

Transportation, Storage and Mail (CNAE H)

BRAZILIAN SUSTAINABLE TAXONOMY

SECRETARIAT OF
ECONOMIC POLICY

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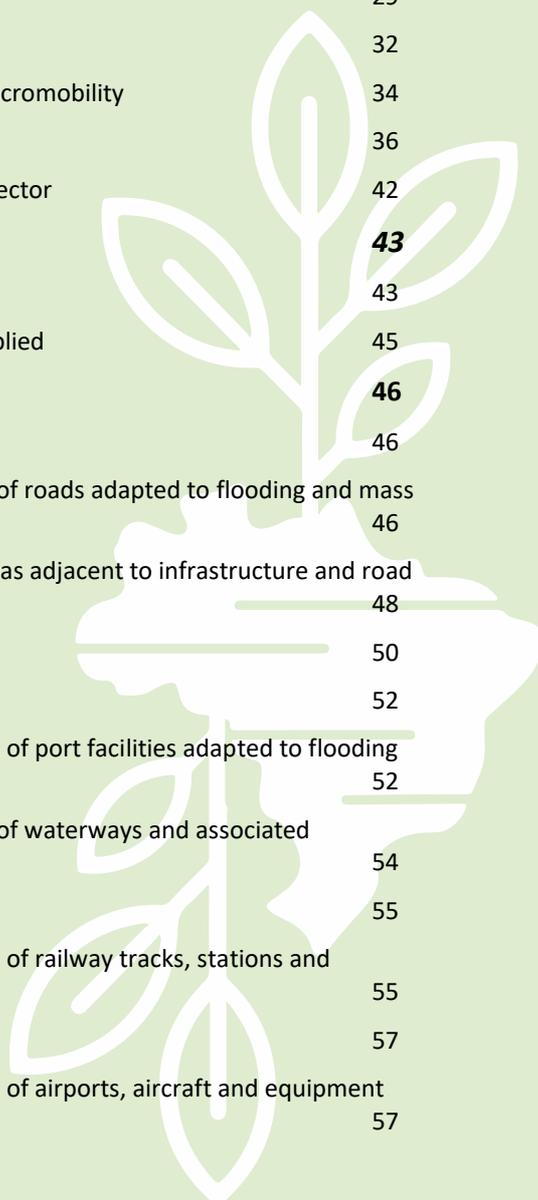
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Transportation, storage and mail (CNAE H)

Sector overview

The transport sector is strategic for Brazil to achieve its climate and environmental objectives, holding a medium-high priority in the transition to a low-carbon economy. In 2023, the sector accounted for 5.2% of the country's gross domestic product (GDP), playing a vital role in the economy by enabling national and international connectivity and trade. In addition, transport activities contribute to various sustainable development goals (SDGs) of the 2030 Agenda for Sustainable Development, such as SDG 7 (affordable and clean energy), SDG 9 (industry, innovation and infrastructure), SDG 11 (sustainable cities and communities), SDG 13 (climate action), SDG 14 (life below water) and SDG 15 (life on land).

Article 6 of the Brazilian Constitution states: “*Education, health, food, work, housing, transportation, leisure, security, social security, maternity and childhood protection, assistance to the destitute, in the form of this Constitution, are social rights*”. In this way, ensuring efficient and resilient transportation not only promotes logistical integration but also fulfills a fundamental commitment to citizenship and social well-being.

However, the transportation sector is a major emitter of greenhouse gas (GHG) in the energy sector, accounting for around 10.6% of national emissions, with an increase of 55% between 1990 and 2022, according to estimates in the Report of the National Inventory of Anthropogenic Emissions by Sources and Removals by Sinks of Greenhouse Gases in Brazil. Road transport accounts for 92% of ktCO₂e emissions, with heavy vehicles (57%) and cars (34%) standing out (MCTI, 2024). Energy consumption in the transport sector is high, dominated by diesel (43.4%) and gasoline (27.8%), as opposed to the low share of other fuels (17.3% - ethanol, 5.2% biodiesel, 3.5% - QAV, 1.8% - natural gas, and 1.0% - other [fuel oil and electricity]), according to the 2024 National Energy Balance.

Brazil's cargo transportation matrix is dependent on road transport (67.6%), followed by rail (21.5%) and water (10.6%), according to the National Logistics Plan (PNL 2025) (EPL, 2021). The high dependence on road transport poses a significant challenge for reducing GHG emissions and for the sustainability of the sector. Although rail transport has a smaller share compared to road transport, it has shown growth in recent years, especially in the shipment of minerals and grains. In addition, river, lake and sea transport is still underutilized, even though Brazil has an extensive network of navigable rivers and lakes and a long coastline, which represents an opportunity to diversify and decarbonize transport options.

The sector faces several risks related to climate change. These risks include an increase in the frequency and intensity of extreme weather events, such as floods and landslides, which could disrupt the main transportation corridors. In addition, heat waves and prolonged droughts can affect road and rail infrastructure, reduce river navigability, and disrupt air transport, negatively impacting transport efficiency, safety and connectivity. Around three out of four Brazilians — 73% of the population — live in municipalities that are more susceptible to floods, flash floods or landslides (Presidência da República, 2023).

According to the National Center for Natural Disasters (*Centro Nacional de Desastres Naturais*) (CEMADEN/MCTI), Brazil has recorded the highest number of hydrological disasters¹ since the center was established in 2011. A total of 1,161 disaster events were recorded. The most affected areas were the southern region of the country, the municipalities in the metropolitan regions of the main capitals, the Maranhão Valley, the southeast of Pará and the riverside municipalities along the Amazon River (Governo Federal do Brasil, 2024).²

Brazil has achieved positive results in decarbonizing the transport sector through the introduction of more efficient vehicles, the promotion of electric vehicles and the regulation, production and use of low-carbon fuels. However, the modal fleet is still largely dependent on traditional internal combustion engines. The country has a robust regulatory framework to regulate GHG emissions and promote sustainability in the transport sector. The National Policy on Climate Change Law (Law No. 12187/2009) establishes targets for reducing GHG emissions and includes sectoral plans for mitigating and adapting to climate change in transport infrastructure, urban public transport and freight and passenger transport systems.

In addition, the Vehicle Emissions Control Program (*Programa de Controle de Emissões Veiculares*, PROCONVE)³ regulates air pollutant emissions from motor vehicles, specifically for road transport, as does the Brazilian Vehicle Labeling Program, which promotes stricter fuel efficiency standards and clean technologies. In this context, the Federal Government launched a new Growth Acceleration Program (PAC) for public transport fleet renewal, providing, in the first stage, more than 5,000 buses, including electric buses, Emissions from heavy-duty vehicles (EURO VI) buses and various lines of financing for sustainable mobility made available by the Brazilian Development Bank (*Banco Nacional do Desenvolvimento Econômico e Social*, BNDES).

The Sectoral Plan for Urban Transport and Mobility to Mitigate and Adapt to Climate Change (*Plano Setorial de Transporte e Mobilidade Urbana para Mitigação e Adaptação à Mudança do Clima*, PSTM), published in 2013, aims to contribute to the mitigation of GHG emissions in the sector, through initiatives that lead to the expansion of freight transport infrastructure and the use of more energy-efficient modes. In 2021, the New Railway Framework introduced new mechanisms to promote the construction and operation of railroads for modal shift, with an emphasis on granting authorizations.

In the urban environment, cities have been encouraging active mobility modes, via, for example, the National Strategy for the Promotion of Bicycle Mobility (Enabici, 2023), and the publication of Law 13724/2018, which establishes the Bicycle Brazil Program. In addition, in 2015, Constitutional Amendment 90 was enacted, which included transportation among the constitutional social rights, changing the legal and social paradigm of this public service.

RenovaBio, part of the National Biofuels Policy, was launched in 2017, with the aim of supporting Brazil's Nationally Determined Contribution (NDC) commitments under the Paris Agreement. This policy includes Life Cycle Assessment (LCA) mechanisms, commercialization and predictability of the fuel market, support for national energy security and reduction of GHG emissions (Grangeia, 2022). The policy also encourages the production and use of biofuels, integrating the transport sector into the country's decarbonization strategy. In September 2024, Congress approved the Fuel for the Future Bill (PL/2020), which was sanctioned by the Presidency of the Republic and converted into Law No. 14.993/2024, which provides for the promotion of sustainable low-carbon mobility and the capture and geological storage of carbon dioxide, as well as instituting various decarbonization programs such as the National Sustainable

¹ 716 disaster events (61.7% of total disaster events) were associated with hydrological events, such as river overflows, and 445 of geological origin, such as landslides. The number exceeds the records for 2022 and 2020. There were 132 deaths associated with rain-related events, 9,263 people were injured or sick and 74,000 were left homeless. In total, 524,000 people were left homeless (Governo Federal do Brasil, 2024).

² In terms of material damage, the system indicates more than R\$5 billion in infrastructure works, public facilities and housing units. The economic losses reported by the system amount to almost R\$25 billion, combining the public and private sectors, with direct and indirect impacts on the transportation sector (Governo Federal do Brasil, 2024).

³ According to the sole paragraph of Article 11 of Law 12187/2009, general transport was not included, but urban public transport and interstate freight and passenger transport modal systems were. PROCONVE is specific to road transport, as defined in the Brazilian Traffic Code (CTB).

Aviation Fuel Program (ProBioQAV), the National Green Diesel Program (*Programa Nacional de Diesel Verde*, PNDV) and the National Program for Decarbonization of Natural Gas Producers and Importers and Incentives for Biomethane.

