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Analysis of compatibility and exemplary proposals for amendments for Climate change mitigation and Sustainable Use and Protection of Water

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Kurzbeschreibung: Die DNSH-Kriterien der EU-Taxonomie und die PAI-Indikatoren der EU-Offenlegungsverordnung

Dieser Bericht zeigt Verbesserungsvorschläge für die Nutzbarkeit der Do No Significant Harm (DNSH)-Kriterien der EU-Taxonomie und der Principle Adverse Impact (PAI)-Indikatoren der Sustainable Finance Disclosure Regulation (SFDR). Dabei werden die Umweltziele Eindämmung des Klimawandels (climate change mitigation, CCM) und nachhaltige Nutzung und Schutz des Wassers (Water) für relevante Sektoren wie Energie, verarbeitendes Gewerbe, Bau- und Immobilienwirtschaft, Verkehr, Wasserversorgung untersucht. Die Analyse ist in zwei Phasen unterteilt:
Erstens erfolgen eine übergreifende Analyse und ein Vergleich der grundsätzlichen Arten von DNSH-Kriterien und PAI-Indikatoren. In dessen Rahmen werden die prinzipiellen Herausforderungen der Kriterien und Möglichkeiten für die Verbesserung der Kompatibilität ermittelt.
Zweitens folgt eine detaillierte Betrachtung ausgewählter Indikatoren. Hier werden Verbesserungen für einzelne DNSH-Kriterien und PAI-Indikatoren vorgeschlagen, um ihre Anwendbarkeit, Präzision und Operationalisierbarkeit zu verbessern. Der Bericht zielt auf die Unterstützung von Kohärenz und Nutzbarkeit der DNSH-Kriterien und PAI-Indikatoren.

Abstract: The DNSH criteria of the EU Taxonomy and the PAI indicators of the SFDR

This report presents suggestions for enhancing the usability of the Do No Significant Harm (DNSH) criteria in the EU Taxonomy and the Principle Adverse Impact (PAI) indicators under the Sustainable Finance Disclosure Regulation (SFDR). The environmental objectives of climate change mitigation (CCM) and sustainable use and protection of water are considered relevant, as are the energy, manufacturing, construction and real estate, transport, and water supply sectors. The analysis is divided into two phases:

First, an overarching analysis and comparison of the basic types of DNSH criteria and PAI indicators is carried out. As part of this, the fundamental challenges of the requirements and opportunities for improving compatibility are identified.

Secondly, a detailed examination of selected indicators follows. Here, improvements are proposed for individual DNSH criteria and PAI indicators to enhance their applicability, precision, and operationalizability. The report aims to support the coherence and usability of DNSH criteria and PAI indicators.

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List of abbreviations

Abbreviation	Explanation
API	Active pharmaceutical ingredients
CBI	Climate Bonds Initiative
CCM	Climate change mitigation
CSRD	Corporate Sustainability Reporting Directive
DNSH	Do No Significant Harm
EEA	European Environmental Agency
ESMA	European Securities and Markets Authority
ESRS	European Sustainability Reporting Standards
GRI	Global Reporting Initiative
ISO	International Organization for Standardization
PAI	Principle Adverse Impact
RED	Renewable Energy Directive
SFDR	Sustainable Finance Disclosure Regulation
UBA	German Environmental Agency
Water	Sustainable use and protection of water
WFD	EU Water Framework Directive

Zusammenfassung

Die EU-Taxonomie und die Verordnung über nachhaltigkeitsbezogene Offenlegungspflichten im Finanzdienstleistungssektor (SFDR) sind zentrale Bausteine europäischen Sustainable Finance Strategie. Dieser Bericht, der Teil des Projekts „EU Sustainable Finance Framework: Ensuring Consistency and Ambition“ des Umweltbundesamtes (UBA) ist, enthält Empfehlungen zur Verbesserung der Nutzbarkeit und Kohärenz der Do-No-Significant-Harm-Kriterien (DNSH) der EU-Taxonomie und der Principle-Adverse-Impact-Indikatoren (PAI) der SFDR, um sicherzustellen, dass sie die europäischen Umweltziele und eine transformative Finanzierung wirksam unterstützen.

Unsere Analyse konzentriert sich auf die Umweltziele Eindämmung des Klimawandels (CCM) und nachhaltige Nutzung und Schutz des Wassers (Water) sowie auf die folgenden Wirtschaftssektoren der EU-Taxonomie: Energie, verarbeitendes Gewerbe, Bau- und Immobilienwirtschaft, Verkehr, Wasserversorgung. Die Schlussfolgerungen, die aus der Optimierung einzelner Indikatoren gezogen werden, sind jedoch grundsätzlich auf andere Umweltziele und Wirtschaftssektoren übertragbar.

Wir haben die Analysen in zwei aufeinanderfolgende Phasen unterteilt:

In der ersten Phase haben wir einen übergreifenden Blick auf die DNSH-Kriterien und PAI-Indikatoren geworfen, um grundlegende Erkenntnisse zu gewinnen und Leitlinien für die Priorisierung der Optimierung einzelner Indikatoren abzuleiten. In der zweiten Phase wurden ausgewählte Indikatoren aus den oben genannten Bereichen analysiert und Optimierungsvorschläge dafür abgeleitet.

Erste Phase: Übergreifende Analyse von DNSH und PAI

Wir haben mit der Analyse allgemeiner Unterschiede der PAI-Indikatoren und DNSH-Kriterien begonnen. Als Ausgangspunkt für diese Analyse erstellten wir eine Tabelle, in der alle relevanten DNSH-Kriterien und die entsprechenden PAI-Indikatoren verglichen wurden.

Die wichtigsten dabei gefundenen Unterschiede sind die Berichtsebenen (DNSH: wirtschaftliche Aktivitäten; PAI: Unternehmensebene) und die Branchenreferenzen (DNSH: aktivitäts- und damit branchenspezifisch; PAI: branchenunabhängig), die eine Herausforderung für die Kompatibilität darstellen. Es gibt jedoch auch ähnliche Ansätze in den PAI-Indikatoren und DNSH-Kriterien, wie z. B. den Fokus auf Output-Variablen oder die Verwendung von Prozessbeschreibungen, wobei die Ähnlichkeit der Ansätze sehr stark vom Einzelfall abhängt.

Diese Analysen führten zu einem Überblick darüber, wo die grundlegenden Herausforderungen in Bezug auf die Kompatibilität liegen. Die Ergebnisse flossen in die Methodik der zweiten Phase unserer Analyse ein, welche sich auf einzelne Indikatoren konzentrierte.

In einem weiteren Schritt der ersten Phase unserer Evaluierung haben wir die für unsere Themenbereiche relevanten DNSH-Kriterien in einer übergreifenden Analyse untersucht, zunächst ohne Bezug zu den PAI-Indikatoren. Da aufgrund der großen Anzahl von DNSH-Kriterien im Rahmen des Projekts nicht für alle Indikatoren Einzelbewertungen durchgeführt werden konnten, haben wir uns in diesem Schritt darauf konzentriert, wie häufig verschiedene Merkmale der DNSH-Kriterien in Bezug auf Anwendbarkeit und Ambitionsniveau auftreten.

Die Ergebnisse dieser Analyse zeigen beispielsweise, dass das Verhältnis der Zahl der ergebnis- und prozessorientierten DNSH-Kriterien für das Umweltziel CCM nahezu ausgeglichen ist, während für das Umweltziel Wasser eine deutliche Mehrzahl der DNSH-Kriterien prozessorientiert statt ergebnisorientiert ist. Im Falle prozessorientierter Kriterien ist es zumeist schwieriger, das Ambitionsniveau zu bewerten, da Schwellenwerte fehlen.

Diese Ergebnisse konnten verwendet werden, um eine Vorauswahl der DNSH-Kriterien zu treffen, die in der zweiten Phase unserer Evaluierung für detailliertere Verbesserungsempfehlungen in Betracht gezogen werden sollen.

Zweite Phase: Analyse beispielhafter DNSH-Kriterien und PAI-Indikatoren

In der zweiten Phase wurden ausgewählte DNSH-Kriterien und PAI-Indikatoren genauer untersucht. Im Mittelpunkt der Bewertung stand die Anwendbarkeit der Indikatoren als Entscheidungshilfe für die ökologische Transformation und deren Finanzierung. Sowohl für die DNSH-Kriterien als auch für die PAI-Indikatoren zeigen sich Verbesserungspotenziale, einschließlich Optionen für eine bessere Kompatibilität der beiden Instrumente. Die Vorschläge wurden erläutert und in „DNSH-Verbesserungsschemata“ im Anhang des Berichts festgehalten.

Im Ergebnis lässt sich festhalten, dass die Klimaschutz-PAI-Indikatoren als geeignetes Steuerungstool eingestuft werden können, während der Wasser-PAI-Indikator aufgrund der fehlenden Grenzwerte Raum für Verbesserungen bietet. Es gibt hierbei Überschneidungen mit den Verbesserungsmöglichkeiten der DNSH-Kriterien für das Umweltziel Wasser. Aus diesem Grund haben wir die Verbesserungsmöglichkeiten für beide Indikatoren im Kontext des entsprechenden "Annex B” der EU-Taxonomie diskutiert (siehe unten).
Eine allgemeine Schlussfolgerung der zweiten Phase unserer Analyse ist, dass einige Umweltaspekte in Bezug auf die Verwendbarkeit der PAI-Indikatoren für die Steuerung der Entscheidungsfindung auf einer sektorspezifischen Grundlage betrachtet werden müssten, um eine gute Steuerbarkeit zu gewährleisten. Derzeit zielen die PAIs im Allgemeinen jedoch auf eine sektorunabhängige Beschreibung ab.

Verbesserungen in Bezug auf Annex B und den entsprechenden PAI-Indikator

Der Annex B der technischen Bewertungskriterien der EU-Taxonomie ist für das Umweltziel Wasser von zentraler Bedeutung, da sich viele Wasser-DNSH-Kriterien darauf beziehen, entweder als alleinige DNSH-Kriterien oder in Kombination mit zusätzlichen Kriterien. Annex B verweist letztlich über mehrere verschiedene Referenzebenen auf Anhang X der EU-Wasserrahmenrichtlinie (WRRL) (2000/60/EG), in dem „prioritäre Stoffe“ aufgeführt werden. Auf denselben Anhang bezieht sich auch der PAI-Indikator für Wasser. Die geltende Liste der prioritären Stoffe ist jedoch in einem Änderungsrechtsakt festgelegt, auf den in dieser Kette von Querverweisen nicht ausdrücklich Bezug genommen wird, sodass dieser in der Praxis schwer zu finden ist. In diesem Bericht empfehlen wir daher, klare Leitlinien zu erstellen, wo die einschlägigen Richtlinien und Informationen zu finden sind.

In einem abschließenden Kapitel wird zusammengeführt, welche der Erkenntnisse dieses Berichts auch für die Weiterentwicklung anderer PAI-Indikatoren und für andere Umweltziele und -sektoren der EU-Taxonomie, die in diesem Bericht nicht behandelt werden, genutzt werden können.

Summary

This report, produced under the German Environmental Agency (UBA) project "EU Sustainable Finance Framework: Ensuring Consistency and Ambition," explores how to enhance to the usability and coherence of Do No Significant Harm (DNSH) criteria of the EU taxonomy and Principle Adverse Impact (PAI) indicators of the Sustainable Finance Disclosure Regulation. By focusing on their alignment, the report offers concrete recommendations to better support environmental objectives of the EU and enable transformative financing at a critical moment when revisions for the SFDR and Taxonomy are being discussed.

The report focuses on two environmental objectives: climate change mitigation (CCM) and the sustainable use and protection of water (Water). It examines five economic sectors listed in the EU Taxonomy: Energy, Manufacturing, Construction and Real Estate Activities, Transport, and Water Supply Management. Although the analysis is limited to these sectors and objectives the methodological approach and proposed improvements can be transferred to other areas of the sustainable finance framework.

We divided the analyses into two subsequent phases: In the first phase, we took an overarching look at the DNSH and PAI indicators to identify fundamental insights and derive guidance for prioritizing the optimization of individual indicators. In the second phase, an analysis and derivation of optimization proposals were conducted for the selected indicators from the fields above.

First phase: Overarching analysis of DNSH and PAI

We began with an analysis of general differences in the approaches of PAI and DNSH. As a starting point for this analysis, we created a table comparing all relevant DNSH criteria and corresponding PAI.

The most significant differences identified are the reporting levels (DNSH: economic activities; PAI: company level) and the industry references (DNSH: activity- and therefore industry-specific; PAI: industry-independent), which pose a compatibility challenge. However, there are also similar approaches in the PAI indicators and DNSH criteria, such as the focus on output variables or the use of process descriptions, although the similarity of these approaches varies considerably depending on the specific case.

These analyses provided an overview of the fundamental challenges in terms of compatibility. The results were incorporated into the methodology of phase two of our analysis, which focuses on individual indicators.

In a further step during the first phase of our evaluation, we conducted an overarching analysis of the DNSH criteria relevant to our topic areas, initially without reference to the PAI indicators. Since individual assessments could not be carried out for all indicators due to the large number of DNSH criteria within the project, we focused in this step on how frequently different features of the DNSH criteria occur with regard to applicability and level of ambition.

The results of this analysis show, for example, that the ratio of the number of outcome-oriented and process-oriented DNSH criteria for the environmental objective CCM is almost balanced, while for the environmental objective water, a clear majority of the DNSH criteria are process-oriented rather than outcome-oriented. In the case of process-oriented criteria, it is generally more difficult to assess the level of ambition because thresholds are lacking.

These results could therefore be used to pre-select the DNSH criteria to be considered for recommendations of improvements in more detail in the second phase of our evaluation.

