minimizing residence time of flue gases in zone where T range between 300 and 450°C, (v) stop co-incinerating waste for operations such as start-ups and shutdowns (Commission Implementing Decision 2013/163/EU, BAT 27). (b) BAT-associated emission levels: (Commission Implementing Decision 2013/163/EU, BAT 27): – PCDD/F: < 0.05 – 0.1 ng TEQ/Nm3	**> Dioxins-Furans emissions (PCDD/F)** No specific recommended pollution prevention and control techniques for the reduction of PCDD/F emissions are provided by the guidelines though the following are mentioned as part of control measures to be implemented when wastes are fired in cement plants, either as an alternative fuel or for the purpose of waste destruction: (a) avoiding fuels with high content of halogens in secondary firing, (iv) quick cooling of kiln flue-gases to lower than 200°C (EHS ISG para. 40). (b) Emissions guideline values for the cement are indicative of GIIP (EHS ISG para. 70) and applicable to process emissions (EHS ISG para. 71). Additional requirements and thresholds are described in the General EHS Guidelines. The air emissions guideline levels for PCDD/F are (EHS ISG Table 1): – PCDD/F: 0.1 ng TEQ/Nm3
BIODIVERSITY	No addition to the generic criteria (see ***Comparison tool 4: Technical comparative analysis on biodiversity***) (Commission Delegated Regulation (EU) 2021/2139, Annex I, activity 3.7 and Annex II, activity 3.7).	In addition to the PSs and General EHS (see ***Comparison tool 4: Technical comparative analysis on biodiversity***): **>** Limestone's particular chemistry, hydrology, geology, and associated microclimates can lead to the evolution of unique biodiversity and associated ecosystem services. It is important to assess and, where necessary, mitigate the potential impacts of a project on limestone-restricted biodiversity, including associated species, their habitats, and the ecosystem services they provide (EHS ISG footnote 2).

TOPIC	EU TAXONOMY	IFC PSs AND WBG EHS GUIDELINES
HUMAN RIGHTS	No addition to the generic criteria (see ***Comparison tool 5: Technical comparative analysis on human rights***).	The issues related to the respect of human rights are not specifically targeted in the EHS Industry Sector Guidelines. Generic criteria (see ***Comparison tool 5: Technical comparative analysis on human rights***) apply.
WORKERS' RIGHTS	No addition to the generic criteria (see ***Comparison tool 6: Technical comparative analysis on workers' rights***).	In addition to the General EHS Guidelines requirement on Occupational Health and Safety, the following guidance is provided to address the most significant hazards during the operational phase of cement and lime manufacturing projects: > **Hazardous Dusts:** Exposure to fine particulates is associated with work in most of the dust-generating stages of cement and lime manufacturing, but most notably during quarry operation. In particular, exposure to the respirable fraction of active (crystalline) silica dust (SiO_2), and to asbestos when it is present in the raw materials and products (for example, cement dust), is a relevant potential hazard in the cement and lime manufacturing sector, and specific health and safety standards must be followed to control these hazards, raw material handling, and clinker or cement grinding. Methods to prevent and control exposure to dust include the following: (i) controlling dust through good housekeeping and maintenance; (ii) using air-conditioned closed cabins; (iii) using closed conveyors/elevators with emission controls at transfer points for fugitive dust emissions; (iv) using dust extraction and recycling systems to remove dust from work areas, especially in grinding mills; (v) using air ventilation (suction) in cement-bagging areas; (vi) measuring workers' exposure to hazardous dusts; (vii) using personal protective equipment to address residual exposure; (viii) implementing a respiratory protection program. > **Explosions and Fires:** Fires and explosions can result from many different processes and the fuels used in the cement industry (EHS ISG para. 52). For recommended practices, refer to the General EHS Guidelines and appropriate GIIP OHS standards (EHS ISG para. 54). > **Hazardous Energy Sources:** energy sources – including electrical, mechanical, hydraulic, pneumatic, chemical, thermal, or other sources – in machines and equipment can be hazardous to workers. During the servicing and maintenance of machines and equipment, the unexpected startup or release of stored energy can result in serious injury or even death to workers. For recommended practices, refer to the General EHS Guidelines and appropriate GIIP OHS standards (EHS ISG para. 55). > **Electric Hazards:** Cement manufacturing is energy-intensive, and cement plants have heavy-duty electrical equipment installed for control, distribution, and utilization of electric power. Very often, cement plants are equipped with dedicated power-generation units. The operation and maintenance of