Law No. 14801/2024 established infrastructure debentures and changed the rules for issuing incentivized debentures, created by Law No. 12431/2011. On March 26, 2024, Decree No. 11964 was published, regulating the criteria and conditions for issuing both types of debentures. These debentures are a key mechanism for financing projects in line with climate change targets. The legislation establishes income tax rules for individuals and organizations that invest in incentivized debentures, as well as for special purpose organizations, concessionaires, permit holders, authorizers or lessees that issue infrastructure debentures. In these cases, there is provision for the federal government to grant tax benefits to encourage the use of such instruments to finance private investment in infrastructure projects that are aligned with the sustainability criteria defined by the government⁴ These projects cover crucial sectors such as resilient roads, railroads and urban mobility, as well as the energy and mining sectors, all aimed at building a more sustainable and climate-resilient future for Brazil.

In line with Guideline 2 of the Ministry of Transport's Sustainability Guidelines, which aims to promote the inclusion of climate change issues in transport infrastructure, the "AdaptaVias" study stands out as a national technical reference. Developed by the Ministry of Transport, in cooperation with *Deutsche Gesellschaft für Internationale Zusammenarbeit* (GIZ) and COPPE/UFRJ, AdaptaVias is the first systematic survey of climate impacts and risks on federal road and rail transport infrastructure, considering both existing and projected assets. The study generated climate risk indices based on Hazards, vulnerabilities and exposures, supporting resilient planning and the prioritization of adaptation measures. The methodology adopted was based on the Intergovernmental Panel on Climate Change (IPCC) and AdaptaBrasil/Ministry of Science, Technology and Innovation (*Ministério de Ciência, Tecnologia e Inovação*, MCTI), integrating scientific evidence with national georeferenced data and participatory consultations with public bodies and infrastructure operators.

Promoting climate resilience in the land transport sector requires an integrated approach between the different modes. The transition to a more multimodal transportation matrix, with an emphasis on increasing the share of railroads, inland waterways and cabotage to replace or support vulnerable road routes, can reduce emissions, logistics costs and exposure to climate risks. Projects that promote multimodality in a structured and planned way, with a focus on strategic logistics corridors, should be encouraged as eligible measures for adaptation and mitigation, contributing to the diversification of the transport system and reducing dependence on infrastructures that are more susceptible to

⁴ On July 17, 2024, the Ministry of Transport published Ordinance 689, which regulates requirements and procedures for framing and monitoring priority investment projects in the road and rail transport infrastructure sector for the purposes of issuing incentivized debentures and infrastructure debentures, defining that investment projects or the contracts to which they are associated must provide for investment in mitigating GHG emissions, energy transition or the implementation and adaptation of infrastructure for climate resilience, with a view to adapting to climate change; and mechanisms for managing the impact of infrastructure on affected peoples and communities. Along the same lines, the MPOR issued Ordinance No. 419, of August 29, 2024, which "Disciplines procedures, criteria and complementary conditions for framing, monitoring and supervising investment projects considered to be a priority in the logistics and transport sector under the competence of the Ministry of Ports and Airports, for the purposes of issuing incentivized debentures and infrastructure debentures dealt with in Law No. 12431, of June 24, 2011, and Law No. 14801, of January 9, 2024, regulated by Decree No. 11964, of March 26, 2024." Likewise, the Ministry of Transport published Ordinance No. 689, of July 17, 2024, establishing procedures and requirements for priority investment projects classification in the road and rail sectors, with a view to issuing incentivized and infrastructure debentures. In the urban mobility sector, the Ministry of Cities drafted the Ordinance No. 3365, of December 28, 2021, for urban mobility, to define the rules for debentures in this sector, and it is currently under public consultation. For the natural gas and biofuel sectors, the types of infrastructure projects that can be classified as priorities and the procedures for classification are regulated in Normative Ordinance GM/Ministry of Mines and Energy (*Ministério de Minas e Energia*, MME) No. 93, of December 10, 2024.

extreme events. It is also necessary to improve urban planning and the development of the public transport network, which not only reduces greenhouse gas (GHG) emissions, but also improves the quality of life in cities.

The transport sector is essential for decarbonizing the Brazilian economy, especially through the promotion of low-carbon fuels, fleet electrification, energy efficiency gains and resilience of transport infrastructure. Although it faces significant challenges, the opportunities to move towards a more sustainable and resilient transport system are considerable and aligned with the country's development and sustainability goals.

Prioritization of activities

Objective 1 — Climate change mitigation: The prioritization of economic activities in the Brazilian Sustainable Taxonomy (TSB) Action Plan sectors was carried out through a quantitative and qualitative analysis, considering available data. The indicators used for this evaluation include a five-year historical series of the following indicators: 1) GDP, employment and the Economic Complexity Index, which measure the social and economic relevance of activities; 2) Greenhouse Gas (GHG) emissions and other climate indicators based on scenarios from the Intergovernmental Panel on Climate Change (IPCC) and the International Energy Agency (IEA), which assess the potential for climate change mitigation; 3) the existence of economic activities in other taxonomies, which favors interoperability; and 4) an expert assessment, which considers climate priorities and sector regulations, reflecting the importance in the Brazilian context. The data were normalized and scored, with different weights according to sectoral importance, to prioritize activities according to a standardized system.

Objective 2 — Climate change adaptation: The methodology for selecting activities and measures is based on three main steps: identifying environmental and climate impacts by sector, proposing specific activities and investments that address these impacts, and classifying them based on established eligibility criteria. This process is guided by alignment with the goals and priorities of the National Climate Adaptation Plan, by the support of scientific evidence that demonstrates its positive contribution to climate adaptation, by the ambition to strengthen the resilience of sectors and activities in the face of the impacts of climate change and by interoperability with other international and regional taxonomies. TSB includes adapted and enabling activities and measures. The metrics for determining the eligibility of adaptation activities or measures in all sectors involved the following options: quantitative/verifiable metrics to demonstrate impact, a list of qualitative requirements and checks, a list of eligible activities and measures, and vulnerability assessments.

Public consultation updates and considerations for future editions

The preliminary proposals for the first edition of the TSB were submitted for public consultation between November 16, 2024 and March 31, 2025, structured in two stages of disclosure. The first stage of the consultation included introductory taxonomy documents, while the second stage provided technical and thematic chapters, with technical criteria for mitigation and adaptation, sectoral safeguards and adjustments to economic activities. Civil society was able to contribute freely throughout the process.

This technical chapter incorporates the contributions received and the adjustments made during the public consultation. Below are specific considerations for future updates:

- Preparation of an implementation guide to direct the application of the Brazilian Sustainable Taxonomy criteria by stakeholders;

- In its implementation, consideration should be given to whether the TSB criteria can be differentiated for small and medium-sized organizations, and how these criteria will impact these categories of organizations;
- Updating the criteria, especially for low-carbon fuels, in line with technological developments and the availability of these fuels on the domestic market in the future, without losing sight of the mitigation objective.

Objective 1 — Climate change mitigation

Categories of eligible activities

- H1: Rail and metro transport
- H2: Road passenger transport
- H3: Private and public light motor vehicles and light commercial vehicles
- H4: Road freight transport
- H5: Cabotage and long-distance maritime transport
- H6: Navigation support
- H7: Inland waterway transport and other water transport
- H8: Air transport
- H9: Operation of personal mobility devices, bicycle logistics/ micromobility
- H10: Transport infrastructure
- H11: D18: Research, development and innovation activities for the sector

Sector-specific activities

H1: Rail and metro transport

CNAEs:

- 49.1: Rail and metro transport
- 49.11-6: Rail freight transportation
- 49.12-4: Metro passenger transport

Description:

This activity encompasses a series of metro and rail transportation services — municipal, intercity, metropolitan and interstate — and rail passenger transportation for short and long distances, including cargo transportation. It also encompasses metro systems for urban rapid transit and light rail services such as trams, light transport units (LTUs), and light diesel units (LDUs), including light rail vehicles (LRVs) and monorails. This category also includes the rental of railway infrastructure for operational use. For TSB purposes, this activity also covers the purchase, financing, rental, leasing and operation of passenger and freight transport using railway and metro rolling stock.

Examples of activities:

- Purchase and rental of rolling stock.
- Maintenance of rolling stock.
- Purchase and retrofitting of subway cars and trains.

- Purchase of low-carbon fuels⁵ for locomotive operation.
- Retrofitting locomotives.

Out-of-scope activities:

- Railway and metro transport infrastructure (stations, operating systems and train tracks) (covered in activity H10).
- Activities of rail freight terminals and other ancillary activities (covered in activity H10).
- Transportation by tourist trains, cable cars or similar (covered in the Social Services Sector chapter, Tourism section).

Substantial contribution to Objective 1 — Climate change mitigation

To qualify as a substantial contribution, the activity must meet any of the following criteria:

- A. Urban passenger rail rolling stock or locomotives with zero direct emissions in use for passenger transport directly meet the substantial contribution criteria.
- B. Rolling stock⁶ (regional, interstate and intercity), whether freight or passenger, that uses low-carbon fuels above the percentage required by current Brazilian law, or alternatives that can be proven to reduce emissions, guaranteed by technological design or continuous monitoring and verification by third parties, meets the substantial contribution criteria.
- C. Transition limit: any rolling stock intended for intercity, regional and interstate transport, whether for freight or passengers, meets the substantial contribution criteria, until 2045. After this period, they must meet criterion A.
- D. The retrofitting or modification of the fleet's propulsion system meets the substantial contribution criteria, provided that it meets the conditions specified in criterion C until 2045, and after that date meets criteria A or B.