Second phase: Analysis of exemplary DNSH criteria and PAI indicators

In the second phase, selected DNSH criteria and PAI indicators were examined in more detail. The assessment focused on the applicability of the indicators as decision-making tools for the ecological transformation and its financing. Potential improvements were identified for both the DNSH criteria and the PAI indicators, including options for better compatibility between the two instruments. The proposals were explained and documented in "DNSH Improvement Schemes" in the annex to the report.

The conclusion is that the climate protection PAI indicators can be considered a suitable steering tool, while the water PAI indicator, particularly due to the lack of defined thresholds, offers room for improvement. There is some overlap with the potential improvements to the DNSH criteria for the environmental objective of water. For this reason, we discussed the potential improvements for both indicators in the context of the corresponding "Annex B" of the EU Taxonomy (see below).

A general conclusion from the second phase of our analysis is that some environmental aspects regarding the usability of PAI indicators for guiding decision-making would need to be considered on a sector-specific basis to ensure effective management. Currently, however, PAIs generally aim for a sector-independent description.

Improvements concerning Appendix B and the corresponding PAI indicator

Annex B of the EU Taxonomy's Technical Assessment Criteria is of central importance for the environmental objective of water, as many water DNSH criteria refer to it, either as standalone DNSH criteria or in combination with additional criteria. Annex B ultimately refers, via several different levels of reference, to Annex X of the EU Water Framework Directive (WFD) (2000/60/EC), which lists "priority substances." The PAI indicator for water also refers to this same annex. However, the current list of priority substances is laid down in an amending act that is not explicitly referenced in this chain of cross-references, making it difficult to locate in practice. Therefore, in this report, we recommend the development of clear guidance on where to find the relevant directives and information.

A concluding chapter summarizes which of the findings of this report can also be used for the further development of other PAI indicators and for other environmental objectives and sectors of the EU taxonomy that are not covered in this report.

1 Introduction

The EU taxonomy and the Sustainable Finance Disclosure Regulation (SFDR) play pivotal roles in the EU sustainable finance framework. The EU taxonomy offers an objective and standardized basis for identifying environmentally sustainable economic activities. Nevertheless, there are areas of improvement in the EU taxonomy. This report focuses on two areas to improve consistency and coherence within the EU sustainable finance framework:

1. enhancing the applicability of the Do No Significant Harm (DNSH) criteria
2. ensuring coherence between the DNSH criteria and the Principle Adverse Impact (PAI) indicators of the SFDR, while maintaining a high level of ambition.

As a report from the EU Platform on Sustainable Finance, dated October 2022,[1] and a paper from the Sustainable Finance Advisory Council of the German Federal Government, dated March 2023,[2] show there is room to improve the applicability of some of the DNSH criteria of the EU taxonomy. Usability issues of some of the DNSH criteria, such as lack of precision and operationalizability, were identified in both reports. This report builds upon this assessment and provides recommendations for improvement.

A key consideration is that the applicability of the DNSH criteria affects not only corporate taxonomy disclosures but also their integration into financial market participants' SFDR related reporting and investment decisions. As such, improving DNSH usability has a direct impact on the effectiveness of the sustainable finance framework as a whole particularly in facilitating the shift of capital towards sustainable investments.

Including the PAI indicators in this analysis is essential for strengthening the consistency and coherence between the EU taxonomy and the SFDR. Both the PAI indicators of the SFDR and the DNSH criteria of the EU taxonomy are intended to provide information on possible negative sustainability impacts. There are, however, different methodological approaches and content-related criteria in the two regulatory areas of the EU taxonomy and the SFDR.

After the description of the methodology used (Chapter 2), the analysis proceeds in two phases. In Phase one, we took an overarching look at the DNSH criteria and PAI indicators to identify fundamental insights and derive guidance for prioritizing the optimization of individual indicators. In phase two, the report presents detailed optimization proposals were conducted for the selected indicators related to the environmental objectives of climate change mitigation (CCM) and the sustainable use and protection of water (Water).

[1] Platform on Sustainable Finance (2022)
[2] Sustainable Finance-Beirat der Bundesregierung (2023)

2 Methodology

To address the research objectives outlined above, we developed a structured methodological approach that was iteratively refined as new insights emerged over the course of the project. Our method was iteratively refined in response to new research findings throughout the project.

In the first phase, we conducted a systematic overview with initial assessments of PAI indicators and corresponding DNSH criteria for selected environmental objectives and sectors. The following methodological steps were taken:

a) Selection of environmental objectives and economic sectors for

b) Evaluation about applicability and consistency

The results of this evaluation formed the foundation for the second phase of the project, which focused on concrete improvements. This phase included:

c) Prioritization of DNSH criteria and PAI indicators to make exemplary proposals for amendments.

d) Making proposals for alignments, harmonizations and improvements for exemplary DNSH criteria and PAI indicators.

All data used in this analysis is based on publicly available sources, such as the delegated acts of the EU taxonomy or the legal text of the SFDR.

2.1 Selection of environmental objectives and economic sectors

DNSH criteria and PAI indicators were analyzed about two environmental objectives. The environmental objectives of CCM and Water were selected based on their environmental relevance and their importance for the political process. The environmental objective of CCM is relevant due to the early introduction of the delegated act that provided climate criteria for the EU Taxonomy ("Climate Delegated Act").[3] The relevance of water is highlighted by research results from the European Environmental Agency (EEA). In a recent publication on the state of Europe's water bodies, the EEA states that "In 2021, only 37% of Europe's surface water bodies achieved a good or high ecological status. 29% achieved a good chemical status."[4] In our report, we highlight that most activities align with the generic DNSH criteria for water and marine resources (Appendix B), where we identified areas for improvement.

There are six mandatory PAI indicators and five additional ones for the environmental objective of CCM,[5] and one mandatory PAI indicator and four additional ones for the environmental objective of water. This was also a decisive point in considering the DNSH criteria for the environmental objectives of CCM and water.

In addition to selecting environmental objectives, **we selected economic sectors of the EU Taxonomy for our analysis:**

- Energy

[3] European Commission: Commission delegated regulation (EU) 2021/21 of 4 June 2012

[4] European Environment Agency (EEA) (2024), p. 5.

[5]Not all mandatory CCM-PAI indicators need to be considered separately for reconciliation with DNSH criteria: For example, for PAI 1, the total Scope 1, Scope 2, and 3 emissions are calculated, which then provide the basis for the PAIs 2 and 3, in which the emissions are set in relation, e.g., to the enterprise value. The ratios to enterprise value (PAI 2) and to enterprise sales or revenues (PAI 3) cannot be directly linked to DNSH criteria.

- Manufacturing
- Construction and real estate activities
- Transport
- Water supply management

Except for water supply management, activity criteria in all sectors were analyzed for both environmental objectives.

2.2 Applicability and consistency

For the first phase of our analysis, we have created a systematic analysis table. In this table, we systematically recorded and compared PAI indicators and DNSH criteria. We have structured our analysis in line with the economic activities in the EU taxonomy, as far as they are relevant to the analyzed environmental objectives. Since several economic activities often share the same DNSH criteria, we were able examine DNSH criteria across multiple economic activities by addressing specific DNSH criteria for DNSH. We provide insight into our analysis in Table 1.

After the initial focus on PAI indicators, we further analyzed the applicability of the corresponding DNSH criteria and added it to the table. To do this, we took a closer look at the structure of the DNSH criteria. Here, we have analyzed whether the DNSH criteria refer to other regulations in order to check their international applicability, whether the DNSH criteria are outcome, process governance, or process technically oriented, or whether they refer to Appendix B. Furthermore, we classified information about the level of ambition for each DNSH criterion (this is described in more detail below). This will help assess and evaluate the usability of the DNSH criteria (see Chapter 2.2.2) and, based on this evaluation, make suggestions for improving the DNSH criteria (see Chapter 4.3).

At the end of the table, the issues of comparability between DNSH criteria and PAI indicators are addressed, and suggestions for adjustments to DNSH criteria are included. We combined the DNSH criteria and the PAI indicators from the first columns and checked their fit. We also included initial ideas for improvement, which we exemplarily discuss in more detail in Chapter 4.3.

This structure was used to analyze the challenges in the compatibility between DNSH criteria and PAI indicators, to identify challenges in the applicability of DNSH criteria, and to provide a basis for proposing, such as prioritizing which DNSH criteria required changes. Its content is based on publicly available data, such as the delegated acts of the EU taxonomy or the legal text of the SFDR.

Table 1: Structure of the analysis

PAI indicator	DNSH criteria description	Evaluation of DNSH criteria	Communalities PAI indicator - DNSH criteria	Priorities for Adjustments
Metric and Definition	Description of the DNSH criteria, in which delegated act it can be found and whether reference is made to further regulations.	Data availability, Kind of DNSH criteria Indicator, Usability Classification and Level of ambition	Similarities and differences between PAI indicators and DNSH criteria	Priority concerning adjustments of DNSH criteria and Proposals for adjustments of DNSH criteria

Source: Own illustration

In the Table we show the coherence between PAI indicators and DNSH criteria. This includes examining:

- If both standards address the same environmental aspects
- If both standards are set on the same reporting level (e.g., activity or company level) and follow the same approach[6]
- If companies can use the same data for both standards

For both standards, our primary focus lies on their usability as steering tools for informing and steering investment decisions.

2.2.1 PAI indicators

We examined mandatory and additional PAI environmental indicators to have a broader spectrum of topics for comparison with the DNSH criteria.

Usability of PAI indicators

As a first step, in addition to the question of coherence with DNSH criteria, we examined the usability of PAI indicators as tools for informing and steering investment decisions. We specifically addressed whether they are sufficiently specific and directionally sound to provide decision-makers with guidance on how to reduce environmental impacts.

This aspect of the PAI indicators is of relevance also due to the results of a targeted consultation on the implementation of the SFDR by the European Commission (see textbox below): It would be beneficial to be able to use PAI indicators to assess better the sustainability and especially the transition of companies and their activities.

Targeted consultation on the implementation of the Sustainable Finance Disclosures Regulation (SFDR)

The European Commission has conducted a targeted consultation concerning a potential review of the SFDR in 2023[7]. The clear majority of the responses to the consultation reaffirmed the need to establish an EU categorization system for financial products. The targeted consultation presented two options for such a categorization[8]:

- "a system that splits categories in a different way than according to existing concepts used in Articles 8 and 9 (approach 1),
- or a categorization system converting Articles 8 and 9 into formal product categories and clarifying and adding criteria to underpin the existing concepts of the SFDR (approach 2)".

Additional proposals have been put forward, most prominently by the ESMA.[9]

A common perspective on the SFDR from these proposals is that it is de facto used as a labeling scheme, although it was initially not designed to be used as such. Concerning the potential establishment of a categorization system for financial products, a large majority of respondents to the targeted consultation of the European Commission disagreed with the idea that simply

[6] See chapter 3.1

[7] For more information, check https://finance.ec.europa.eu/regulation-and-supervision/consultations/finance-2023-sfdr-implementation_en

[8] European Commission (2023a), p. 12.

[9] European Securities and Markets Authority (ESMA) (2024b).

disclosing sustainability information is enough.[10] That is why public proposals for amendments of the SFDR, e.g. from ESMA or Finance Watch, include clearer categories for investment products that are also intended to distinguish financial products for financing the transition more clearly from financing for companies and activities that are already sustainable.[11]

Based on the responses to the targeted consultation, the European Commission highlights that "[t]here is overwhelming support (72% of respondents) for creating a specific category for products with a transition focus, aiming to improve the sustainability profile of the assets they invest in."[12]

Based on the results from the targeted consultation, it would be very helpful to be able to use PAI indicators to better assess the sustainability, especially the transition, of companies and their activities. A key reason for this is that the taxonomy does not yet contain descriptions of the alignment for all business activities, as it focuses on sustainable activities. Hence, it would be advantageous to have clear guidelines coming from the PAI indicators.

At the time of writing, no official proposal to amend the SFDR has been published by the European Commission. However, it remains important to evaluate to what extent the PAI indicators can be considered to strengthen usability as tools for informing and steering investment decisions, as well as coherence between the two instruments.

We used the following criteria for the evaluation of the usability of the PAI indicators as tools for informing and for steering investment decisions (see Chapter 4.2):

1. Is there a **certainty of direction** about the environmental targets to be achieved?
2. Can the indicator be used for **comparison with other financial products between companies** in the same sector or between similar economic activities?
3. Can **causes for changes be identified** to make a statement regarding the effects of the transition?
   a. when applying the indicators to companies outside the financial sector about, for example, efficiency increases or substitution of energy sources
   b. in the application of the financial sector about reallocation of financing between different companies or sectors or the transition within the financed companies or sectors

2.2.2 DNSH criteria

The usability of the DNSH criteria aims to provide an overview of the need to improve individual DNSH criteria, regardless of their compatibility with the PAI indicators. Also, the Platform on Sustainable Finance (2022) has published usability classifications of DNSH criteria.[13]

We took the Platform's usability clarification as a starting point and expanded their approach for our analysis. We have used the following categories to assess the usability of the DNSH criteria:

- Outcome, process technical or process governance-orientation ("kind of DNSH criteria")
- Level of ambition
- Data availability

[10] European Commission (2023a).

[11] see for example European Securities and Markets Authority (ESMA) (2024b), p. 11; Finance Watch (2024), p. 3.

[12] European Commission (2023a), p. 3.

[13] Platform on Sustainable Finance (2022), p. 51.

Outcome, process technical or process governance orientation

In our analysis, we differentiated the DNSH criteria according to whether they are outcome, process technical, or process governance-oriented.[14] Since a large number of DNSH criteria refer to Appendix B, especially for the environmental objective of water, and since Appendix B is primarily process-oriented, we have added Appendix B as an additional category to provide a clear overview of how many different DNSH criteria are process governance-oriented.