TOPIC	EU TAXONOMY	IFC PSs AND WBG EHS GUIDELINES
WORKERS' RIGHTS (CONT'D)		electric circuits and powered machines, tools, and equipment are a common source of electrical hazards such as electrocutions, arc-flash, burns, fires, and explosions. For recommended practices, refer to the General EHS Guidelines and appropriate GIIP OHS standards (EHS ISG para. 56). > **Confined Spaces:** In a cement plant operation, workers regularly have to enter confined spaces such as furnaces, baghouses, bins, crushers, chutes, silos, and grinding mills as part of their work. Confined-space fatalities and serious injuries still occur, often due to a lack of proper hazard identification, control, and/or training. For recommended practices, refer to the General EHS Guidelines and appropriate GIIP OHS standards (EHS ISG para. 57). > **Complex and Critical Lifting:** Cement plants have large heavy equipment that often needs to be replaced or removed for maintenance. This may require lifting operations that involve complex and critical situations. For recommended practices, refer to the General EHS Guidelines and appropriate GIIP OHS standards (EHS ISG para. 58). > **Welding, Cutting, and Brazing (Hot Works):** Cement plants rely heavily on metal structures and equipment that wear out over time and need continual maintenance. For the maintenance division in a cement plant, welding and cutting are everyday activities that are often associated with other hazards such as working at heights or entering confined spaces. For recommended practices, refer to the General EHS Guidelines and appropriate GIIP standards (EHS ISG para. 59). > **Heat:** Heat hazards in a cement plant can occur in two different forms: direct contact with heated surfaces and materials, or heat stress and heat strain from prolonged work under high temperatures (EHS ISG para. 60). For recommended practices, refer to the General EHS Guidelines and appropriate GIIP standards (EHS ISG para. 61). > **Noise and Vibrations:** The main sources of noise and vibrations in cement and lime plants are crushing/grinding operations, mills, chutes, and hoppers, mobile equipment, exhaust fans, and blowers. Control of noise emissions may include the use of silencers for fans, room enclosures for mill operators, noise barriers, sound deflectors, insulation, and, if noise cannot be reduced to acceptable levels, personal hearing protection (EHS ISG para. 63). The General EHS Guidelines provide levels for recommended noise abatement measures and ambient and workplace noise levels (EHS ISG para. 62). > **Physical Hazards:** Injuries during cement and lime manufacturing operations are typically related to slips, trips, and falls; contact with falling or moving objects; and lifting and overexertion. Other injuries may occur from traffic accidents in relation to contact with, or capture in, moving machinery. Activities related to the maintenance of equipment are significant sources of exposure to physical hazards. The General EHS Guidelines describe ways to manage these hazards (EHS ISG para. 64).

TOPIC	EU TAXONOMY	IFC PSs AND WBG EHS GUIDELINES
OTHER		In addition to the environmental and social issues described above, the ISG detail the following hazards which are specific to the manufacture of cement and lime: > **Environmental hazards:** Noise and Vibrations: Many cement- and lime-manufacturing phases are sources of high levels of noise. They include extracting raw materials (as discussed in the EHS Guidelines for Construction Materials Extraction), grinding and storage, handling and transporting raw materials or intermediate and final products, and operating exhaust fans. Control of noise emissions may include the use of silencers for fans, room enclosures for mill operators, noise barriers, sound deflectors, and insulation. The General EHS Guidelines provide levels for recommended noise abatement measures and ambient and workplace noise levels (EHS ISG para. 42). > **Community Health and Safety hazards:** Community health and safety impacts during the construction, operation, and decommissioning of cement- and lime-manufacturing facilities are common to those of most industrial facilities and are discussed in the General EHS Guidelines. Among those health and safety impacts and risks to the community, it is important to highlight (i) traffic and the increased number of vehicles stationed close to the plant waiting to be loaded, and (ii) the influx of workers, especially during project construction.

Annex 5

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