Do no significant harm

The DNSH criteria applicable to this activity are based on the adoption of complementary criteria to the substantial contribution criteria, to ensure that their implementation does not cause adverse impacts on TSB's other climate, environmental, and socio-economic objectives.

⁵ Low-carbon fuel: liquid or gaseous fuel of non-fossil origin that, in a life-cycle analysis from well-to-wheel, has significantly lower emissions than the fossil equivalent. The well-to-wheel or well-to-wake life cycle is the quantitative analysis of greenhouse gas emissions that originate from the natural resource extraction phase, through the production and distribution of the energy source, to its use in light and heavy passenger and commercial vehicles. These include, but are not limited to: ethanol, biodiesel, biogas/biomethane, low-carbon hydrogen, green diesel and e-fuels. All low-carbon fuels purchased under this activity must comply with the technical criteria set out in CNAE C – Manufacturing Industry (Production of biomass and biofuels) activity of the TSB.

⁶ Rolling stock is made up of traction material, passenger cars, freight wagons, animals, luggage, etc., according to the DNIT Glossary of Railway Terms concept.

Do no significant harm (to any of the following objectives):

Climate change adaptation	<ul style="list-style-type: none"> N/A
Protection and restoration of biodiversity and ecosystems	<ul style="list-style-type: none"> N/A
Conservation and sustainable management and use of soil and forests	<ul style="list-style-type: none"> N/A
Sustainable use and protection of water and marine resources	<ul style="list-style-type: none"> Establish an operation and maintenance plan for locomotive and train cleaning in specifically designated areas, making rational use of water resources.
Transition to a circular economy	<ul style="list-style-type: none"> Have a management plan for using and reusing the locomotive that is withdrawn from circulation, in accordance with the applicable guidelines of the National Circular Economy Strategy (Decree No. 12082, of June 27, 2024). In the case of battery-powered vehicles, a proposal must be presented as to what will be done to ensure that the battery is properly disposed of at the end of its useful life (e.g., recycling, reuse or final waste disposal). The proposal must include the name of at least one organization that provides this service. If the battery's useful life ends during the financing period, the legal entity must prove that it has been properly disposed of. Have certificates for the final disposal of solid waste generated throughout the vehicle management process, whether during maintenance or decommissioning, detailing the type of treatment applied according to the waste type.
Pollution prevention and control	<ul style="list-style-type: none"> The locomotives to be purchased or used must comply with indirect emission control requirements, taking into account: (i) the Maximum Age of Locomotive Fleet (IMFL), as contractually stipulated by National Land Transport Agency (<i>Agência Nacional de Transportes Terrestres</i>, ANTT); (ii) the compliance with the mandatory targets for adding biodiesel to the diesel sold, in accordance with Law No. 13033/2014, as amended by Law No. 14993/2024; (iii) and, when technically and economically feasible, prioritizing fuels with a lower sulfur content, such as Diesel S10. The use of locomotives powered by vehicular natural gas (NGV) must comply with up-to-date biomethane specifications, standards and mandates.

Do no significant harm (to any of the following objectives):

	<ul style="list-style-type: none"> • Draw up and implement a management plan for refrigerants used in cooling/refrigeration systems.
Reduction of socioeconomic inequalities, considering racial and gender aspects	<ul style="list-style-type: none"> • Annex A1: Do no significant harm criteria for socio-economic Objective 9.

H2: Road passenger transport**CNAEs:**

- 49.2: Road passenger transport

Description:

This activity covers collective road passenger transportation on permanent and fixed-route lines; the bus lines of the metro-bus integration network; chartering of buses for passenger transportation. For TSB purposes, this activity covers the purchase, financing, leasing, rental and operation of urban and interurban land passenger transport vehicles.

Examples of activities:

- Buying and renting buses for the public transport system in Brazilian cities.
- Purchase and rental of school buses.
- Buying and renting buses for interstate trips.
- Retrofitting of buses to improve efficiency and reduce fleet emissions.
- Purchase of low-carbon fuels for use in the existing fleet.

Substantial contribution to Objective 1 — Climate change mitigation

Collective road passenger transport activities qualify as substantially contributing to climate change mitigation when they meet one of the following criteria:

- A. Vehicles/fleet dedicated to collective road passenger transport must meet one of the following criteria:
 - i. Vehicles with zero direct emissions in use meet the substantial contribution criteria;
 - ii. Vehicles/vehicle fleets that use 100% low-carbon fuels, in any combination, such as biodiesel/green diesel, biodiesel/low-carbon hydrogen, among others, also meet the substantial contribution criteria.

- B.** Transition limit: Vehicles/fleet dedicated to collective road passenger transport must meet one of the following criteria;
- i. Vehicle/Fleet of vehicles made up entirely of hybrid buses that reduce fuel consumption by more than 20% compared to their non-hybrid equivalents that meets the substantial contribution criteria by 2040.
 - ii. Natural gas vehicle/Fleet meet the substantial contribution criterion, as long as they add biomethane in volume in an increasing proportion, starting at 1% in 2027 and increasing by 1% per year, reaching 24% in 2050. The operator must demonstrate through third-party verification or certification that they use the fuel for their activities. The annual addition must align with the National Natural Gas Decarbonization Program during its term.
- C.** Retrofitting: the transformation or replacement of polluting engines with less polluting ones meets the substantial contribution criteria, provided they meet the previous criteria.

Do no significant harm

The DNSH criteria applicable to this activity are based on the adoption of complementary criteria to the substantial contribution criteria, to ensure that their implementation does not cause adverse impacts on TSB's other climate, environmental, and socio-economic objectives.

Do no significant harm (to any of the following objectives):	
Climate change adaptation	<ul style="list-style-type: none"> • N/A
Protection and restoration of biodiversity and ecosystems	<ul style="list-style-type: none"> • N/A
Conservation and sustainable management and use of soil and forests	<ul style="list-style-type: none"> • N/A
Sustainable use and protection of water and marine resources	<ul style="list-style-type: none"> • Establish an operation and maintenance plan for vehicle cleaning in specifically designated areas, making rational use of water resources

Do no significant harm (to any of the following objectives):

<p>Transition to a circular economy</p>	<ul style="list-style-type: none"> • Have a management plan for using and reusing the fleet that is withdrawn from circulation, in accordance with the applicable guidelines of the National Circular Economy Strategy (Decree No. 12082, of June 27, 2024). • In the case of battery-powered vehicles, a proposal must be presented as to what will be done to ensure that the battery is properly disposed of at the end of its useful life (e.g., recycling, reuse or final waste disposal). The proposal must include the name of at least one organization that provides this service. If the battery's useful life ends during the financing period, the legal entity must prove that it has been properly disposed of. • Have certificates for the final disposal of solid waste generated throughout the vehicle management process, whether during maintenance or decommissioning, detailing the type of treatment applied according to the waste type.
<p>Pollution prevention and control</p>	<ul style="list-style-type: none"> • Comply with the permitted emission limits for unburned hydrocarbons (HC), carbon monoxide (CO), carbon dioxide (CO₂) and opacity (Op) for combustion motor vehicles. • Regarding direct exhaust emissions from internal combustion engines — nitrogen oxides (NO_x), total hydrocarbons (THC), non-methane hydrocarbons (NMHC), carbon monoxide (CO), particulate matter (PM) —, buses must comply with the current PROCONVE P-8 (EURO VI) standard or higher (according to the Brazilian government's requirement in the year of purchase). It includes mandatory verification of compliance with emission limits by means of field tests with on-board measuring devices, carried out during operational life.⁷ <i>Note:</i> some international standardization regulations that allow the verification of GHG emissions and noise in the transport sector are: International Organization for Standardization (<i>Organização Internacional para Padronização</i>, ISO) 13.040.50 — Emissions from mobile sources; ISO 362:2022 — Measurement of noise emitted by road vehicles during acceleration; ISO 28580:2018 — Method for measuring the rolling resistance of passenger car, truck and bus tires. • The use of NGV-powered vehicles must comply with up-to-date biomethane specifications and standards. • Draw up and implement a management plan for refrigerants used in cooling/refrigeration systems.
<p>Reduction of socio-economic inequalities, considering racial and gender aspects</p>	<ul style="list-style-type: none"> • Annex A1: Do no significant harm criteria for socio-economic Objective 9.

⁷ National Environmental Council (*Conselho Nacional do Meio Ambiente*, CONAMA) Resolution No. 490, of November 16, 2018, establishes the PROCONVE P8 Phase of requirements of the Program for the Control of Air Pollution from Motor Vehicles (PROCONVE), for the control of emissions of polluting gases and noise for new heavy-duty motor vehicles for road use, and makes other provisions. If this resolution is updated to require a higher standard, use the most up-to-date resolution.