DNSH criteria are outcome-oriented when they require a clear outcome. This can have a concrete threshold value that needs to be reached by the activity. However, outcome-oriented DNSH criteria without a threshold value are also possible. Examples of this, using DNSH criteria for CCM, are presented in Table 2. Technical process-oriented DNSH criteria provide specifications for a technical process, while governance process-oriented DNSH criteria describe, for example, general company governance guidelines.

Table 2: Example of allocation according to kind of DNSH criteria

Activity	DNSH criteria	Kind of DNSH criteria
4.5. Electricity generation from hydropower	The direct GHG emissions of the activity are lower than 270 g CO 2 e/kW.	Outcome with threshold
4.14. Transmission and distribution networks for renewable and low-carbon gases	The repurposing does not increase gas transmission and distribution capacity. The repurposing does not extend the lifespan of the networks beyond their pre-retrofit projected lifespan, unless the network is dedicated to hydrogen or other low-carbon gases.	Outcome without threshold
3.3. Demolition and wrecking of buildings and other structures	The building owner or contractor ensures that during renovation, refurbishing or demolition activities implying the removal of foam panels, or laminated boards installed in cavities or built up structures, that contain foams with Fluorinated greenhouse gases, saturated and unsaturated Hydrofluorocarbons, and Ozone Depleting Substances, as defined in Regulation (EU) No 517/2014 and in Regulation (EU) No 1005/2009, the emissions are avoided to the extent possible by handling the foams or the gases contained therein in a way that ensures the reuse or destruction of the foam panels or the gases contained in the foams. The recovery of the gases contained in the foams is carried out by appropriately trained personnel. Where recovery of these foams is not technically feasible, the operator draws up documentation providing evidence for the infeasibility of the recovery in the specific case. Such documentation is retained for five years and is made available, on demand.	Process technical
3.4. Maintenance of roads and motorways	A traffic congestion mitigation plan to be implemented during the maintenance works is presented.	Process governance

[14] The Platform on Sustainable Finance has made a similar differentiation in classes A and B. However, the Platform on Sustainable Finance focused on the differentiation between outcome (Vlass A) and process measures (Class B) (Platform on Sustainable Finance 2022).

Source: Own illustration, based on Commission delegated Regulation (EU) 2021/2139[15]

The EU taxonomy includes activity-specific DNSH criteria as well as generic DNSH criteria as part of the Appendix to the Climate Delegated Act. The degree to which activities reference generic DNSH criteria varies between sectors and environmental objectives. In the case of water, it is noticeable that a large number of activities refer to Appendix B for DNSH criteria to water and marine resources. The generic criteria read as follows:

Appendix B concerning: Generic criteria for DNSH for sustainable use and protection of water and marine resources

„Environmental degradation risks related to preserving water quality and avoiding water stress are identified and addressed with the aim of achieving good water status and good ecological potential as defined in Article 2, points (22) and (23), of Regulation (EU) 2020/852, in accordance with Directive 2000/60/EC and a water use and protection management plan, developed thereunder for the potentially affected water body or bodies, in consultation with relevant stakeholders.

Where an Environmental Impact Assessment is carried out in accordance with Directive 2011/92/EU and includes an assessment of the impact on water in accordance with Directive 2000/60/EC, no additional assessment of impact on water is required, provided the risks identified have been addressed." [16]

The query for the Kind of DNSH criteria in the analysis Table is a checkbox that looks as follows:

Table 3: Kind of DNSH criteria

Outcome	Process governance	Process technical	Appendix B
x			

Source: Own illustration

Level of ambition and data availability

For each DNSH criteria, we assessed both the level of ambition and data availability. The level of ambition was determined by whether criteria were clearly defined and applied comprehensively to the economic activity. Outcome-oriented DNSH criteria with quantitative thresholds are generally considered potentially the most ambitious, though such thresholds do not guarantee high ambition. In contrast, governance and technical process-oriented criteria often provide only general procedural guidance. Regarding data availability, we examined whether the required disclosures are already covered by existing standards such as the Global Reporting Initiative (GRI), ISO standards, or the ESRS. The Platform on Sustainable Finance similarly distinguished criteria by data accessibility, noting that international standards typically offer better data availability than EU-only legislation.[17]

[15] European Commission (2021), p. 347.

[16] Source: Appendix B from Commission Delegated Regulation (EU) 2021/2139 (European Commission 2021).

[17] Platform on Sustainable Finance (2022), p. 57.

3 Results of the first phase of our evaluation

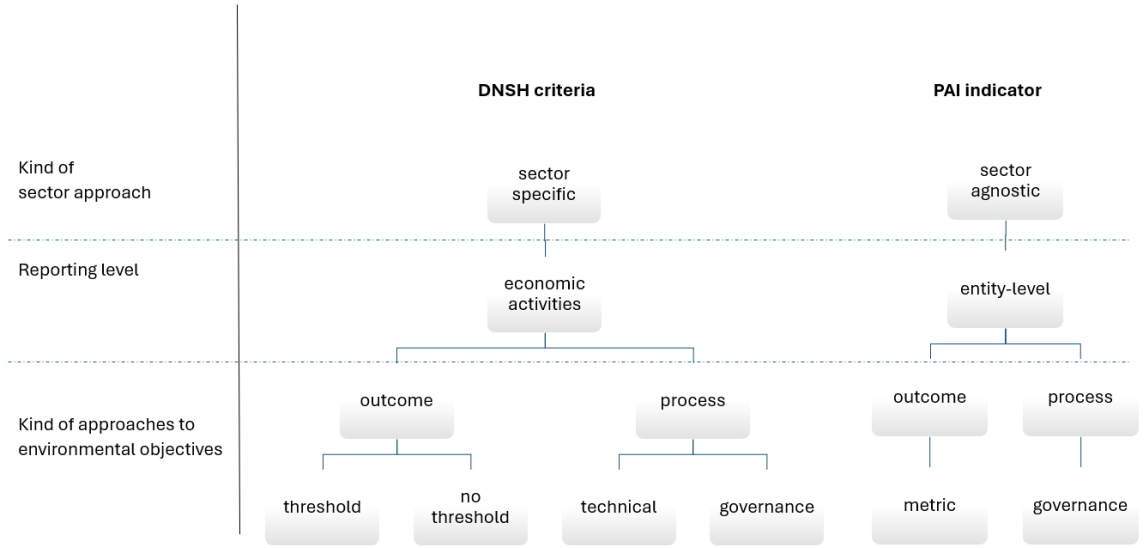
In the first phase of our evaluation, we focus on the overarching results between the two instruments. First, we analyzed the basic approaches of the DNSH criteria and PAI indicators to describe the environmental objectives (Chapter 3.1). Then, we examined the distribution of different kinds of DNSH criteria (Chapter 3.2). The latter also serves to prioritize which DSNH criteria are considered in more detail in Chapter 4 regarding potential improvement.

3.1 General possible kinds of differences between DNSH criteria and PAI indicators

As emphasized in the introduction, the compatibility and coherence of the design of the DNSH principle within the taxonomy and the SFDR are crucial for the usability and efficiency of both instruments as key components of the EU sustainable finance framework.

To systematically identify compatibility issues, we examined the DNSH criteria and the PAI indicators, compared their general approaches, and identified the differences between them. To shed light on the compatibility of the approaches, we have compared both standards. The differences between the DNSH criteria and the PAI indicators relate to three dimensions: reporting levels, kind of sector approach, and potentially different general approaches to environmental objectives (see Figure 1).

Figure 1: Comparison of approach structure: PAI indicators[18] and DNSH criteria



Source: Own illustration

Different reporting levels, sector agnostic vs. sector specific

A key difference between the PAI indicators and the DNSH criteria is that they focus on different reporting levels. While the PAI indicators apply at the entity level, the DNSH criteria examine economic activities. Moreover, **t**he environmental PAI indicators are (mostly) sector-agnostic,

[18] We have only examined the PAIs for the environmental objectives water and climate change mitigation, which means that we can only confirm the logic for the PAIs for these environmental objectives.

whereas DNSH criteria are mostly defined for each economic activity, although there are also cross-activity DNSH criteria.

Potentially different general approaches to the same environmental objective

Additional differences come from their respective focus on environmental objectives. To ensure compatibility between the two standards, the respective approaches to achieving the environmental objectives should be similar. Compatibility is made more difficult, for example, if a DNSH criterion has a process governance approach, but the thematically corresponding PAI indicator pursues an outcome approach.

Table 4: Example: Different general approaches

PAI indicator	DNSH criteria	Compatibility
Water: Tons of emissions to water generated by investee companies per million EUR invested, ...	Relevant techniques are deployed to protect water and marine resources, as outlined in the best available techniques (BAT) conclusions for waste treatment.	Due to the different approaches (PAI: outcome; DNSH: governance technical), there is currently low compatibility.

Source: Own illustration, based on Commission delegated Regulation (EU) 2020/852[19] and SFDR.[20]

In our analysis, we found that both DNSH criteria and PAI indicators can be categorized according to their orientation towards outcome or process. The PAI indicators, however, currently only show governance process orientation, whereas DNSH criteria also show technical process orientation criteria. Looking at outcome-oriented criteria, not all DNSH criteria include quantitative thresholds. PAI indicators, on the other hand, do not include quantitative threshold values. Hence, PAI indicators have a similar approach structure to the DNSH criteria but have fewer variants than the DNSH criteria.

It is important to emphasize that we only examined the PAI indicators for the environmental objectives of greenhouse gas emissions and water. We randomly selected additional PAI indicators to cross-check our analysis and found no contradicting results. Nonetheless, to generalize the results, we would need to review all PAI indicators.

Same general approach but a different focus or metric on concrete outcomes or processes

Even if DNSH criteria and PAI indicators use the same approach for an environmental objective, further compatibility issues may arise in the specification if non-identical outcomes or processes are used. This applies to climate protection, for example, when Scope 1 emissions are used as the basis on one side (DNSH), and Scope 1 to 3 are considered on the other side (PAI).

Table 5: Example: Same approach, different metrics

PAI indicator	DNSH criteria	Compatibility
1. GHG emissions: GHG differentiated by Scope 1, 2, 3, and total GHG emissions	The direct GHG emissions of the activity are lower than 270 g CO_{2e}/kWh	Due to the different scopes, there is limited compatibility.

Source: Own illustration, based on Commission delegated Regulation (EU) 2021/2139 [21] and SFDR.[22]

[19] European Commission (2020), p. 24.

[20] European Commission (2022), p. 43.

[21] European Commission (2021), p. 252.

[22] European Commission (2022), p. 42.

3.2 Distribution of the DNSH criteria according to the categories of outcome-oriented, process-oriented, and Appendix B

To gain a first impression of the potential room for improvement of the DNSH criteria, we evaluated the distribution of the DNSH criteria according to the categories of outcome-oriented, process-oriented, and Appendix B (see Chapter 2.2.2). We created separate tables for both environmental objectives (see Tables 6 and 7), listing the number of DNSH criteria each sector contains. We further differentiated this by categorizing the DNSH criteria as outcome-oriented, process-oriented, or both, as outlined in Appendix B. This evaluation provides a quick overview of the environmental objectives and sectors where adjustments may be beneficial.

Table 6: Overview: Kind of DNSH criteria: Climate change mitigation

Sector	Number of DNSH criteria	Kind of DNSH criteria			
		Outcome	Process[23]	Both	Appendix B
Accommodation activities	1	1			
Construction and real estate	12	11		1	
Disaster risk management	1		1		
Energy	16	12	4		
Environmental protection and restoration activities	2		2		
Financial and insurance activities	2		2		
Forestry	4		4		
Information and communication	1		1		
Manufacturing	15	14	1		
Professional, scientific, and technical activities	2		2		
Services	6	2	1	3	
Transport	11	1	5	5	
Water supply, sewerage, waste management and remediation activities	11		9	2	

[23] government or/and technical processes

Sector	Number of DNSH criteria	Kind of DNSH criteria			
		Outcome	Process[23]	Both	Appendix B
total	**84**	**41**	**32**	**11**	**0**

Source: Own illustration

As the data show, the environmental objective of Water is often referred to in Appendix B across all sectors. Of the 159 DNSH criteria from all sectors, 149, or 94%, refer to Appendix B.