H3: Private and public light motor vehicles and light commercial vehicles

CNAEs:

- 45.1: Motor vehicle trade
- 45.10-1/01: Retail sale of new cars, vans and utility vehicles
- 45.10-1/02: Wholesale of new cars, vans and utility vehicles
- 45.10-1/03: Retail sale of used cars, vans and utility vehicles
- 77.1: Hiring means of transport without a driver
- 49.30-2/01: Collective road passenger transportation, under charter, municipal
- 49.30-2/02: Intercity, interstate and international collective passenger road transportation under charter arrangements
- 49.39-0/02: Student transport services
- 52.11-7: Storage
- 52.12-5: Loading and unloading
- 53.20-2/01: Fast delivery services
- 80.12-9: Surveillance and private security activities
- 38.11-4: Collection of non-hazardous waste
- 38.10-3: Urban solid waste management
- 36.00-6: Water collection, treatment, and distribution
- 09.90-4/99: Support activities for mineral extraction, not previously specified

Description:

Cab services, car rental with driver, specialized transportation for public or private school students, and the retail sales and wholesale of new and used vehicles are activities included in this category. For TSB purposes, this activity also covers the purchase, financing and leasing of fleets of private or government vehicles.

Examples of activities:

- Renewal of ambulances, police cars or government transport vehicles;
- Renewal of the public service vehicles fleet, such as waste collection vehicles and water tankers
- Renewal of private vehicle fleet for multiple uses (car rental, taxis, off-road transportation, last-mile fast delivery service, among others), not included in activity H4.
- Purchase of low-carbon fuels in line with TSB criteria.

Out-of-scope activities:

- Individual private vehicles for personal use;
- Vehicles exclusively transporting fossil fuels or materials that are not aligned with CNAE B — Extractive Industries and CNAE A — Agriculture, Livestock, Production, Fishing and Aquaculture chapter.

Substantial contribution to Objective 1 — Climate change mitigation

Private and public motor vehicles qualify as substantially contributing to climate change mitigation when they meet one of the following criteria:

- A.** Vehicles for private transport or government use with zero direct emissions in use meet the substantial contribution criteria. Vehicles must comply with the standards of the World Forum for Harmonization of Vehicle Regulations (WP.29) or similar national standards.
- B.** Vehicles for private transport or government use powered exclusively by ethanol (with an electric or combustion engine).
- C.** Legal entity that purchases low-carbon fuels for use in light motor vehicles and light commercial vehicles.

Do no significant harm

The DNSH criteria applicable to this activity are based on the adoption of complementary criteria to the substantial contribution criteria, to ensure that their implementation does not cause adverse impacts on TSB's other climate, environmental, and socio-economic objectives.

Do no significant harm (to any of the following objectives):	
Climate change adaptation	<ul style="list-style-type: none"> N/A
Protection and restoration of biodiversity and ecosystems	<ul style="list-style-type: none"> N/A
Conservation and sustainable management and use of soil and forests	<ul style="list-style-type: none"> N/A
Sustainable use and protection of water and marine resources	<ul style="list-style-type: none"> Establish an operation and maintenance plan for vehicle cleaning in specifically designated areas, making rational use of water resources.

Do no significant harm (to any of the following objectives):

<p>Transition to a circular economy</p>	<ul style="list-style-type: none"> • Have a management plan for using and reusing the fleet that is withdrawn from circulation, in accordance with the applicable guidelines of the National Circular Economy Strategy (Decree No. 12082, of June 27, 2024). • In the case of battery-powered vehicles, a proposal must be presented as to what will be done to ensure that the battery is properly disposed of at the end of its useful life (e.g., recycling, reuse or final waste disposal). The proposal must include the name of at least one organization that provides this service. If the battery's useful life ends during the financing period, the legal entity must prove that it has been properly disposed of. • Have certificates for the final disposal of solid waste generated throughout the vehicle management process, whether during maintenance or decommissioning, detailing the type of treatment applied according to the waste type.
<p>Pollution prevention and control</p>	<ul style="list-style-type: none"> • Comply with the permitted emission limits for unburned hydrocarbons (HC), carbon monoxide (CO), carbon dioxide (CO₂) and opacity (Op) for combustion motor vehicles, as established by the Regulation for the control of emissions of pollutants produced by motor vehicles with internal combustion engines.⁸ <p><i>Note:</i> some international standardization regulations that allow the verification of GHG emissions and noise in the transport sector are: ISO 13.040.50 — Emissions from mobile sources; ISO 362:2022 — Measurement of noise emitted by road vehicles during acceleration; ISO 28580:2018 — Method for measuring the rolling resistance of passenger cars, truck and bus tires.</p> <ul style="list-style-type: none"> • The use of NGV-powered vehicles must comply with up-to-date biomethane specifications and standards. • Draw up and implement a management plan for refrigerants used in cooling/refrigeration systems
<p>Reduction of socio-economic inequalities, considering racial and gender aspects</p>	<ul style="list-style-type: none"> • Annex A1: Do no significant harm criteria for socio-economic Objective 9.

⁸ Resolution No. 493, of July 24, 2019, establishes the PROMOT M5 Phase of requirements for the Air Pollution Control Program for Motorcycles and Similar Vehicles (PROMOT), for the control of emissions of polluting gases and noise from new mopeds, motorcycles and similar vehicles, amends CONAMA Resolutions No. 297/2002 and 432/2011, and makes other provisions.

H4: Road freight transport

CNAEs:

- 49.3: Road freight transport

Description:

This activity includes general road freight transportation, including: furniture transportation by road for private individuals, organizations or the government, furniture moving service within the same building or location, mobile storage depots when integrated with moving organizations, cargo transportation using animal- or human-drawn vehicles, rental of road cargo vehicles with a driver, containerized cargo transportation, and road transportation of products classified as dangerous based on the type of risk they present, according to specific legislation.

Examples of activities:

- Renewal/purchase of truck fleets for carriers;
- Light cargo vehicles for urban logistics;
- Purchase of low-carbon fuels for use in the existing fleet.

Out-of-scope activities:

- Waste collection (covered in activity H3).
- Distribution of drinking water by water tanker (covered in activity H3).
- Waste collection (covered in activity H3).
- Removal of construction debris, fast delivery services for retail goods and food services (included in activity H3).
- Off-road transportation exclusively at mineral extraction sites, transportation of logs and unloading of wood exclusively at the site of tree felling (covered in activity H3).
- Warehouses used as furniture storage, document storage and archives, or the activities of cargo terminals, cargo handling and storage operations (covered in activity H10).

Substantial contribution to Objective 1 — Climate change mitigation

Road freight transport qualifies as substantially contributing to climate change mitigation when one of the following criteria is met:

- A. Vehicles or vehicles fleet intended for road freight transportation with zero direct emissions in use meet the substantial contribution criteria.
- B. Vehicles or vehicle fleets that use 100% low-carbon fuels, in any combination, such as biodiesel/green diesel, biodiesel/low-carbon hydrogen, biomethane, among others, also meet the substantial contribution criteria.
- C. Transition limits:
 - i. Operation of a vehicle/fleet of vehicles made up entirely of hybrid trucks with an electric auxiliary traction system or renewable energy system that reduces fuel consumption by more than 15% compared to their non-hybrid equivalents meets the substantial contribution criteria by 2040.
 - ii. Natural gas vehicle/fleet operation meets the substantial contribution criteria, as long as they add biomethane in volume in an increasing proportion, starting at 1% in 2027, and increasing by 1% per year, reaching 24% in 2050. The operator must demonstrate through third-party verification or certification that they use the fuel for their activities. The annual addition must align with the National Natural Gas Decarbonization Program during its term.
 - iii. Legal entities that demonstrate renewability of their energy purchases for cargo transport (excluding trucks described in items i and ii) at an increasing percentage above the mandatory low-carbon fuel content in force under the legislation for use in road diesel. The additional volume will start at 1% in

2027 and will increase by one percentage point a year until 2050. The energy content of biodiesel and green diesel will be used for this account.

Example: If the mandatory addition of biodiesel to diesel is 25% in 2036 and the mandatory addition of green diesel is 3%, this equates, depending on the energy content of green diesel, to approximately 26.64% of renewable energy. By 2036, the additional volume to meet TSB will be 10%. In other words, the organization's energy purchases will have to be 38% renewable, which equates to 32.12% renewability of its energy purchases for cargo transportation. The following can be used to prove the purchase of low-carbon fuels to meet the target: electricity, low-carbon hydrogen, biodiesel, green diesel, ethanol, green methanol, among other renewable and low-carbon fuels. The target can be achieved by increasing the addition of biodiesel/green diesel to diesel cycle trucks, or a portion of the fleet can run on electricity or hydrogen, which will also meet the transition limit.

Year	2027	2028	2029	2030	...	2049	2050
Additional %	1%	2%	3%	4%	...	23%	24%

Example:

Year	2026	2030	2036	2040	2050
Biodiesel content in force (%)	15.83%	19.83%	25%	25%	25%
Renewable Diesel content in force (%)	-	3%	3%	3%	3%
Energy in toe/m³ of total diesel	0.8391	0.8352	0.8323	0.8323	0.8323
Low-carbon fuel content in energy as required by law (%)	14.94%	21.65%	26.64%	26.64%	26.64%
Additional percentage to meet TSB transition (%)	0%	4%	10%	14%	24%
Energy in toe/m³ of total diesel	0.8391	0.8335	0.8267	0.8245	0.8189
Low-carbon fuel content in energy as required by TSB (%)	20.69%	24.55%	26.64%	40.35%	50.29%

Note: The example above considers the energy content of diesel A (fossil) to be 0.848 toe/m³, and that of biodiesel and green diesel to be 0.792 toe/m³. For simulation purposes, the upper limits of current legislation are considered, with the mandatory addition of biodiesel to diesel being 25%, and green diesel to diesel 3%. The energy content of the additional required by the TSB is assumed to be the same as that of biodiesel, i.e., 0.792 toe/m³. Based on these assumptions, each organization must prove the purchase of low-carbon energy at a proportion of 50.29% in 2050 to remain aligned with the TSB.