Table 7: Overview: Kind of DNSH criteria: Sustainable use and protection of water and marine resources

Sector	Number of DNSH criteria	Kind of DNSH criteria			
		Outcome	Process[24]	Both	Appendix B
Accommodation activities	1				1
Construction and real estate	9	6			9
Energy	38		6		32
Environmental protection and restoration activities	3				3
Forestry	8				8
Information and communication	3				3
Manufacturing	38		2		38
Professional, scientific and technical activities	4		3		1
Services	6				6
Transport	22		1		21
Water supply, sewerage, waste management and remediation activities	27		7		27
total	**159**	**6**	**19**	**0**	**149**

Source: Own illustration

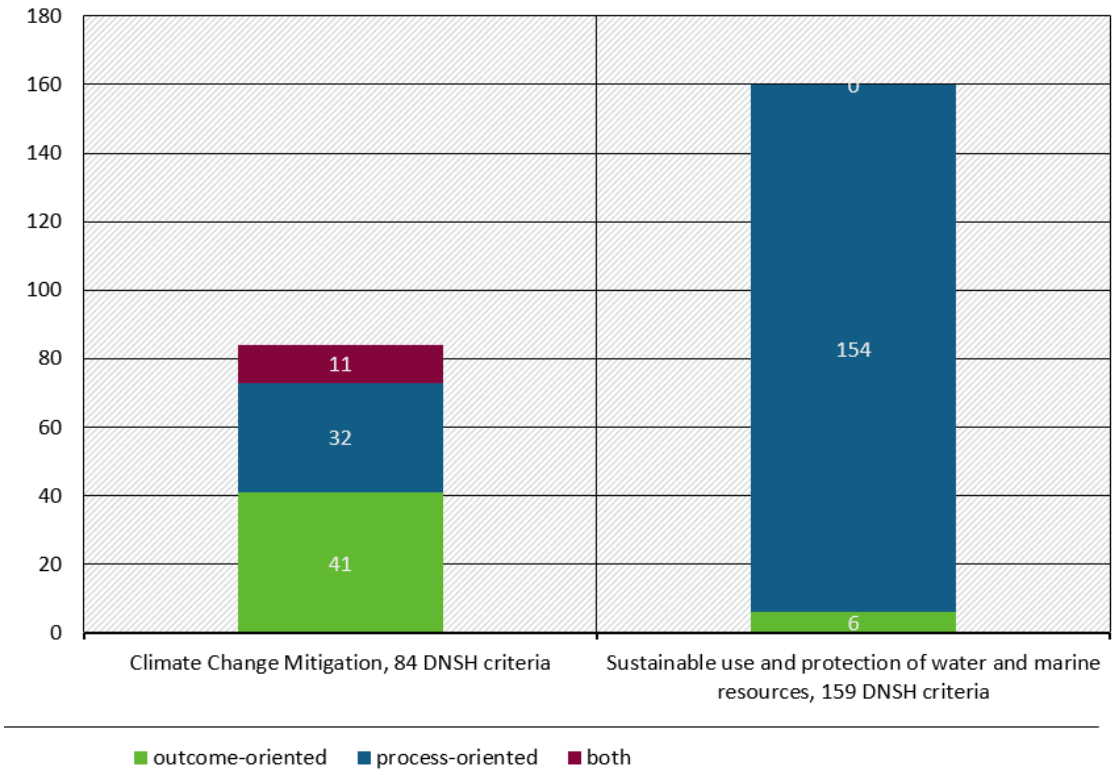
However, it should be noted that there are also DNSH criteria that refer to both Appendix B and additional process- or outcome-oriented criteria. This is the case in the construction and real estate activities, manufacturing, water supply, sewage, waste management, and remediation sectors. If those cases are excluded, there are still 134 DNSH criteria, or 84%, that refer to

[24] government or/and technical processes

appendix B. In contrast, for the environmental objective of CCM, there is not a single DNSH criterion that refers to a generic criterion in the Appendix.

Since process-oriented DNSH criteria are expected to have a lower level of ambition, it is worthwhile to compare the two environmental objectives, focusing on the orientation of the DNSH criteria.

Figure 2: Relationship of kind of DNSH-criteria



Source: Own illustration

Figure 2 illustrates a significant difference between the two environmental objectives. DNSH criteria that refer to Appendix B were counted as process-oriented, as Appendix B also has a clear process orientation. The relationship between outcome- and process-oriented DNSH criteria is of CCM, while it is nearly balanced for the environmental objective of CCM. In contrast, many more DNSH criteria are process-oriented than outcome-oriented for the environmental objective of Water.

In the case of CCM, 48% of all DNSH criteria are outcome-oriented. For the environmental objective of Water, however, only 6 DNSH criteria, and thus only 3,77% of DNSH criteria, are outcome-oriented.

This analysis provided us with the following critical interim results, which were necessary for selecting specific DNSH criteria for improvement:

- The environmental objective of Water more often refers to process-oriented DNSH criteria than the environmental objective of CCM. A closer examination of the environmental objective of Water could, therefore, be beneficial.

- Appendix B has a high priority for being considered in terms of improvement potential for two reasons. On the one hand, as a generic indicator, it is process-oriented and, therefore, has no thresholds, which can harbor the risk of a low level of ambition. On the other hand, improving this DNSH criterion will enhance the evaluation of a large number of activities, as most activities related to the environmental objective of water are listed in Appendix B.

4 Results of the second phase of the analysis: Exemplary detailed analysis and proposals for improvements of the indicators

This Chapter aims to develop exemplary DNSH and PAI indicator improvement proposals for the two environmental objectives CCM and Water. To do this, we first address the selection of DNSH criteria for further analysis. This is followed by an evaluation of selected PAI indicators to steer decision-making and then exemplary improvements to DNSH criteria. Since the approach for deriving improvements for the DNSH criteria referring to Appendix B[25] differs from the one for the other DNSH criteria, the suggestions for improvement for Appendix B are considered in a separate sub-chapter.

4.1 Selection DNSH criteria for further analysis

The following points were relevant for the selection of further DNSH criteria, which were developed from the categories in the methods section (Chapter 2.2.2 and 3):

1. **International applicability:** International applicability is relevant to ensure that non-European companies can also utilize the standards without difficulty. In particular, if the DNSH criteria refer to EU regulations or directives, their international applicability is challenging (see also Chapter 2.2.2).
2. **No threshold:** Especially when DNSH criteria are outcome-oriented, it is essential to have a quantitative threshold in place (see also Chapter 2.2.2).
3. **Process technical or process governance:** Process-oriented DNSH criteria often have a lower level of ambition, as already described in chapters 2.2.2 and 3.
4. **Reference to non-current documents:** For example, if the DNSH criteria refer to a regulation that is no longer in effect. Referring to outdated regulations undermines ambition and makes it more difficult for companies to apply.
5. **Thematically unsuitable assignment to the environmental objective:** The DNSH criteria and the documents they refer to must be thematically consistent with the environmental objective.

Based on the results of Chapter 3 and these challenge categories, we started selecting specific DNSH criteria for exemplary recommendations. In doing so, it was essential that the selected DNSH criteria were politically relevant and that there were sufficient sources to build the improvement proposals.[26]

Points of reference for improvement proposals

For making proposals for amendments, there must be suitable literature with possible starting points for solutions that serve as key points of reference. In the first instance, we included the following types of sources in our analysis:

- EU regulations
- International Standards (e.g., GRI, ISO)

[25] The improvement of Appendix B is also relevant because, according to the EEA's 2024 report, European water quality shows that action is urgently needed (European Environment Agency (EEA) (2024), p. 5.).

[26] There are some DNSH criteria that, based on the problem categories, need improvement but did not make it into our final selection. We have listed these DNSH criteria, along with the reason why we did not make amendment proposals, in Appendix.

- Scientific articles

For each DNSH criterion analyzed, we used at least one of the three types of sources. For a few specific questions regarding thresholds, we also consulted national regulations (from EU member states only). However, the formulation proposals do not refer to these national regulations but include the thresholds directly.

Table 8 lists the DNSH criteria that were collected.

Table 8: Selected DNSH criteria for exemplary amendment

environmental objective	economic activities	DNSH criteria	Abbreviation
CCM	4.8. Electricity generation from bioenergy, 4.13. Manufacture of biogas and biofuels for use in transport and of bioliquids, 4.20. Cogeneration of heat/cool and power from bioenergy, 4.24. Production of heat/cool from bioenergy	The activity meets the requirements relating to sustainability, greenhouse gas emission savings, and efficiency laid down in Article 29 of Directive 2018/2001.	Biofuels
CCM	4.14. Transmission and distribution networks for renewable and low-carbon gases, 4.15. District heating/cooling distribution	Fans, compressors, pumps and other equipment used which is covered by Directive 2009/125/EC comply, where relevant, with the top class requirements of the energy label, and otherwise comply with implementing regulations under that Directive and represent the best available technology.	Energy Efficiency
Water	1.1. Manufacture of active pharmaceutical ingredients (API) or active substances, 1.2. Manufacture of medicinal products	1. Waste water treatment: The performance of wastewater treatment processes conducted by or on behalf of the manufacturing plant does not lead to any deterioration of water bodies and marine resources. When activities fall within their scope, they meet the requirements of Directives 91/271/EEC, 2008/105/EC, 2006/118/EC, 2010/75/EU, 2000/60/EC, (EU) 2020/2184, 76/160/EEC, 2008/56/EC and 2011/92/EU. The activity implements best practices specified in the Joint Research Centre Best Environmental Management Practice for the Public Administration Sector. Where wastewater treatment is conducted by an urban wastewater treatment plant	Water emissions

environmental objective	economic activities	DNSH criteria	Abbreviation
		on behalf of the manufacturing plant, it is ensured that: (a) the load of pollutants released by the manufacturing plant has no negative effect in the treatment process of the urban waste water treatment plant; (b) the load and characteristics of pollutants do not pose any risk or harm to the health of the staff working in waste water treatment plants; (c) the urban waste water treatment plant is designed and equipped appropriately to abate the released polluting substances; (d) the overall load of the concerned pollutants discharged to the water body is not increased compared to the situation where the emissions from the installation concerned remained compliant with emission limit values set for direct releases; (e) the usability of the sewage sludge for nutrient (re)cycling is not affected. For installations where additional pollutant limits or stricter conditions have been included in their environmental permit compared to the requirements of the legislation mentioned above, these stricter conditions apply. 2. Soil and groundwater protection: Appropriate measures are in place to prevent emissions to soil, and regular surveillance is conducted to avoid leaks, spills, incidents or accidents occurring during the use of equipment and during storage. 3. Water Consumption: Operators assess the water footprint of the chemical production processes in line with ISO 14046:2014 and ensure that they do not contribute to water scarcity. Based on this assessment, operators provide a declaration that they do not contribute to water scarcity which is verified by an independent third party.	
Water	Appendix B	Environmental degradation risks related to preserving water quality and avoiding water stress are identified and addressed with the aim of achieving good water status and good ecological potential as defined in Article 2, points (22) and (23), of Regulation (EU) 2020/852, in accordance with Directive 2000/60/EC and a water use and protection management plan, developed thereunder for the potentially affected water body or bodies, in consultation with relevant stakeholders. Where an Environmental Impact Assessment is carried out in accordance with Directive 2011/92/EU and includes an assessment of the impact on water in accordance with Directive 2000/60/EC, no additional assessment of impact on water is required, provided the risks identified have been addressed.	Appendix B

Source: Own illustration, based on Commission delegated Regulation (EU) 2021/2139

4.2 Evaluation of selected PAI indicators for steering decision-making

As shown in Chapter 2.2.1, the usability of PAI indicators for steering decision-making is an important aspect. In this chapter, we examine the mandatory PAI indicators for CCM and water and assess their usability for decision-making.

As described in Chapter 3.1, the PAI indicators are sector-agnostic, while the DNSH criteria are sector-specific. The PAI indicators cannot be adapted to be coherent with all DNSH criteria because the DNSH criteria are too diverse due to their sector specificity. Therefore, suggestions for improving the coherence between DNSH criteria and PAI indicators are provided in the exemplary recommendations for improving DNSH criteria in Chapter 4.3 as a second step.

We analyzed the PAI indicators concerning usability for steering decision-making using the criteria already described in Chapter 2.2.1:

1. For **usability for certainty of direction**, we checked whether, for example, a metric is available that precisely measures environmental impacts, as well as improvement or deterioration.
2. Under the point **of usability for comparability**, it is checked whether an indicator facilitates comparison between financial products or between companies.
3. **Usability for identification of causes for changes** checks whether the results of the PAI indicators can be broken down in such a way that it can be seen whether reductions in environmental impacts are the result of a transition to environmental sustainability or, for example, are only a consequence of a company's shrinking process.

Although the PAI indicators are intended for reporting by the financial sector, we also examined the extent to which they could be utilized for decision-making if applied by companies in the non-financial sector for targeted investment management. After all, companies should be in a position to make reliable decisions on the environmental issues relevant to them and the associated investments. And if the application of the indicators is not feasible for them to identify the relevant environmental issues, this would also not be the case for the financial sector. Additionally, this consideration could inform the selection of which PAI indicators to use as KPIs across all sectors.

For the assessment, we reviewed the PAI indicator definitions in the SFDR and presented the results in Table 9.

To illustrate and understand the assessment, three cases are explained here as examples:

a) The PAI indicator of GHG emissions can, in principle, be used as a decision-steering indicator concerning certainty of direction and comparability. GHG emissions represent a (primarily) standardized measure for influencing the climate and are not dependent on other, e.g., company-specific influencing variables. Regarding Scope 3 GHG emissions, further standardization is needed, and the data situation requires improvement. This kind of usability applies to both the financial sector and other sectors of the economy.

   However, this indicator currently does not allow for the identification of whether changes are, for example, efficiency improvements (as a means of transition) or a decline in a company's turnover figures (which would indicate a declining business instead of a transition process). This limitation applies to companies in both the financial and non-financial sectors for this indicator. Such a differentiated assessment is only possible in combination with other indicators that refer to different (output) variables of companies (as with other PAI indicators for CCM).

b) If PAI indicators represent a principal sound basis for comparison within a sector, as is the case with the PAI indicator for energy consumption intensity, this helps companies in the respective sector as a guideline.
For actors in the financial sector, who are usually invested in a variety of industries, a summarized view across industries would be less suitable. In this case, a positive development of the indicator, for example, would not necessarily indicate whether it is due to a shift in financing to more efficient and, therefore, more environmentally friendly sectors or an increase in efficiency (and therefore, transformation) within existing sectors. To obtain more meaningful information from such indicators, financial service providers currently differentiate between different industry groups (NACE codes) in the PAI indicators reporting for the "Energy consumption intensity..." [29]. This is also reflected in the description of the indicator, which speaks of "per high impact sector".

c) The PAI indicator 'Emissions to water' is, in principle, not suitable for specifically evaluating changes related to the environmental objective of water. Depending on the sector and individual case, various substances can be emitted into the water, each with different environmental impacts. Even at the level of a particular company with water emissions, the aggregation of different emitted substances leads to an assessment that is not directionally reliable, as, for example, less hazardous substances could be replaced by more hazardous substances of the same quantity without this negative change being reflected by the indicator. The indicator is, therefore, even less suitable as a control variable for financial actors, which further increases this uncertainty by aggregating it across various companies in which they are invested.

Table 9: Usability of the mandatory PAI indicators for control purposes (for environmental objectives CCM and water)

PAI indicator	Definition	Usability for certainty of direction	Usability for comparability	Usability for identification of causes for changes
Environmental objective: CCM				
1. GHG emissions	GHG differentiated by Scope 1, 2, 3 and total GHG emissions	Yes	Yes	No
2. Carbon footprint	Current value of investment divided by enterprise value of investee multiplied by GHG emissions of areas 1, 2 and 3 of the investee.	Yes (for financial sector)*	Yes (for financial sector)*	No
3. GHG intensity of investee companies	Aggregated Scope 1, 2, and 3 GHG emissions of a company relative to its sales or revenues	Yes	Yes	Yes
4. Exposure to companies active in the fossil fuel sector	Share of investments in companies active in the fossil fuel sector	Yes (for financial sector)*	Yes (for financial sector)*	No

PAI indicator	Definition	Usability for certainty of direction	Usability for comparability	Usability for identification of causes for changes
5. Share of non-renewable energy consumption and production	Share of non-renewable energy consumption and non-renewable energy production of investee companies from non-renewable energy sources compared to renewable energy sources, expressed as a percentage of total energy sources	Yes	Yes	Yes
6. Energy consumption intensity per high impact climate sector	Energy consumption in GWh per million EUR of revenue of investee companies, per high impact climate sector	Yes**	Yes**	Yes)
Environmental objective: water				
8. Emissions to water	Tonnes of emissions to water generated by investee companies per million EUR invested, expressed as a weighted average	No	No	No

Source: Own illustration, based on the SFDR[27]

* in all other cases in principle, usable for the financial and non-financial sector

** if in relation to own company (and not investee companies), also usable for non-financial sector

Overall, PAI indicators for CCM allow for more controllability than the PAI indicator for Water. A key reason is that water requires a much more granular approach. Another reason is that various indicators can be used in combination to relate to both absolute (GHG emissions) and relative targets (GHG emissions in relation to output variables, for example). In addition, the use of some of the indicators also allows statements to be made about causes in the achievement of absolute GHG reduction targets (increased energy efficiency [PAI 3] or increased use of renewable energies [PAI 5]). Furthermore, most of the mandatory CCM-PAI indicators are suitable for decision processes in non-financial and financial sectors.

As highlighted in Table 9, most of the mandatory CCM PAI indicators can be used in principle for various control and comparison purposes. However, the mandatory PAI indicator for water cannot be used effectively in all assessment categories.

Thus, the mandatory PAI indicators for the environmental objective of CCM do not require substantial amendments concerning their usefulness for steering decision-making. That´s why we did not conduct a deeper dive into the usability of steering decision-making for the mandatory PAI indicators but instead examined specific PAI indicators for their compatibility with DNSH criteria in Chapter 4.3.

However, there is a need for improvement in the mandatory PAI indicator for the environmental objective of water, particularly in terms of usability for steering decision-making. We have

[27] European Commission (2019).

discussed possible suggestions for relevant improvements, as well as aspects of DNSH compatibility, in Chapter 4.3.

One further general conclusion that can be drawn is that the relevance of a PAI indicator to environmental management depends on whether it is specific enough across different sectors or activities to be regarded as directionally reliable.

4.3 Exemplary improvements of DNSH criteria

This Chapter presents the suggested improvements for the DNSH criteria selected in Chapter 4.1, including aspects of better alignment with corresponding PAI indicators. A detailed description of the DNSH criteria discussed, the spaces for improvement, and the reasons for the proposed improvements can be found in ANNEX I.

In the following, the DNSH criteria for the environmental objective of CCM will be considered first, followed by those for the environmental objective of Water. For each DNSH criteria, the following points are addressed:

1. Challenge analysis: The challenge analysis is based on the challenge categories already described.
2. Sources: The sources used for the respective DNSH criteria are mentioned and justified.
3. Proposed improvement: The DNSH criteria are set out with the proposed improvements. Changes, deletions, and additions are written in red to make them easier to recognize.

4.3.1 Environmental objective: CCM

a) Biofuels

Challenge analysis of the DNSH criteria

For activities 4.8 Electricity generation from bioenergy and 4.20. Cogeneration of heat/cool and power from bioenergy, and 4.24 Production of heat/cool from bioenergy, the challenges of the DNSH criteria can be categorized into three potential issues for improvement:

1. The DNSH criteria refer to Article 29 of Directive 2018/2001 (Renewable Energy Directive, "RED II"), which has been amended (RED III). The amendments will come into force in May 2025, while RED II is yet to be implemented by some member states.
2. The DNSH criteria refer to an EU Directive (Directive 2018/2001) that includes an EU-specific methodology for bioenergy activities. This reduces its international applicability.
3. The DNSH criteria do not allow for immediate compatibility with the respective PAI indicator due to their methodological differences.

Sources

At the center of all three challenges lies the reference to the EU's Renewable Energy Directive (Directive 2018/2001). A possible solution would be to revise the existing reference to the GHG emission savings methodology as outlined in the RED to nominal gCO_{2e}/kWh thresholds, as used for several energy sector activities in the EU taxonomy. There are similar approaches for electricity utilities currently used by the financial sector, with the Climate Bonds Initiative (CBI) being a case in point. CBI's Electrical Utilities Criteria[28] puts forward a scope 3 (emissions from processing and transporting biomass) 100g CO_{2e}/kWh threshold for existing and a scope 3

[28] Climate Bonds Initiative (CBI) (2024).

(emissions from processing and transporting biomass) 50gCO_{2e}/kWh threshold for new bioenergy utilities. This approach could provide solutions for challenges 2 and 3 in particular.

However, changing the DNSH criteria to nominal thresholds potentially leads to usability issues. The Renewable Energy Directive is the primary legislative framework in the EU governing bioenergy activities. European bioenergy producers already need to comply with the EU directive and thus ensure they are aligned with the requirements of the RED's GHG emission savings methodology. Deviating from this approach while solving potential issues with the criteria would increase regulatory requirements without necessarily improving the level of ambition. Hence, it makes sense to continue with the existing criteria[29].

An adjustment of DNSH and PAI would be complex because there are still more differences in the indicators: GHG emissions are not shown separately by the scope for the DNSH criterion, as would be necessary for the PAI indicator; in addition, specific values (per unit of energy) for DNSH criteria are compared to absolute values for the PAI indicator.

One possible approach would be to convert the DNSH values to make the data compatible with at least one part of the relevant PAI indicator, specifically for total emissions (the sum of Scope 1 to 3). We therefore suggest the following conversion formula:

Emis = (1 - Red% / 100) * comparator * En

In this formula means:

- Emis = Sum of annual GHG emissions Scope 1, 2, and 3
- Red% = Actual reduction factor (in percent) of specific emissions (compared to "comparator")
- Comparator = relevant fossil fuel comparator (emission factor) of the RED (for example, from Annex VI of the RED for electricity)
- En = Annual energy output of the plant/system (economic activity)

However, if GHG emissions are to be reported separately by the scope for the PAI indicator, primary data would need to be used that are included in the calculation of the DNSH criterion, namely the absolute GHG emissions of the electricity or heat/cooling generating plant, separated by scope. These cannot be calculated backward from the values for the DNSH criterion using a formula.

As this analysis demonstrates, a comprehensive alignment would extend beyond the current methodologies of the PAI indicator or the DNSH criteria.

Therefore, instead of aligning the indicators, we recommend using the information from companies' sustainability reports regarding GHG emissions for Scope 1, 2, and 3, wherever possible. According to the ESRS, these are available in the context of the CSRD. These data also have the advantage that they are aimed at the company level, which is also necessary for the PAI indicator.

Or to proceed as follows if GHG emissions cannot be taken from the sustainability reporting [30]:

[29] Following the proposal of the 'Draft Report on Activities and Technical Screening Criteria to be Updated or Included in the EU Taxonomy' of the Platform on Sustainable Finance (2025).

[30] The level of economic activity may have to be included at the company level if the company operates several different facilities/economic activities.

1. The sum of Scope 1 to 3 emissions can be calculated using the above formula based on the DNSH criterion or the information used to check compliance with the criteria.
2. The individual Scope 1 to 3 GHG emissions must be presented separately in addition to the presentation for the DNSH criterion.

So, we do not propose to change this DNSH criteria for biofuels for the activities mentioned above.

b) Energy Efficiency

Challenge analysis of the DNSH criteria

For the activities 4.14. Transmission and distribution networks for renewable and low-carbon gases and 4.15. District heating/cooling distribution the challenges of the DNSH criteria can be categorized into three potential issues for improvement:

1. The DNSH criteria are listed under the environmental objective of Pollution Prevention and Control. However, energy consumption is relevant to the environmental objective of CCM.
2. The DNSH criteria refer to Directive 2009/125/EC. Directive 2009/125/EC, which Directive replaced (EU) 2024/1781 from July 18, 2024.
3. The DNSH criteria refer to an EU directive which reduces the international applicability outside of the EU.

Sources

For problems 1 and 2, we looked at the contents of the former directive 2009/125/EC, as well as the newly applicable directive (EU) 2024/1781. In doing so, the differences between the old and the new directives were particularly relevant, but so were the transitional rules. After considering the content of the two directives and the transitional rules, we have concluded that although the new directive (EU) 2024/1781 contains transitional rules, we still recommend that the DNSH criteria refer directly to the currently valid directive (EU) 2024/1781. In contrast to Directive 2009/125/EC, Directive (EU) 2024/1781 is more comprehensive, as it has expanded the areas of application, extended information obligations, and introduced a digital product passport.

To find solutions for the third challenge, we searched for international standards and requirements for electricity efficiency. Since no internationally applicable electricity efficiency requirements were found, reference should therefore be made to the currently valid directive (EU) 2024/1781 and the corresponding ecodesign requirements for energy-related products, as these contain specific thresholds.

Proposal for improved DNSH criteria[31]
Fans, compressors, pumps and other equipment used which is covered by Directive (EU) 2024/1781 comply, where relevant, with the top-class requirements of the energy label, and otherwise comply with implementing regulations under that Directive and represent the best available technology.

[31] The changes, deletions, and additions we propose for the DNSH criteria are written in red.

4.3.2 Environmental objective: Water

Challenge analysis of the DNSH criteria

For the activities 1.1. Manufacture of active pharmaceutical ingredients (API) or active substances and 1.2. Manufacture of medical products, the problems of the DNSH criteria can be categorized into four potential issues for improvement:

1. The part "… not lead to any deterioration…" has no threshold. Thus, it is not clearly defined when deterioration begins.
2. Appropriate measures are process- governance-oriented, and they do not include a description of appropriate measures.
3. There is no threshold for regular surveillance.

Sources

To develop solutions for the problems mentioned, we first sought international standards. The GRI (306) "Waste water and waste" is particularly relevant for this. GRI (306) is an international standard for waste water and waste. It includes, among other things, waste water discharges; the generation, treatment, and disposal of waste; and the leakage of chemicals, oil, fuels, and other substances. To ensure international applicability for non-EU states, we aimed to include GRI 306 to the greatest extent possible. All content from the GRI (306) that we have used can be found in Annex I. Where we could not find solutions to the identified problems in international standards, we referred to Directive 2010/75/EU, which establishes a general framework for controlling the main industrial activities to prevent pollution from these activities. This could serve as an example of a baseline report to ensure that the quality of soil and groundwater does not deteriorate as a result of a manufacturing plant's operation. According to the platform report, this directive is easier to apply than the Water Framework Directive (WFD), for example, because Directive 2010/75/EU defines thresholds.[32]. As there are no specific EU guidelines for Challenge 3, the monitoring intervals already used in the German implementation of the Water Framework Directive (2000/60/EC) can be built on for further clarification.

Proposal for improved DNSH criteria[33]

1. Waste water treatment:

The performance of wastewater treatment processes conducted by or on behalf of the manufacturing plant does **not lead to any deterioration** of water bodies and marine resources. In order to ensure that the operation of an installation does not deteriorate the quality of soil and groundwater, it is recommended to prepare a baseline report, for example in accordance with Directive 2010/75/EU, paragraph (24).

When activities fall within their scope, they meet the requirements of Directives 91/271/EEC, 2008/105/EC, 2006/118/EC, 2010/75/EU, 2000/60/EC, (EU) 2020/2184, 76/160/EEC, 2008/56/EC and 2011/92/EU.

The activity implements best practices specified in the Joint Research Centre Best Environmental Management Practice for the Public Administration Sector.

Where wastewater treatment is conducted by an urban wastewater treatment plant on behalf of the manufacturing plant, it is ensured that:

[32] Platform on Sustainable Finance (2022), p. 52.

[33] The changes, deletions and additions we propose for the DNSH criteria have been written in red.

(a) the load of pollutants released by the manufacturing plant has no negative effect in the treatment process of the urban waste water treatment plant;

(b) the load and characteristics of pollutants do not pose any risk or harm to the health of the staff working in waste water treatment plants;

(c) the urban waste water treatment plant is designed and equipped appropriately to abate the released polluting substances;

(d) the overall load of the concerned pollutants discharged to the water body is not increased compared to the situation where the emissions from the installation concerned remained compliant with emission limit values set for direct releases;

(e) the usability of the sewage sludge for nutrient (re)cycling is not affected.

For installations where additional pollutant limits or stricter conditions have been included in their environmental permit compared to the requirements of the legislation mentioned above, these stricter conditions apply.

2. Soil and groundwater protection:

Appropriate measures are in place to prevent emissions to soil and **regular surveillance** is conducted to avoid leaks, spills, incidents or accidents occurring during the use of equipment and during storage.