- D. Retrofitting: the transformation or replacement of polluting engines with less polluting ones, as long as it is carried out by the manufacturer or by an entity accredited and authorized by it, meets criterion C until 2040, and A and B after 2040.

Do no significant harm

The DNSH criteria applicable to this activity are based on the adoption of complementary criteria to the substantial contribution criteria, to ensure that their implementation does not cause adverse impacts on TSB's other climate, environmental, and socio-economic objectives.

Do no significant harm (to any of the following objectives):	
Climate change adaptation	<ul style="list-style-type: none"> N/A
Protection and restoration of biodiversity and ecosystems	<ul style="list-style-type: none"> N/A
Conservation and sustainable management and use of soil and forests	<ul style="list-style-type: none"> N/A
Sustainable use and protection of water and marine resources	<ul style="list-style-type: none"> Establish an operation and maintenance plan for vehicle cleaning in specifically designated areas, making rational use of water resources and avoiding the discharge of wastewater.
Transition to a circular economy	<ul style="list-style-type: none"> Have a management plan for using and reusing the fleet that is withdrawn from circulation, in accordance with the applicable guidelines of the National Circular Economy Strategy (Decree No. 12082, of June 27, 2024). In the case of battery-powered vehicles, a proposal must be presented as to what will be done to ensure that the battery is properly disposed of at the end of its useful

Do no significant harm (to any of the following objectives):

	<p>life (e.g., recycling, reuse or final waste disposal). The proposal must include the name of at least one organization that provides this service. If the battery's useful life ends during the financing period, the legal entity must prove that it has been properly disposed of.</p> <ul style="list-style-type: none"> • Have certificates for the final disposal of solid waste generated throughout the vehicle management process, whether during maintenance or decommissioning, detailing the type of treatment applied according to the waste type.
Pollution prevention and control	<ul style="list-style-type: none"> • Comply with the permitted emission limits for unburned hydrocarbons (HC), carbon monoxide (CO), carbon dioxide (CO₂) and opacity (Op) for combustion motor vehicles, as established by the Regulation for the control of emissions of pollutants produced by motor vehicles with internal combustion engines.⁹ • For direct exhaust emissions from internal combustion engines — nitrogen oxides (NO_x), total hydrocarbons (THC), non-methane hydrocarbons (NMHC), carbon monoxide (CO), particulate matter (PM) — vehicles must comply with the current PROCONVE P-8 (EURO VI) standard or higher. It includes mandatory verification of compliance with emission limits through field tests with on-board measuring devices, carried out during operational life.¹⁰ <p>Note: some international standardization regulations that allow the verification of GHG emissions and noise in the transport sector are: ISO 13.040.50:— Emissions from mobile sources; ISO 362: 2022 — Measurement of noise emitted by road vehicles during acceleration; ISO 28580:2018 — Method for measuring the rolling resistance of passenger cars, truck and bus tires.</p> <ul style="list-style-type: none"> • The use of NGV-powered vehicles must comply with up-to-date biomethane specifications and standards. • Draw up and implement a management plan for refrigerants used in cooling/refrigeration systems

⁹ Resolution No. 493, of July 24, 2019, establishes the PROMOT M5 Phase of requirements for the Air Pollution Control Program for Motorcycles and Similar Vehicles (PROMOT), for the control of emissions of polluting gases and noise from new mopeds, motorcycles and similar vehicles, amends CONAMA Resolutions No. 297/2002 and 432/2011, and makes other provisions.

¹⁰ CONAMA Resolution No. 490, of November 16, 2018, establishes the PROCONVE P8 Phase of requirements of the Program for the Control of Air Pollution from Motor Vehicles (PROCONVE), for the control of emissions of polluting gases and noise for new heavy-duty motor vehicles for road use, and makes other provisions. If this resolution is updated to require a higher standard, use the most up-to-date resolution.

Do no significant harm (to any of the following objectives):

Reduction of socio-economic inequalities, considering racial and gender aspects

- Annex A1: Do no significant harm criteria for socio-economic Objective 9.

H5: Cabotage and long-distance maritime transport**CNAEs:**

- 50.1: Cabotage and long-distance maritime transport
- 50.11-4: Maritime cabotage transport
- 50.12-2: Long-distance maritime transport

Description:

Cabotage navigation comprises the transportation of cargo and/or passengers between ports or points within Brazilian territory using the sea, or between the sea and inland waterways, carried out by own or chartered vessels. Therefore, this activity also covers the purchase, commissioning for construction, financing, chartering and operation of passenger and cargo transportation using domestic and foreign vessels, whether owned or chartered. Long-distance maritime transport includes the international transportation of passengers and cargo between Brazilian and foreign ports, including inland waterways along international routes.

Examples of activities:

- Construction, renovation, modernization, conservation, repair, purchase and rental of vessels for cabotage and/or long-distance maritime transport;
- Contracting of services and chartering of vessels for cargo and passenger transport;
- Purchase and acquisition of low-carbon fuels to supply vessels used in these services.

Out-of-scope activities:

- Operation and management of terminals; construction of port infrastructure; maritime and port support navigation; transportation of smaller vessels for tourist trips in coastal waters (included in activity H10);

Substantial contribution to Objective 1 — Climate change mitigation

Maritime transport qualifies as substantially contributing to climate change mitigation when any of the following criteria are met:

- A.** Cabotage and long-distance maritime vessels with direct zero emissions in use (e.g., sail-powered vessels, electric vessels, vessels fueled by low-carbon hydrogen or fueled by 1st or 2nd generation low-carbon fuels, among other zero or carbon-neutral fuels and forms of propulsion) automatically meet the substantial contribution criteria.
- B.** Cabotage and long-distance vessels that use low-carbon fuels or use hybrid technologies to reduce GHG emissions, guaranteed by a technological project or continuous monitoring and verification by a third party, automatically meet the substantial contribution criteria.
- C.** Transition limits:
- i. Cabotage¹¹ and long-distance vessels are eligible if the direct CO₂ emissions in use per ton-kilometer (gCO₂/t-km), calculated (or estimated in the case of new vessels) using the Operational Energy Efficiency Index, are 50% lower than the average reference value for CO₂ emissions defined for heavy-duty land vehicles. This alternative is optional when it is not technologically and economically feasible to meet the first criterion and will be allowed until 2040.
- D.** Long-distance vessels and foreign-flagged vessels in cabotage must meet the targets approved by the International Maritime Organization (IMO) when applicable:
- i. A 20% reduction targeting 30% of GHG emissions, with -40% CO₂ tpw and using 5–10% renewable energy by 2030;
 - ii. A 70% reduction targeting 80% of GHG emissions by 2040;
 - iii. Zero or almost zero GHG emissions by 2050.

Note: The IMO measures will be approved in 2025 and will come into effect internationally in 2027. Brazilian-flagged cabotage vessels must meet the targets for reducing greenhouse gas emissions by the percentages set out in the Climate Mitigation Plan below, for which nationally produced and certified low-emission fuels will also be recognized. Meet at least the targets of the Climate Mitigation Plan, where applicable: 28% reduction in GHG emissions by 2035; and zero GHG emissions by 2050. Retrofitting: the transformation or replacement of polluting engines with less polluting ones must take into account progress in reducing GHG emissions, considering criteria A, B, C or D.

Do no significant harm

The DNSH criteria applicable to this activity are based on the adoption of complementary criteria to the substantial contribution criteria, to ensure that their implementation does not cause adverse impacts on TSB's other climate, environmental, and socio-economic objectives.

Do no significant harm (to any of the following objectives):	
Climate change adaptation	<ul style="list-style-type: none"> • N/A
Protection and restoration of biodiversity and ecosystems	<ul style="list-style-type: none"> • N/A

¹¹ Cabotage vessels must comply with the provisions of the most modern cabotage transportation law (Law No. 14301/2022).

Do no significant harm (to any of the following objectives):

Conservation and sustainable management and use of soil and forests	<ul style="list-style-type: none"> N/A
Sustainable use and protection of water and marine resources	<ul style="list-style-type: none"> N/A
Transition to a circular economy	<ul style="list-style-type: none"> Define measures to manage waste, both in the use phase and at the end of the vessel's useful life, in accordance with the waste hierarchy, including the control and management of hazardous materials on board vessels and ensuring their safe recycling. In the case of battery-powered boats, a proposal must be presented as to what will be done to ensure that the battery is properly disposed of at the end of its useful life (e.g., recycling, reuse or final waste disposal). The proposal must include the name of at least one organization that provides this service. If the battery's useful life ends during the financing period, the legal entity must prove that it has been properly disposed of.
Pollution prevention and control	<ul style="list-style-type: none"> Ships operating with marine diesel engines must comply with the certifications and recognitions that ensure they meet the emission reduction rules established by the competent authorities. Enforce the control of sulfur oxide and particulate matter emissions from fuel oil used or transported for use on board the ship. Control measures include procedures for changing fuel oil, fuel oil sampling and control of the sulfur content, which must have a limit of 0.50% m/m. At the points and terminals defined by local regulations, tankers, gas carriers and crude oil carriers must have and implement a volatile organic compound (VOC) management plan approved by the competent authority. Vessels must have an appropriate solid waste management plan in place, in line with Brazilian policies and standards.

Do no significant harm (to any of the following objectives):

Reduction of socio-economic inequalities, considering racial and gender aspects

- Annex A1: Do no significant harm criteria for socio-economic Objective 9.

H6: Navigation support

CNAEs:

- 50.3: Navigation support

Description:

This activity includes the transportation of goods and people to supply and support ships and platforms for research and exploration of minerals and hydrocarbons; navigation carried out for logistical support of ships and platforms for exploration of minerals and hydrocarbons; navigation carried out in ports and waterway terminals, to service vessels and port facilities; vessels to support offshore pollution control and vessels to support offloading operations. It also includes towing services carried out by maritime support organizations and rescue and salvage services carried out by port support organizations.

Examples of activities:

- Renewal, purchase, rental of fleet of ships for support services mentioned above.
- Hiring services and/or chartering vessels for the services mentioned above.
- Purchase and acquisition of low-carbon fuels to supply vessels used to provide services of this nature.

Substantial contribution to Objective 1 — Climate change mitigation

Navigation support vessels qualify as substantially contributing to climate change mitigation when any of the following criteria are met:

- A. Support vessels with zero or near-zero direct emissions in use (e.g., sail-powered vessels, electric vessels, vessels fueled by low-carbon hydrogen or fueled by 1st or 2nd generation low-carbon fuels), among other zero or near-zero fuels and forms of propulsion, automatically meet the substantial contribution criteria.
- B. Retrofitting: the transformation or replacement of polluting engines with less polluting ones must take into account the progress made in reducing GHG emissions, considering the substantial contribution criterion of A. Brazilian-flagged vessels in support navigation must follow the greenhouse gas emission reduction targets in the percentages defined by the Climate Mitigation Plan, indicated below, for which nationally produced and certified low-emission fuels will also be recognized. Meet at least the targets of the Climate Mitigation Plan, where applicable: 28% reduction in GHG emissions by 2035; zero GHG emissions by 2050.

Do no significant harm

The DNSH criteria applicable to this activity are based on the adoption of complementary criteria to the substantial contribution criteria, to ensure that their implementation does not cause adverse impacts on TSB's other climate, environmental, and socio-economic objectives.

Do no significant harm (to any of the following objectives):

Climate change adaptation	<ul style="list-style-type: none"> N/A
Protection and restoration of biodiversity and ecosystems	<ul style="list-style-type: none"> N/A
Conservation and sustainable management and use of soil and forests	<ul style="list-style-type: none"> N/A
Sustainable use and protection of water and marine resources	<ul style="list-style-type: none"> N/A
Transition to a circular economy	<ul style="list-style-type: none"> Define measures to manage waste, both in the use phase and at the end of the vessel's useful life, in accordance with the waste hierarchy, including the control and management of hazardous materials on board vessels and ensuring their safe recycling. In the case of battery-powered boats, a proposal must be presented as to what will be done to ensure that the battery is properly disposed of at the end of its useful life (e.g., recycling, reuse or final waste disposal). The proposal must include the name of at least one organization that provides this service. If the battery's useful life ends during the financing period, the legal entity must prove that it has been properly disposed of.

Do no significant harm (to any of the following objectives):

Pollution prevention and control	<ul style="list-style-type: none"> • Ships operating with marine diesel engines must comply with the certifications and recognitions that ensure they meet the emission reduction rules established by the competent authorities. • Enforce the control of sulfur oxide and particulate matter emissions from fuel oil used or transported for use on board the ship. Control measures include procedures for changing fuel oil, fuel oil sampling and control of the sulfur content, which must have a limit of 0.50% m/m. • At the points and terminals defined by local regulations, tankers, gas carriers and crude oil carriers must have and implement a volatile organic compound (VOC) management plan approved by the competent authority. • Vessels must have an appropriate solid waste management plan in place.
Reduction of socio-economic inequalities, considering racial and gender aspects	<ul style="list-style-type: none"> • Annex A1: Do no significant harm criteria for socio-economic Objective 9.

H7: Inland waterway transport and other water transport**CNAEs:**

- 50.2: Transportation by inland waterway
- 50.9: Other water transport

Description:

This activity includes the transportation of cargo and passengers by inland waterway, on regular lines, on rivers, canals, lakes, lagoons and other inland waterways, on national or international routes. It also includes the transportation of passengers and cargo across rivers, lakes, lagoons, canals and bays, intercity, interstate and international.

Examples of activities:

- Renewal, purchase, rental, chartering of vessels for waterway or waterway transportation of cargo and passengers by inland, intercity, interstate and international navigation;
- Hiring of services and/or chartering of vessels for the purchase/rental/chartering of vessels;
- Purchase of low-carbon fuels to supply vessels used to provide services of the nature of these activities;

- Retrofitting for the application of technologies to increase the efficiency of vessels, generating a reduction in fuel consumption.

Out-of-scope activities:

- Operation of boats for sightseeing tours or for the transportation of people without a fixed itinerary; operation and management of terminals (covered in the Social Services Sector chapter, Tourism section).

Substantial contribution to Objective 1 — Climate change mitigation

Inland waterway and other water transport vessels qualify as substantially contributing to climate change mitigation when any of the following criteria are met:

- A. Vessels, or ships and pushers, have zero or almost zero direct CO₂ emissions when using electric and low-carbon fuels.
- B. The vessels operate on low-carbon fuels in accordance with the limits set by the TSB, ensured through technological design or continuous monitoring and third-party verification.
- C. Zero or near-zero emission outboard motors for small and medium-sized boats.
- D. Hybrid and low-carbon fuel-powered vessels obtain at least 30% of their energy from direct zero or near-zero CO₂ emission fuels in use or from plug-in power for regular operation.
- E. Transition limit:
 - i. Inland waterway cargo and passenger vessels must at least meet the greenhouse gas emission reduction targets in the percentages established by the Climate Mitigation Plan below, with nationally produced and certified low-emission fuels also being recognized for compliance. Meet at least the targets of the Climate Mitigation Plan, where applicable:
 - i. A 28% reduction in GHG emissions by 2035;
 - ii. Zero or almost zero GHG emissions by 2050.
- F. The retrofitting (the transformation or replacement of polluting engines with less polluting ones) of vessels for the transportation of cargo or passengers on inland waters must meet at least the targets indicated above.

Do no significant harm

The DNSH criteria applicable to this activity are based on the adoption of complementary criteria to the substantial contribution criteria, to ensure that their implementation does not cause adverse impacts on TSB's other climate, environmental, and socio-economic objectives.

Do no significant harm (to any of the following objectives):	
Climate change adaptation	<ul style="list-style-type: none"> • N/A
Protection and restoration of biodiversity and ecosystems	<ul style="list-style-type: none"> • N/A

Do no significant harm (to any of the following objectives):

<p>Conservation and sustainable management and use of soil and forests</p>	<ul style="list-style-type: none"> • N/A
<p>Sustainable use and protection of water and marine resources</p>	<ul style="list-style-type: none"> •
<p>Transition to a circular economy</p>	<ul style="list-style-type: none"> • Define measures to manage waste, both in the use phase and at the end of the vessel's useful life, in accordance with the waste hierarchy, including monitoring the abandonment of vessels on the banks of water bodies, the sustainable dismantling of vessels, the control and management of hazardous materials on board vessels and ensuring their safe recycling. • For battery-powered boats, a proposal must be presented as to what will be done to ensure that the battery is properly disposed of at the end of its useful life (e.g., recycling, reuse or final waste disposal). The proposal must include the name of at least one organization that provides this service. If the battery's useful life ends during the financing period, the legal entity must prove that it has been properly disposed of.
<p>Pollution prevention and control</p>	<ul style="list-style-type: none"> • Vessels or ships and pushers operating with marine diesel engines must comply with the certifications and recognitions that ensure they meet the emission reduction rules established by the competent authorities. • All emissions of ozone-depleting substances are banned, as are installations containing ozone-depleting substances on ships and pushers. • Enforce the control of sulfur oxide and particulate matter emissions from fuel oil used or transported for use on board the ship. Control measures include procedures for changing fuel oil, fuel oil sampling and control of the sulfur content, which must have a limit of 0.50% m/m. • At the points and terminals defined by local regulations, tankers, gas carriers and crude oil carriers must have and implement a volatile organic compound (VOC) management plan approved by the competent authority. • The use of NGV-powered vessels must comply with up-to-date biomethane specifications and standards. • Vessels must have an appropriate solid waste management plan in place.

Do no significant harm (to any of the following objectives):

Reduction of socio-economic inequalities, considering racial and gender aspects

- Annex A1: Do no significant harm criteria for socio-economic Objective 9.

H8: Air transport

CNAEs:

- 51: Air transport

Description:

This activity includes the transportation of passengers and cargo by air, both domestically and internationally, on scheduled or non-scheduled routes. This includes, for example, air cab services, chartering of aircraft with crew for the transportation of passengers for any purpose, aeroclub services for instruction or recreational purposes, and transportation in aircraft for sightseeing.

Examples of activities:

- Renewal/purchase/rental/chartering of aircraft for the services mentioned in the description
- Purchase of low-carbon fuels for aircraft operation.

Out-of-scope activities:

- Construction and management of airports, maintenance and repair of aircraft and their engines; aircraft maintenance activities on the runway; aerial spraying activities; aerial advertising; aerial photography (included in activity H10).