To ensure that the measures are appropriate, information should be available on the following measures:
a. The total number and total volume of recorded significant spills of harmful substances.
b. The following additional information for each spill of harmful substances reported in the organization's financial reports:
i. Location of the spill;
ii. The volume of the spill;
iii. harmful substance spill categorized by: Oil spill (land or water surfaces), Fuel spill (land or water surfaces), Waste spill (land or water surfaces), Chemical spill (primarily land or water surfaces), and I15Other (to be specified by the organization).
c. Effects of significant spills of harmful substances.[34]

Operational surveillance shall be carried out at intervals sufficient to identify the effects of the stresses but at least once a year.[35]

[34] Global Reporting Initiative (GRI) (2016), p. 8.

[35] Bundesministerium der Justiz (2010), ANNEX IV.

3. Water Consumption:

Operators assess the water footprint of the chemical production processes in line with ISO 14046:2014 and ensure that they do not contribute to water scarcity. Based on this assessment, operators provide a declaration that they do not contribute to water scarcity which is verified by an independent third party.

4. The activity complies with the criteria set out in Appendix B to this Annex.

4.4 Potential improvement of Appendix B

For the environmental objective of Water, many activities refer to the DNSH criteria with Appendix B (see Chapter 3.2). Appendix B addresses water quality and water stress. Since the possible specifications are particularly related to the Water Framework Directive (WFD), we will focus on water quality.

Both Appendix B and the mandatory PAI indicator Emissions to Water refer to the WFD. Therefore, in this case, the problems associated with the DNSH criteria and the PAI indicator will be analyzed and addressed together to improve the compatibility between the DNSH criteria and the PAI indicators.

In contrast to the DNSH criteria discussed in Chapter 4.3, our approach focuses on enhancing the applicability of the WFD within the EU sustainable finance framework. We will, therefore, address DNSH criteria and PAI indicators together. As the applicability of the WFD is challenging for companies, improvements to Appendix B would strengthen its usability. By strengthening the criteria in Appendix B and the comparable PAI indicator, their respective potential positive impacts are also improved.

We begin with an analysis of the common challenges of Appendix B and the PAI indicator Emissions to Water. We continue by addressing the individual challenges of Appendix B, and the PAI indicator Emissions to Water is discussed. We conclude by suggesting improvements for both, which also aim to strengthen their coherence. The objectives for improvement are first defined, and then specific instruments for improvement are discussed.

4.4.1 Challenge analysis

Common challenges for both the DNSH criteria (Appendix B) and the PAI indicators

Appendix B and the PAI indicator Emissions to Water both refer to the WFD. While the PAI indicator refers directly to the WFD, Appendix B primarily refers to the framework for facilitating sustainable investment, as outlined in EU 2020/852. In Appendix B is written: „Environmental degradation risks related to preserving water quality and avoiding water stress are identified and addressed with the aim of achieving good water status and good ecological potential as defined in Article 2, points (22) and (23), of Regulation (EU) 2020/852, in accordance with Directive 2000/60/EC and a water use and protection management plan, developed thereunder for the potentially affected water body or bodies, in consultation with relevant stakeholders."[36] Regulation EU 2020/852 refers to the WFD for good water status and good ecological potential. The complete regulatory pathway is illustrated in Figure 3.

Figure 3 shows that, for good ecological status, pollution from priority substances must be reduced. In the WFD, the priority substances are listed in Annex X; however, this Annex is

[36] Appendix B from Commission Delegated Regulation (EU) 2021/2139 (European Commission 2021).

amended by Directive 2013/39/EU. As this amendment is not referenced in the DNSH criteria, accessing the relevant information on priority substances is difficult.

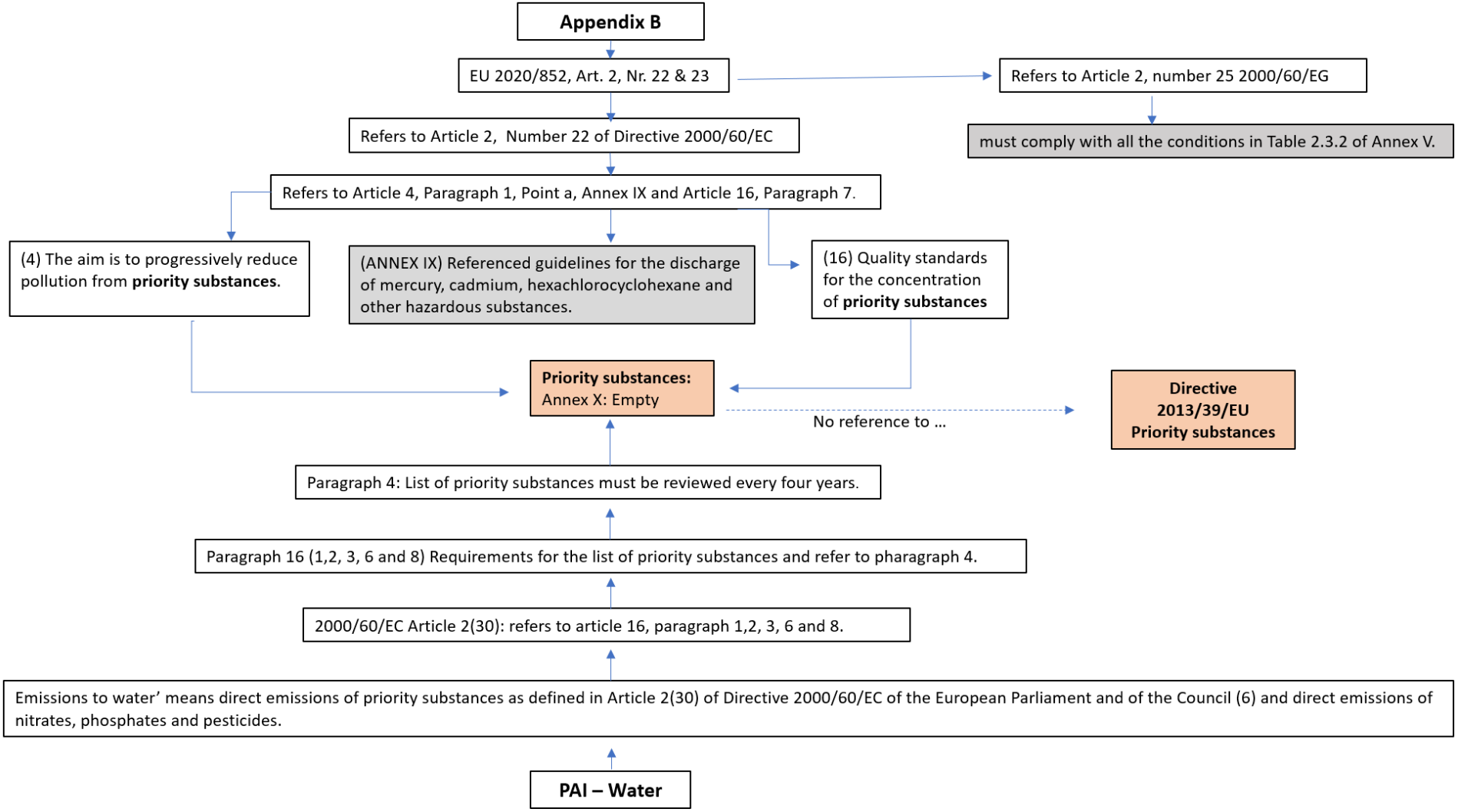
The description of the PAI indicator Emissions to Water in the SFDR is as follows: "Emissions to water means direct emissions of priority substances as defined in Article 2(30) of Directive 2000/60/EC of the European Parliament and of the Council (6) and direct emissions of nitrates, phosphates and pesticides."[37] This article focuses on the significance of the priority substances referred to in Annex X, while the relevant amending regulation is difficult to identify.

Potentials for improving the PAI indicator

A central challenge of the PAI indicator Emissions to Water is that it only defines what emissions to water are but does not set any thresholds for individual substances. It also does not provide further explanation of the composition of the substances. In practice, this could lead to a situation in which companies reduce less hazardous pollutants while simultaneously increasing their emissions of critical pollutants to the same level. In that case, the PAI indicator would remain at the same level (see Chapter 4.2).

[37] EU Commission (2022), p. 39.

Figure 3: Path of regulations from Appendix B and Water-PAI to Annex X in the WFD



Source: Own illustration

As described in the previous section, the SFDR defines emissions to water as "direct emissions of priority substances" and refers to the WFD. The priority substances list is difficult to identify. This undermines the guiding effect of the PAI indicator. If the applicable list of priority substances cannot be readily identified, it is not possible to assess whether there are direct emissions of priority substances into water. There is, therefore, a lack of directional certainty regarding control by the PAI indicator.

Potential for improving Appendix B

Most of the room for improvement in Appendix B has already been described in the section "Common challenges for both DNSH criteria (Appendix B) and PAI indicator." This section only addresses the room for improvement that applies *exclusively* to Appendix B.

The definition of the water body status is essential for the processing of Annex B. However, to avoid deterioration of the water body, companies must know, among other things, the current status of the water body into which they discharge their wastewater.

However, there are currently no globally or even EU-wide standardized databases or portals where this information can be easily obtained. This makes it difficult for companies to access the necessary information relevant to them. Additionally, the lack of a common database also compromises the comparability of the results reported in Appendix B.

4.4.2 Suggestions for improvement

Suggestions for improvement should focus on enhancing the usability of Appendix B and the PAI indicator 'Emissions to Water' while strengthening the certainty of direction and its level of ambition. Increasing their certainty of direction can be achieved by providing more specific details. To achieve this, the relevant regulatory documents must be accessible to all relevant stakeholders. Moreover, the content needs to be formulated as precisely as possible. The following section outlines suggestions for possible improvements. However, it is primarily concerned with the presentation of instruments; specific suggestions for improving the content are not provided. To solve the problems described in Chapter 4.4.1, we propose the following instruments:

- Guidelines for the application of the WFD for EU Taxonomy users.
- Clear and traceable reference to the applicable list of priority substances, including relevant amendments, integrated in the DNSH description.
- an accessible database where companies can find the water status of local water bodies

Guidelines for the application of the WFD

To improve the applicability of the WFD, it is essential to ensure that companies can effectively utilize this complex set of rules. For this reason, guidelines for EU Taxonomy users should be developed for the Water Framework Directive, which will enable companies to locate the relevant passages in the regulation. These guidelines should show which parts are relevant for which sectors and what needs to be considered in reporting.[38]

[38] In its "Draft Report on Activities and Technical Screening Criteria to be Updated or Included in the EU Taxonomy," the Platform on Sustainable Finance also writes that Appendix B in its current form is difficult for companies to understand and recommends "[...] that companies are either given further guidance on how to comply with the criteria (e.g., in the form of FAQs, as this is not currently the case) or that the criteria are amended so that the necessary assessments that must be carried out to demonstrate compliance with the criteria are described in more detail" (Platform on Sustainable Finance 2025, p. 101).

Since both Appendix B and the PAI indicator 'Emission to Water' refer to the WFD, it is essential that the guidelines help ensure the requirements of Appendix B and the PAI indicator are met. To ensure this, providing information about which substances are among the priority substances is key. Such information is provided in Regulation 2013/39/EU. However, as illustrated in Figure 3, this regulation is difficult to identify, as it cannot be readily accessed through regulatory cross-references within the WFD framework. To address this, the guidelines should clearly indicate which regulations are required for compliance with the Water Framework Directive and where these can be found.

List of the status of water bodies from regional authorities

To enable companies to assess whether they are contributing to a deterioration in the status of water bodies, they need to understand the current state of water. For this purpose, there should ideally be a global overview database in which companies can obtain information on the status of water bodies.

Depending on the status of the water body, the measures to prevent its deterioration can vary significantly. With the 'Freshwater Information System for Freshwater Europe', a similar database already exists for Europe. This database, maintained by the European Environment Agency, provides information and data on the state of rivers, lakes, groundwater, the pressures affecting them, and the measures taken to protect and conserve the aquatic environment. [39] Since the application of DNSH criteria and PAI indicators is taking place globally, it is essential to get this data for countries outside Europe as well. A global database (or several regional ones built on the same methodologies) would be an essential brick for companies, in addition to the proposed guidelines (see above).

In addition, the definitions of water status types within the WFD should be supplemented by specific criteria in the DNSH and PAI indicators. Currently, the WFD classification categorizes water types into three statuses: high, good, and moderate. It does not define what constitutes a low water status or when a moderate status deteriorates. However, the definition of low ecological status is crucial for understanding whether economic activities are causing a change in water status from moderate to low or vice versa. This is particularly important for the assessment in terms of a “do not significant harm indicator.”

Aspects for Improvement for water quality in the relevant DNSH criteria

Due to the far from sufficient quality of water resources in Europe (see EEA 2024), the project discussed whether Appendix B should be supplemented with the aspect of “improving water quality” to provide greater incentives to improve the situation through the DNSH criteria.

An argument in favor of such an approach would be that the influence on water quality is present in a large number of economic activities, but the influence is more of a “side effect” and does not reflect the actual economic activity in the strict sense of the taxonomy. The potential improvement in water quality would thus at least be able to come to the attention of companies in significantly more DNSH criteria reports and, thus, hopefully, also in their relevant activities.

On the other hand, the current basic logic of the “do no significant harm” principle does not offer this perspective of improvement. This would, therefore, be breaking new ground.

[39] European Environment Agency (EEA) (n.d.)

Even if we are unable to pursue this suggestion further here, we would at least like to have noted it as a possible option.

5 Conclusions

We briefly present the most important conclusions from the previous chapters here.

We want to note that these results are based on our empirical findings, which are based on the consideration of the environmental objectives CCM and Water, as well as selected sectors of the EU Taxonomy.

For this reason, our conclusions focus on results that are likely to be of general importance for the further development of indicators in the field of sustainable finance and that can be used beyond the environmental objectives, economic activities, and individual indicators discussed in this report.