Substantial contribution to Objective 1 — Climate change mitigation

Air transport activities qualify as substantially contributing to climate change mitigation when any of the following criteria are met:

- A. Purchase, use or leasing of aircraft with zero direct GHG emissions in use, such as those powered by electricity or hydrogen or capable of using sustainable aviation fuel (SAF) in a 100% proportion. These aircraft must be certified in accordance with Volume III of Annex 16 of the International Civil Aviation Organization (ICAO) in accordance with the regulatory limit established in Chapter 2, paragraph 2.4.2, subparagraphs a, b and c, incorporated into Brazilian Law by Brazilian Civil Aviation Regulation number 38, or the most current regulation.
- B. Conversion or retrofitting of the existing air fleet to electric propulsion technologies, hydrogen, or the use of SAF in a proportion of 100%.

- C. Transition limit: for the purchase and use of SAF in air operations, the activity complies with all of the following criteria:
- i. Operation of aircraft or aircraft fleet to meet the trajectory of % in SAF mixture for aviation:
 - 2 % for aircraft or aircraft fleet operations from 2025 to 2028.
 - 4 % for aircraft operations or aircraft fleet in 2029, with an annual growth of 2% until 2037 (e.g., 6% in 2030 and 20% in 2037).
 - 24 % for aircraft operations or aircraft fleet in 2038 with an annual growth of 4% until 2044 (e.g., 28% in 2039, and 52% in 2044).
 - 60 % for aircraft operations or aircraft fleet in 2045, with an annual growth of 8% until 2050 (e.g., 60% in 2045 and 100% in 2050).
 - ii. Raw material (SAF)
 - SAF must have been recognized and certified in accordance with ICAO criteria and methodologies. In addition, the criteria set out in CNAE C — Manufacturing Industry technical chapter must be respected.

Do no significant harm

The DNSH criteria applicable to this activity are based on the adoption of complementary criteria to the substantial contribution criteria, to ensure that their implementation does not cause adverse impacts on TSB's other climate, environmental, and socio-economic objectives.

Do no significant harm (to any of the following objectives):

Climate change adaptation	<ul style="list-style-type: none"> • N/A
Protection and restoration of biodiversity and ecosystems	<ul style="list-style-type: none"> • N/A
Conservation and sustainable management and use of soil and forests	<ul style="list-style-type: none"> • N/A
Sustainable use and protection of water and marine resources	<ul style="list-style-type: none"> • N/A

Do no significant harm (to any of the following objectives):

Transition to a circular economy	<ul style="list-style-type: none"> • In the case of battery-powered aircraft, a proposal must be presented as to what will be done to ensure that the battery is properly disposed of at the end of its useful life (e.g., recycling, reuse or final waste disposal). The proposal must include the name of at least one organization that provides this service. If the battery's useful life ends during the financing period, the legal entity must prove that it has been properly disposed of. • When the aircraft's primary or secondary auxiliary power sources are battery-operated, include measures for the reuse and recycling of batteries and electronic components, including the essential raw materials they contain. • Have a management plan that allows the use and reuse of the system/fleet/equipment that goes out of use, in accordance with the applicable guidelines of Brazil's National Circular Economy Strategy (Decree No. 12082 of June 27, 2024). • Have certificates for the final disposal of solid waste generated throughout the process of managing end-of-life aircraft, detailing the type of treatment carried out according to the waste type.
Pollution prevention and control	<ul style="list-style-type: none"> • N/A
Reduction of socio-economic inequalities, considering racial and gender aspects	<ul style="list-style-type: none"> • Annex A1: Do no significant harm criteria for socio-economic Objective 9.

H9: Operation of personal mobility devices, bicycle logistics/ micromobility**CNAEs:**

- 45.4: Trade, maintenance and repair of motorcycles, parts and accessories
- 47.63-6: Retail trade in recreational and sporting goods
- 62: Information technology services activities

Description:

Micromobility refers to a transport option in a small, light vehicle with one or more wheels, with or without a self-balancing system that dynamically stabilizes the inherently unstable equipment by means of an auxiliary control system consisting of a gyroscope and accelerometer; which generally operate at speeds of less than 32 kilometers per hour and are ideal for journeys of up to 10 kilometers and a width of no more than 70 cm and a wheelbase of up to 130 cm (Ministry of Transport, 2023). For TSB purposes, this activity will cover the purchase, financing, leasing, rental and

operation of personal mobility and transportation devices powered by the user's physical activity, zero-emission engines or a combination of both.

Examples of activities:

- Purchase or leasing of a variety of light vehicles, such as bicycles, mopeds, tricycles and quadricycles (skates, hoverboards, rollerblades, segways, scooters, among others), at the service of micromobility users;
- Purchase or leasing of other small means of transport, usually electric, and which, due to their technical, functional and environmental characteristics, are a favorable transport solution for environmental sustainability;
- Purchase or customization of information technology systems dedicated to connecting users with micromobility.

Out-of-scope activities:

- Infrastructure to enable micromobility (sidewalks, pedestrian bridges, bike lanes, bike stations, etc.) (covered in activity H10).

Substantial contribution to Objective 1 — Climate change mitigation

Any freight or passenger fleet or micromobility system with zero direct emissions in use automatically qualifies as substantially contributing to climate change mitigation.

Do no significant harm

The DNSH criteria applicable to this activity are based on the adoption of complementary criteria to the substantial contribution criteria, to ensure that their implementation does not cause adverse impacts on TSB's other climate, environmental, and socio-economic objectives.

Do no significant harm (to any of the following objectives):

Climate change adaptation	<ul style="list-style-type: none"> • N/A
Protection and restoration of biodiversity and ecosystems	<ul style="list-style-type: none"> • N/A
Conservation and sustainable management and use of soil and forests	<ul style="list-style-type: none"> • N/A

Do no significant harm (to any of the following objectives):

Sustainable use and protection of water and marine resources	<ul style="list-style-type: none"> N/A
Transition to a circular economy	<ul style="list-style-type: none"> Have a management plan in place to use and reuse the fleet that is withdrawn from circulation, in accordance with the applicable guidelines of Brazil's National Circular Economy Strategy (Decree No. 12082 of June 27, 2024). Regarding battery-powered light vehicles mentioned in this activity, a proposal must be presented as to what will be done to ensure that the battery is properly disposed of at the end of its useful life (e.g., recycling, reuse or final waste disposal). The proposal must include the name of at least one organization that provides this service. If the battery's useful life ends during the financing period, the legal entity must prove that it has been properly disposed of.
Pollution prevention and control	<ul style="list-style-type: none"> N/A
Reduction of socio-economic inequalities, considering racial and gender aspects	<ul style="list-style-type: none"> Annex A1: Do no significant harm criteria for socio-economic Objective 9.

H10: Transport infrastructure**CNAEs:**

- 42.00-0 Infrastructure works
- 49.40-0: Pipeline transportation
- 35.10-0: Electricity distribution
- 52.00-0: Storage and auxiliary transportation activities
- 62.00-0: Information technology services activities

Description:

Low-carbon transport infrastructure plays a key role in climate change mitigation, as it forms the basis for enabling more efficient and sustainable transport systems. This infrastructure includes the construction, rehabilitation, operation and maintenance of roads, railroads, waterways, ports, airports, pipelines, other facilities and technology systems that promote the use of low-carbon modes of transport, and is essential for reducing GHG emissions associated with the sector. It also includes infrastructure to enable the distribution of low-carbon fuels. Sustainable infrastructure must therefore be climate resilient (i.e., infrastructure designed to withstand climatic events), socially inclusive, technologically advanced, productive and flexible.

Substantial contribution to Objective 1 — Climate change mitigation

Regardless of the type of infrastructure, any construction or retrofitting of a building, installations of energy efficiency components and systems, installation of charging points for electric vehicles in buildings and installation of systems and equipment for on-site generation of energy from renewable sources must follow the technical criteria in CNAE F — Construction chapter, where applicable. The criteria below depend on the mode of transport that the infrastructure will enable:

- A. Infrastructure and systems related to public transportation:** infrastructure for an integrated and sustainable public transportation system. Eligible investments may include, but are not limited to:
- Metro, BRTs, LTUs, streetcars, short-distance interurban train systems, LRVs, monorails and others).
 - Equipment, systems and/or planning strategies that allow for the prioritization of public transport (transport corridors or exclusive lanes) and transport-oriented development (TOD). Infrastructure must be utilized by a fleet of vehicles that meet the applicable activity criteria. The infrastructure must comply with accessibility parameters for people with disabilities (PwD).
 - Cable cars for public transport, with a 100% electric power supply.
 - Multimodal integrated public transport stations.
- B. Technological infrastructure and systems aimed at transport efficiency and climate change mitigation.** It includes technologies and platforms that show potential to reduce greenhouse gas emissions. These technologies must be integrated or encourage integration with intermodal systems and sustainable transport solutions, promoting energy efficiency and reducing emissions throughout the logistics and mobility chain. Eligible investments may include, but are not limited to:
- Digital platforms for mobility as a service (MaaS): Solutions for shared transportation, digital connectivity and real-time fleet/logistics management, promoting greater efficiency in the use of resources and reducing emissions.
 - Intelligent transportation systems (ITS): Technologies for operation, control, fare collection and user information, such as intelligent parking and transportation systems; electronic urban toll solutions and monitoring of exclusive bus lanes; intelligent traffic lights, real-time monitoring and congestion management, reducing the consumption of fossil fuels in urban and interurban areas.
 - Technologies for demand management and traffic optimization: Projects such as NAMA TAnDem, which implement strategies to reduce demand for individual transportation and encourage sustainable alternatives.
 - Infrastructure and software for efficient logistics: Real-time monitoring in truck logistics and fleet management to reduce unnecessary distances traveled and optimize fuel use, greater use of targeted telemetry in fleets, with driver training aimed at improving fuel efficiency.
 - Use of accessible technologies for route optimization and telemetry, with specific technical training programs for small businesses in the transport and logistics sector.
 - Dissemination of the use of information and guidance applications for choosing routes.
 - The use of autonomous systems or vehicles (as long as the vehicles are zero-emission in use), with route planning technology in conjunction with vehicle management.
 - Information and guidance apps for choosing routes with demonstrated potential to reduce emissions through the efficiency of the transport system.