General Compatibility between DNSH criteria and PAI indicators

Two essential starting points for compatibility are that:

a) DNSH criteria (relating to economic activities) and PAI indicators (relating to company level) serve different reporting levels

b) and that DNSH criteria (by referring to economic activities) are sector-specific, while PAI indicators are (by far the majority) sector agnostic.

These structural differences, resulting from the distinct logics of the taxonomy and the SFDR, pose challenges regarding compatibility.

Approximation of DNSH to PAI

Therefore, a consistent adaptation of the sector-agnostic PAI indicators to the sector-specific DNSH is not possible in principle. Conversely, we demonstrated that DNSH adaptations for improved compatibility with the PAI are possible, depending on the individual case, and can also contribute to enhancements in terms of applicability and, if necessary, the level of ambition.

Adjustments from both sides (DNSH and PAI)

There are also cases where optimization options for DNSH criteria and PAI indicators are used simultaneously. This is the case, for example, if the DNSH criteria are described quite generically (e.g., Appendix B of the DNSH) and a PAI does not appear to be sufficiently target-oriented at the same time. We have demonstrated this using the example of the indicators for the environmental objective of water. We were able to demonstrate a possible improvement in compatibility and target reliability.

Consideration of other reporting sources for SFDR data

As SFDR reporting does not have to be based exclusively on the DNSH representations based on the EU taxonomy of companies but can also draw on the Corporate Sustainability Reporting Directive (CSRD) reports based on the ESRS. This is another important area for action to contribute to a consistently good supply of data from real economy companies to the financial sector. These two approaches (CSRD and SFDR) also have the advantage that the reporting levels can be closer to each other in terms of basic logic (both at the company level).

Usability of PAI indicators for steering decision-making on environmental issues at companies in the financial and non-financial sector

To be helpful for corporate decisions, indicators should fulfill the following criteria:

a) Is there a **certainty of direction** regarding the environmental objectives to be achieved?

b) Can the indicator be used for **comparison with other financial products, or between companies** in the same sector, or between similar economic activities?

c) Can **causes for changes be identified** to make a statement regarding the effects of the transition?

The more comprehensive the PAI indicator is for all sectors, the easier it is for the PAI indicators to fulfill these criteria. In principle, this is the case for the mandatory PAIs on CCM that were examined, while there is clear scope for optimization in the case of water.

Regarding this aspect of the usability of the PAI indicators, there may be conflicting objectives, as some environmental issues would need to be considered on a more sector-specific basis to ensure good controllability, while the PAIs are generally aimed at a sector-agnostic description.

In general, our analyses and recommendations have shown that it is possible to strengthen the coherence between individual DNSH and PAI, despite some fundamentally different approaches, and at the same time improve or at least maintain the level of ambition. As greater coherence is generally beneficial for the exchange of information between and within companies, efforts in this direction should be pursued beyond the selected indicators discussed here. The basic approaches outlined here for improvement can be applied in this context.

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A DNSH improvement schemes

A.1 Explanations on the structure of the DNSH improvement scheme

The DNSH improvement scheme is intended to provide a quick overview of the need for improvement of the individual DNSH criteria and the suggestions for improvement. A brief overview of the structure and content of the factsheet is provided here:

First, an overview of the environmental objective, relevant sector and activities for the selected DNSH criteria is given. In the DNSH criteria, we have highlighted the identified rooms for improvement in bold.

After that, we start with the challenge analysis, where first the challenges of DNSH criteria are given "challenge numbers".

The identified challenges are examined in more detail and the challenges are classified according to the following categories:

- **International applicability:** Reference to EU regulations and derivatives, which is why international applicability outside the EU is difficult.
- **No threshold:** A quantitative threshold is missing.
- **Process technical:** Only general technical guidelines are given, without specific explanation of outputs, outcomes or thresholds.
- **Process governance:** Only general governance guidelines are given for the company, without specific instructions for execution.
- **Reference to non-current documents:** For example, if the DNSH criteria refer to a regulation that is outdated.
- **Thematically unsuitable assignment to the environmental objective:** It is important that the DNSH criteria and the documents they refer to are thematically consistent with the environmental objective.

A detailed description of the method and analysis criteria used can be found in Chapter 2, 3 and 4.

The challenge identified is then described in more detail. It is important to note that, especially for longer DNSH criteria, it may be the case that specific issues are only identified for parts of the DNSH criteria, while other parts of the DNSH criteria show no need for improvement.

Solutions are then sought for each of these challenges numbers in the third part. It was checked whether international standards on this topic already exist and could be applied (see Chapter 4.3 for a detailed description of the procedure and suggestions for improvement). A recommendation follows for each problem.

At the end of each DNSH improvement scheme we added a section called "Further remarks", where we mention further points for potential amendments, if not directly related to the DNSH criterion.

The list of sources we build on can be found in Chapter 4.3.

A.2 DNSH improvement scheme

A.2.1 Environmental objective: Water

a) Water Emissions

1. Overview

Table 10: DNSH Water Emissions overview: Sectors and Activities

Environmental objective	Sector	Activity/Activities
Water	Manufacturing	1.1. Manufacture of active pharmaceutical ingredients (API) or active substances 1.2. Manufacture of medical products

Source: Own illustration

Table 11: DNSH Water Emissions Indicators

Kind of indicator	Description
DNSH	1. Waste water treatment: The performance of wastewater treatment processes conducted by or on behalf of the manufacturing plant does **not lead to any deterioration** of water bodies and marine resources. When activities fall within their scope, they meet the requirements of Directives 91/271/EEC, 2008/105/EC, 2006/118/EC, 2010/75/EU, 2000/60/EC, (EU) 2020/2184, 76/160/EEC, 2008/56/EC and 2011/92/EU. The activity implements best practices specified in the Joint Research Centre Best Environmental Management Practice for the Public Administration Sector. Where wastewater treatment is conducted by an urban **wastewater** treatment plant on behalf of the manufacturing plant, it is ensured that: (a) the load of pollutants released by the manufacturing plant has no negative effect in the treatment process of the urban waste water treatment plant; (b) the load and characteristics of pollutants do not pose any risk or harm to the health of the staff working in waste water treatment plants; (c) the urban waste water treatment plant is designed and equipped appropriately to abate the released polluting substances; (d) the overall load of the concerned pollutants discharged to the water body is not increased compared to the situation where the emissions from the installation concerned remained compliant with emission limit values set for direct releases; (e) the usability of the sewage sludge for nutrient (re)cycling is not affected. For installations where additional pollutant limits or stricter conditions have been included in their environmental permit compared to the requirements of the legislation mentioned above, these stricter conditions apply. 2. Soil and groundwater protection: **Appropriate measures** are in place to prevent emissions to soil and **regular surveillance** is conducted to avoid leaks, spills, incidents or accidents occurring during the use of equipment and during storage. 3. Water Consumption:

Kind of indicator	Description
	Operators assess the water footprint of the chemical production processes in line with ISO 14046:2014 and ensure that they do not contribute to water scarcity. Based on this assessment, operators provide a declaration that they do not contribute to water scarcity which is verified by an independent third party.[40] 4. The activity complies with the criteria set out in Appendix B to this Annex.
Corresponding PAI	Mandatory PAI: Emissions to water: Tonnes of emissions to water generated by investee companies per million EUR invested, expressed as a weighted average.[41]

Source: Own illustration

2. Challenge Analysis

Table 12: DNSH Water Emissions Challenge Analysis

Challenge No.	Challenge category/ Specific challenge	Reason
1	No Threshold/ "... **not lead to any deterioration** ..."	The point at which deterioration begins is not defined.
2	Process governance / "... **Appropriate measures**..."	No description of what appropriate measures should include or no explanation of what the criteria for appropriate measures are.
3	No Threshold/ "... **Regular surveillance** ..."	Specification for regular surveillance is missing.

Source: Own illustration

3. Suggested solutions

Challenge No. 1: "...**not lead to any deterioration**..."

Table 13: DNSH Water Emissions Challenge No. 1 (not lead to any deterioration)

Procedure	Suggested solutions
How should the challenges be tackled?	Defining what "not lead to any deterioration" means.
Are there already standards that can be used?	Directive 2010/75/EU, paragraph (24)

[40] European Commission (2023b), p. 13 – 14.

41 It should be checked whether „tonnes of emissions" is an adequate indicator for the evaluation of pollution to water of the pharmaceutical industry, given the broad variety of different substances and their polluting qualities. Another problem is, that the EU-regulation, where the PAI-definition points to (2000/60/EC), doesn´t have a list with relevant substances (Annex X is empty).

Procedure	Suggested solutions
What do the standards say?	In order to ensure that the operation of an installation does not deteriorate the quality of soil and groundwater, it is necessary to establish, through a baseline report, the state of soil and groundwater contamination. The baseline report should be a practical tool that permits, as far as possible, a quantified comparison between the state of the site described in that report and the state of the site upon definitive cessation of activities, in order to ascertain whether a significant increase in pollution of soil or groundwater has taken place. The baseline report should, therefore, contain information making use of existing data on soil and groundwater measurements and historical data related to past uses of the site.
Recommendation	Inclusion of the definition of "not lead to any deterioration" from the directive 2010/75/EU in DNSH criteria.

Source: Own illustration

Challenge No. 2: "… **Appropriate measures**…"

Table 14: DNSH Water Emissions Challenge No. 2 (Appropriate measures)

Procedure	Suggested solutions
How should the challenges be tackled?	Description of appropriate measures.
Are there already standards that can be used?	GRI (306) Waste water and waste
What do the standards say?	The reporting organization must disclose the following information: a. The total number and total volume of recorded significant spills of harmful substances. b. The following additional information for each spill of harmful substances reported in the organization's financial reports: i. Location of the spill; ii. The volume of the spill; iii. harmful substance spill categorized by: Oil spill (land or water surfaces), Fuel spill (land or water surfaces), Waste spill (land or water surfaces), Chemical spill (primarily land or water surfaces), and I15Other (to be specified by the organization). c. Effects of significant spills of harmful substances
Recommendation	Inclusion of the description of measures from the GRI.

Source: Own illustration

Challenge No. 3: "... **Regular surveillance** ..."

Table 15: DNSH Water Emissions Challenge No. 3 (Regular surveillance)

Procedure	Suggested solutions
How should the challenges be tackled?	More precise description of the surveillance and specification of regular intervals for surveillance.
Are there already standards that can be used?	Directive 2010/75/EU, paragraph (23) and German adoption of the directive 2006/118/EC (GrwV), Appendix 4
What do the standards say?	Directive 2010/75/EU, paragraph (23): It is necessary to ensure that the operation of an installation does not lead to a deterioration of the quality of soil and groundwater. Permit conditions should, therefore, include appropriate measures to prevent emissions to soil and groundwater and regular surveillance of those measures to avoid leaks, spills, incidents or accidents occurring during the use of equipment and during storage. In order to detect possible soil and groundwater pollution at an early stage and, therefore, to take appropriate corrective measures before the pollution spreads, the monitoring of soil and groundwater for relevant hazardous substances is also necessary. When determining the frequency of monitoring, the type of prevention measures and the extent and occurrence of their surveillance may be considered. German adoption of the directive 2006/118/EC (GrwV), Appendix 4. Paragraph 3 3.4.: Operational surveillance shall be carried out at intervals sufficient to identify the effects of the stresses but at least once a year.
Recommendation	Inclusion of the requirements for surveillance from directive 2010/75/EU or reference to this directive. In addition, a minimum interval for surveillance should be specified. In line with the German adoption of the directive 2006/118/EC (GrwV), this could be at least once a year.

Source: Own illustration

b) Appendix B

1. Overview

Table 16: DNSH Appendix B overview: Sectors and Activities

Environmental objective	Sector	Activity/Activities
Appears in all environmental objectives that meet DNSH criteria for water, so they are not listed individually here.	see Table 8	Almost all activities that meet DNSH criteria for water are listed here, so they are not listed individually here.

Source: Own illustration

Table 17: DNSH Appendix B Indicators

Kind of Indicators	Description
DNSH	Environmental degradation risks related to preserving water quality and avoiding water stress are identified and addressed with the aim of achieving good water status and good ecological potential as defined in Article 2, points (22) and (23), of Regulation (EU) 2020/852, in accordance with Directive 2000/60/EC and a water use and protection management plan, developed thereunder for the potentially affected water body or bodies, in consultation with relevant stakeholders. Where an Environmental Impact Assessment is carried out in accordance with Directive 2011/92/EU and includes an assessment of the impact on water in accordance with Directive 2000/60/EC, no additional assessment of impact on water is required, provided the risks identified have been addressed.
Corresponding PAI	Emissions to water (mandatory): Tonnes of emissions to water generated by investee companies per million EUR invested, expressed as a weighted average.

Source: Own illustration

2. Challenge Analysis

Table 18: DNSH Appendix B Challenge Analysis

Challenge No.	Challenge category/ Specific challenge	Reason
1	Reference to the WFD	The WFD is a very complex set of rules that is difficult for companies to understand. Figure 3 shows the path that must be followed to find the priority substances. This makes it difficult for companies to find out what sectors need to report on what.
2	Appendix X is empty / Reference is missing	Appendix B refers to the WFD, where the priority substances are also relevant. In the WDF, Appendix X is supposed to list the priority substances, however, this Annex is amended by Directive 2013/39/EU. As this amendment is not directly referenced in the DNSH criteria, accessing the relevant information on priority substances is difficult.
3	No Threshold/ Definition of the water body status	The definition of the water body status is important for the processing of Annex B. However, in order to avoid a deterioration of the water body, companies must know, among other things, the current status of the water body into which they discharge the wastewater. However, there are currently no globally or even EU-wide standardized databases or portals where this information can be easily obtained.

Source: Own illustration

3. Suggested solutions

Challenge No. 1: Reference to the WFD

Table 19: DNSH Appendix B Challenge No. 1 (Reference to the WFD)

Procedure	Suggested solutions
How should the challenges be tackled?	Guidelines for the application of the WFD
Are there already standards that can be used?	N/A
Recommendation	To improve the applicability of the WFD, it is important to ensure that companies are able to make appropriate use of this quite complex set of rules. For this reason, guidelines should be drawn up for the Water Framework Directive, in which companies can find the relevant passages in the regulation. These guidelines should show which parts are relevant for which sectors and what needs to be considered in reporting.

Source: Own illustration

Challenge No. 2: Appendix X is empty

Table 20: DNSH Appendix B Challenge No. 2 (Appendix X is empty / Reference is missing)

Procedure	Suggested solutions
How should the challenges be tackled?	Clear and traceable reference to the applicable list of priority substances, including relevant amendments.
Are there already standards that can be used?	There are already guidances concerning Appendix X usage that can be built on (for example https://www.subsportplus.eu/EN/Substances/individual-substance-lists/6_WFD_Priority_Substances).
Recommendation	Integrate guidance (links) concerning priority substances directly to the DNSH description.

Source: Own illustration

Challenge No. 3: Definition of the water body status

Table 21: DNSH Appendix B Challenge No. 3 (Definition of the water body status)

Procedure	Suggested solutions
How should the challenges be tackled?	An accessible database where companies can find the water status of local water bodies
Are there already standards that can be used?	Freshwater Information System for Freshwater Europe (EEA)
Recommendation	To enable companies to assess whether they are contributing to a deterioration in the status of water bodies, they need to know what the current water status is. For this purpose, there should ideally be a global overview database in which companies can obtain information on the status of water bodies. Depending on the status of the water body, measures to prevent the deterioration of the water body can vary greatly. With the 'Freshwater Information System for Freshwater Europe', a similar database already exists for Europe. This database is maintained by the European Environment Agency and provides information and data on the state of rivers, lakes, groundwater, the pressures affecting them, and the measures taken to protect and conserve the aquatic environment. Since the application of DNSH criteria and PAI indicators is taking place globally, it is important to get this data for countries outside Europe as well.

Source: Own illustration

A.2.2 Environmental objective: CCM

c) Biofuels

1. Overview

Table 22: DNSH Biofuels overview: Sectors and Activities

Environmental objective	Sector	Activity/Activities
Climate Change Mitigation	Energy	4.8 Electricity generation from bioenergy, 4.20. Cogeneration of heat/cool and power from bioenergy, and 4.24 Production of heat/cool from bioenergy

Source: Own illustration

Table 23: DNSH Biofuels Indicators

Kind of Indicators	Description
DNSH	The activity meets the requirements relating to sustainability, greenhouse gas emission savings and efficiency laid down in Article 29 of **Directive 2018/2001.**
Corresponding PAI	Mandatory PAI:

Kind of Indicators	Description
	Greenhouse Gas (GHG) emissions: GHG differentiated by Scope 1, 2, 3 and total GHG emissions

Source: Own illustration

2. Challenge Analysis

Table 24: DNSH Biofuels Challenge Analysis

Challenge-No.	Challenge Category /Specific challenge	Reason
1	Reference to Directive 2018/2001.	Directive 2018/2001 (Renewable Energy Directive) has been amended (RED III). The amendments will come into force in May 2025.
2	International applicability	Reference to EU Directive, which is why international applicability outside the EU is difficult.
3	Fit with PAI indicator	No immediate compatibility between DNSH criteria and PAI indicator: The DNSH criteria is based on sustainability and greenhouse gas emission savings criteria in RED. The GHG emission savings methodology focuses on a percentage reduction compared to a fossil fuel comparator, instead of reporting Scope 1, 2, and 3 data (as included by the PAI indicator). In its current version, the GHG emission savings target is lower than the target for substantial contribution. In other cases, there is the option of calculating the total Emissions (sum of scope 1 to 3) with a formula shown in section 4.3.1 in this report) on the basis of data used for the DNSH criteria.

Source: Own illustration

3. Suggested solutions

Challenge No. 1: Reference to Directive 2018/2001

Table 25: DNSH Biofuels Challenge No. 1 (Reference to Directive 2018/2001)

Procedure	Suggested solutions
How should the challenges be tackled?	Keeping the reference to Directive 2018/2001 while ensuring that the amended directive, coming into force in May 2025, included a sufficient level of ambition to ensure DNSH.

Procedure	Suggested solutions
Are there already standards that can be used?	N/A
Recommendation	We recommend to continue referencing Article 29 of Directive 2018/2001, as it is the central legislation in the EU concerning biofuels. In light of the amendments coming into force in May 2025, it should be checked if the amended Directive 2018/2001 ensures a sufficient level of ambition for DNSH. Currently, the criteria do not adequately address problems concerning carbon payback times (meaning the time it takes to reabsorb GHG emissions set free by using biomass for energy production). Hence, additional criteria should be added, in particular an exclusion of stumps and roots to produce energy.

Source: Own illustration

Challenge No. 2: International applicability

Table 26: DNSH Biofuels Challenge No. 2 (International applicability)

Procedure	Suggested solutions
How should the challenges be tackled?	Streamline DNSH with existing international standards concerning bioenergy with the same level of ambition.
Are there already standards that can be used?	N/A
Recommendation	Since no comparable international standards concerning bioenergy with the same level of ambition were identified, the criteria should continue to reference article 29 of Directive 2018/2001. Additional criteria should be included to address international environmental issues concerning biofuels.

Source: Own illustration

Challenge No. 3: Compatibility between PAI indicators and DNSH criteria

Table 27: DNSH Biofuels Challenge No. 3 (Compatibility between PAI indicators and DNSH criteria)

Procedure	Suggested solutions
How should the challenges be tackled?	Consider how the GHG emission savings methodology references in the DNSH criteria can be used to inform the PAI indicator.
Are there already standards that can be used?	N/A

Procedure	Suggested solutions
Recommendation	An adjustment of DNSH and PAI would be complex because there are still more differences in the indicators (e.g. GHG emissions are not shown separately by the scope for the DNSH criterion, as would be necessary for the PAI indicator; in addition, specific values (per unit of energy) for DNSH criteria are compared to absolute values for the PAI indicator). An alignment would break through the previous basic logic of the PAI indicator or the DNSH criteria. Therefore, instead of aligning the indicators, we recommend taking the information for the PAI indicator from the companies' sustainability reporting with regard to GHG emissions for Scope 1, 2 and 3. According to the ESRS, these are largely available in the context of the CSRD. These data also have the advantage that it is aimed at company level, which is also necessary for the PAI indicator. In other cases there is the option of calculating the total Emissions (sum of scope 1 to 3) with a formula shown in section 4.3.1 in this report) on basis of data used for this DNSH criteria.

Source: Own illustration

a) Energy Efficiency

1. Overview

Table 28: DNSH Energy Efficiency overview: Sectors and Activities

Environmental objective	Sector	Activity/Activities
Pollution prevention and control[42]	Energy	4.14. Transmission and distribution networks for renewable and low-carbon gases und 4.15. District heating/cooling distribution

Source: Own illustration

Table 29: DNSH Energy Efficiency Indicators

Kind of Indicators	Description
DNSH	Fans, compressors, pumps and other equipment used which is covered by **Directive 2009/125/EC** comply, where relevant, with the top class requirements of the energy label, and otherwise comply with implementing regulations under that Directive and represent the best available technology.[43]
Corresponding PAI	Mandatory PAI: Energy consumption intensity per high impact climate sector[44]: is the ratio of energy consumption per unit of activity, output, or other metric of the investee to the investee's total energy consumption of that investee company

[42] Although the DNSH criterion is listed under the environmental objective "Pollution prevention and control", its content is relevant for the environmental objective "climate change mitigation", which is why we analyze it for the environmental objective "climate change mitigation".

[43] European Commission (2021), p. 239

[44] The activities to which the DNSH criteria apply here belong to the high-impact climate sector according to the SFDR because of Section D (NACE 35.22) and H (NACE 49.5) of Annex I to Regulation (EC) No 1893/2006 of the European Parliament and of the Council, to which Annex I of the SFDR refers for definition.

Source: Own illustration

2. Challenge Analysis

Table 30: DNSH Energy Efficiency Challenge Analysis

ChallengeNo.	Challenge Category /Specific challenge	Reason
1	Listing under Pollution prevention and control.	The DNSH criteria is listed under environmental objective Pollution prevention and control. However, energy consumption is relevant to the environmental objective of CCM.
2	Reference to Directive 2009/125/EC.	The Directive 2009/125/EC will be replaced by (EU) 2024/1781 from July 18, 2024.
3	International applicability	Reference to EU Directive, which is why international applicability outside the EU is difficult.
4	Fit with PAI indicator	No compatibility between DNSH criteria and PAI indicator: The DNSH criteria is based on the class of the energy label, while the PAI indicator is based on the energy consumption intensity per unit of activity.

Source: Own illustration

3. Suggested solutions

Challenge No. 1: Listing under Pollution prevention and control.

Table 31: DNSH Energy Efficiency Challenge No. 1 (Listing under Pollution prevention and control)

Procedure	Suggested solutions
How should the challenges be tackled?	Include the DNSH criteria under the environmental objective of CCM.
Are there already standards that can be used?	N/A
Recommendation	The DNSH criteria for energy consumption should be listed under the environmental objective of CCM. Nevertheless, an additional reference to Directive (EU) 2024/1781 in a DNSH criteria under the environmental objective of pollution prevention and control is useful, since Directive (EU) 2024/1781 also refers to the presence of substances of concern, environmental impacts and similar issues.

Source: Own illustration

Challenge No. 2: Reference to the expired Directive 2009/125/EC

Table 32: DNSH Energy Efficiency Challenge No. 2 (Reference to the expired Directive 2009/125/EC)

Procedure	Suggested solutions
How should the challenges be tackled?	Reference to currently valid directives.
Are there already standards that can be used?	N/A
Recommendation	Although the new directive (EU) 2024/1781 does include transitional rules, we still recommend that the DNSH criteria directly refer to the currently valid directive (EU) 2024/1781.

Source: Own illustration

Challenge No. 3: International applicability

Table 33: DNSH Energy Efficiency Challenge No. 3 (International applicability)

Procedure	Suggested solutions
How should the challenges be tackled?	Reference to international electricity efficiency requirements.
Are there already standards that can be used?	No international electricity efficiency requirements could be found.
Recommendation	Since no international electricity efficiency requirements were found, reference should be made to the currently valid directive (EU) 2024/1781 and the corresponding ecodesign requirements for energy-related products (these contain specific thresholds).

Source: Own illustration

Challenge No. 4: Compatibility between PAI indicators and DNSH criteria

Table 34: DNSH Energy Efficiency Challenge No. 4 (Compatibility between PAI indicators and DNSH criteria)

Procedure	Suggested solutions
How should the challenges be tackled?	Consider whether the DNSH criteria need to be adapted to ensure compatibility between PAI indicators and DNSH criteria.

Procedure	Suggested solutions
Are there already standards that can be used?	N/A
Recommendation	Since the energy consumption and the financial information required for the PAI Indicator can be taken from the CSRD reporting of the sector-agnostic ESRS, we see no need to adjust this DNSH criteria.

Source: Own illustration

B Other preselected DNSH indicators not proceeded further

In this appendix, we document which other DNSH indicators were selected for improvement initially, but which were not processed further for the reasons listed here.

Table 35: Excluded DNSH No. 1

Topic	Description
Activity/Activities	3.4. Maintenance of roads and motorways
Environmental objective	CCM
DNSH	A traffic congestion mitigation plan to be implemented during the maintenance works is presented.
Problem	process governance (although a technical process with more technical details would be possible)
Reason for exclusion	It currently has no political relevance because of the low absolute impact.

Source: Own illustration

Table 36: Excluded DNSH No. 2

Topic	Description
Activity/Activities	4.5. Electricity generation from hydropower, 4.6. Electricity generation from geothermal energy, 4.7. Electricity generation from renewable non-fossil gaseous and liquid fuels, 4.18. Cogeneration of heat/cool and power from geothermal energy, 4.19. Cogeneration of heat/cool and power from renewable non-fossil gaseous and liquid fuel, 4.22. Production of heat/cool from geothermal energy, 4.23. Production of heat/cool from renewable non-fossil gaseous and liquid fuels
Environmental objective	CCM
DNSH	The direct GHG emissions of the activity are lower than 270 g CO 2 e/kWh.
Challenge	The DNSH criteria only addresses direct GHG emissions, but not the indirect emissions as the corresponding PAI, and for some activities it would be reasonable to also consider indirect GHG emissions (especially upstream).
Reason for exclusion	DNSH criteria has a threshold (even if this is only for direct GHG emissions) and therefore the ambition level is higher than for other DNSH criteria. Indirect GHG emissions depend heavily on the activity, and not all activities have relevant indirect GHG emissions. In addition, it will be difficult to find scientifically based data for an exact threshold for indirect GHG emissions for all activities.

Source: Own illustration

Table 37: Excluded DNSH No. 3

Topic	Description
Activity/Activities	4.3. Electricity generation from wind power, 4.4. Electricity generation from ocean energy technologies
Environmental objective	Water
DNSH	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 of the European Parliament and of the Council, requiring that the appropriate measures are taken to prevent or mitigate impacts in relation to that Directive's Descriptor (Noise/Energy), laid down in Annex I to that Directive, and as set out in Commission Decision (EU) 2017/848 in relation to the relevant criteria and methodological standards for that descriptor.
Challenge	No threshold for when the achievement of good environmental status is impaired. No description of suitable measures to avoid or reduce impacts in relation to the descriptor (noise/energy).
Reason for exclusion	No threshold value has yet been defined in science. Currently, we can only recommend methods for noise reduction, but these methods all have different disadvantages, and new methods can always come onto the market

Source: Own illustration