- C. Infrastructure for micromobility:** Infrastructure and equipment aimed at zero-emission micromobility, including the reconfiguration of road and street profiles to prioritize pedestrian areas, cycling infrastructure and integrated micromobility systems that are accessible to people with disabilities (PwD). Eligible investments may include, but are not limited to:
- Urban equipment for public bicycle and scooter sharing systems, consolidation and distribution points for last-mile urban goods¹² in micromobility systems (such as cross-docking hubs).
 - Dedicated pavements, cycle paths, pedestrian-only zones and parking provisions for active mobility modes.
Measures that aim to reduce urban heat islands and reduce flooding, such as permeable blocks and solar-reflective paints.
- D. Infrastructure and equipment needed for zero-emissions transportation:** Infrastructure and equipment that prioritize the reduction of greenhouse gas emissions and accessibility in urban and rural areas. Eligible investments may include, but are not limited to:
- Electric vehicle charging points, covering public and private transport, with the capacity to support different connectivity standards and fast charging.
 - Smart grid upgrades and integration, such as optimized power distribution networks and vehicle-to-infrastructure (V2I) and vehicle-to-vehicle (V2V) connectivity systems, which enable real-time communication for greater operational efficiency.
 - Electric highways, designed to allow dynamic charging of moving vehicles.
 - Services related to the purchase, maintenance, recycling and replacement of batteries for vehicles and sustainable transport infrastructure.
- E. Infrastructure for the distribution of low-carbon fuels:** fuel stations or stations for low-carbon fuels and LNG for the transport sector, located in any transport infrastructure (waterways, ports, railroads, highways and airports); as well as infrastructure for the distribution of low-carbon fuels.¹³
- F. Multimodal infrastructure for logistics and low-carbon cargo transport:** projects that prioritize efficiency in cargo transport and the reduction of GHG emissions. They must be aligned with sustainability standards and promote the adoption of innovative technologies, such as real-time emissions monitoring and intelligent logistics networks. Eligible investments may include, but are not limited to:
- Logistics consolidation and distribution centers with energy efficiency and technologies to optimize cargo flow, thereby reducing travel distances and emissions.
 - Integrated logistics platforms that promote intermodality between road, rail and waterway modes, with management and tracking systems that increase operational efficiency and reduce emissions.
 - Studies and innovations aimed at developing low-emission transport and fuels and electric internal transport equipment.
- G. Rail infrastructure:** existing rail infrastructure (brownfield) not electrified with a plan/project for decarbonization through extensions and improvements to transport operations, the network or capacity. For the construction of new railroads (greenfield), in the Technical, Economic and Environmental Feasibility Study (EVTEA), an electrification plan/project or the use of trains with zero direct emissions should be evaluated. In the implementation and maintenance of rail infrastructure, specific auxiliary equipment is used for the operations of this mode of transport, such as the ballast shoulder cleaning machine (DOL) and the road-rail tamping machine, among others.

¹² The last mile is understood as the delivery of a product from the distribution center to homes or businesses.

¹³ For the activity of transportation and distribution of gaseous fuels by pipeline systems, see CNAE D — Electricity and Gas technical chapter.

- H. Waterway infrastructure:** includes the construction, modernization, maintenance and operation of structures for water transport, including navigable channels, canals and port access routes, with a focus on reducing emissions and energy efficiency. The infrastructure must favor integration into sustainable intermodal systems, promote logistical efficiency and reducing emissions throughout the transport chain, and must comply with accessibility parameters for people with disabilities (PwD), where applicable. Eligible investments may include, but are not limited to:
- Interventions to enable and expand navigable rivers, promoting the connectivity of riverside communities and efficient logistics.
 - Systems of locks and level transpositions and deepening dredging to optimize navigability and reduce the impact of seasonal variations in river levels.
 - Use of sustainable materials and technologies in the construction of terminals and warehouses in river and seaports.
 - Electrification of activities and supply of fixed electricity on land (shore-to-ship) and pre-conditioned air for moored vessels.
 - Integrated port environmental management, including water quality monitoring, noise and air pollution control and solid and liquid waste treatment systems.
 - Adoption of sustainable technologies, such as port automation, intelligent logistics management systems and energy efficiency monitoring, optimize energy consumption and reduce emissions associated with the transport of goods.
 - Vehicles and machinery for port logistics, aimed at zero emissions in use.
 - Environmental management of interventions on waterways, including implementation of the environmental programs defined by the licensing bodies;
 - Infrastructure for navigation safety, such as maintenance dredging, efficient waterway signaling, bridge abutment protection and navigation monitoring and support systems (Vessel Traffic Services).
 - Infrastructure for monitoring river conditions, by means of hydrographic surveys and the implementation of intelligent small public port facilities (IP4) that allow the modeling of waterways to increase safety and load capacity while minimizing the need for hydraulic intervention;
 - Construction, jumboization, conversion, modernization, docking, maintenance, overhaul and repair of own or chartered vessels, aimed at fulfilling sustainability commitments, according to guidelines and criteria defined by the competent authority.
 - Infrastructure for the development of waterways, such as dredging, excavations and other investments aimed at promoting the use of waterways as a low-carbon mode of transportation; Dissemination of the use of information and guidance applications for choosing maritime routes and better tidal currents that have proven potential to reduce emissions from navigation;
 - Sustainable intermodal integration, ensuring efficient connections between water transport (maritime and waterway) and other low-emission modes of transport, such as railroads.
- I. Airport infrastructure:** encompasses the construction, modernization and operation of facilities aimed at reducing emissions and energy efficiency. Infrastructure must promote integration with low-carbon intermodal transport systems, enhancing logistical efficiency and reducing emissions from the transport of goods and passengers. Where possible, it should also incorporate recycled and low-carbon materials and comply with accessibility standards for people with disabilities (PwD). Eligible investments may include, but are not limited to:
- Providing renewable energy and pre-conditioned air for aircraft while they are parked, reducing the use of auxiliary fossil fuel engines (Auxiliary Power Units).

- Modernization of airport operations (ground handling services) with the adoption of sustainable technologies, such as electric vehicles for yard support, energy efficiency monitoring systems and intelligent lighting.
- Use of sustainable materials and technologies in the construction of terminals, hangars and other structures, in line with the sector's best sustainability practices, such as ICAO and Airport Council International (ACI) standards. This includes studies and measures necessary for accreditation by the ACI's Airport Carbon Accreditation (ACA) Program.
- Implementation of infrastructure for storage, safe handling and distribution of Sustainable Aviation Fuels (SAF). This infrastructure must comply with international safety and sustainability standards (ASTM, IATA, International Civil Aviation Organization (*Organização da Aviação Civil Internacional*, ICAO)) and contribute to expanding the supply and use of SAF in the airline industry.

J. Rehabilitation and modernization of road transport infrastructure, including road improvement and maintenance services with the aim of improving the functionality, fluidity and safety of traffic, provided that the premise is not to increase traffic capacity. It should be noted that the implementation of these guidelines may involve rehabilitating existing infrastructure in order to eliminate critical points and improve traffic flow, thus ensuring the safety and comfort of users. Eligible investments may include, but are not limited to:

- Maintenance services, which include essential services such as cleaning, weeding and pruning the right-of-way, pothole repair, embankment recomposition, slope stabilization, repairs and replacement of signs and safety devices, as well as drainage management with cleaning and recovery of culverts and gutters. It also includes the restoration and maintenance of structures such as bridges and viaducts;
- Improvement services that include geometric adjustments, such as changes to the route and cross-sections.
- Auxiliary equipment: track maintenance machines, inspection equipment and autonomous/semi-autonomous trains, as long as they have zero GHG emissions in use.
- The following premises are encouraged for the proper execution of road works services:
 - i. Promote the circular economy, where applicable, with the use of recycled and low-carbon materials on construction sites;
 - ii. Ensure that waste generated during construction is properly reused or recycled;
 - iii. The improved road should reach the "Good" level according to the Network Maintenance Condition Index (ICM) published by the National Department of Transport Infrastructure;

Do no significant harm

The DNSH criteria applicable to this activity are based on the adoption of complementary criteria to the substantial contribution criteria, to ensure that their implementation does not cause adverse impacts on TSB's other climate, environmental, and socio-economic objectives.

Do no significant harm (to any of the following objectives):

Climate change adaptation	<ul style="list-style-type: none"> • The infrastructure that is adapted or built must take into account the measures needed to adapt to climate change and its resilience, in line with the TSB criteria for the objective of adapting to climate change.
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Do no significant harm (to any of the following objectives):

Protection and restoration of biodiversity and ecosystems	<ul style="list-style-type: none"> • Present measures to prevent the fragmentation and degradation of natural and urban landscapes, as well as the risks of road incidents or accidents and wildlife accidents caused by collisions. • The indirect impact of the project should be considered, using a solid methodology to establish its area of indirect influence, which should take into account estimates of changes in socio-economic dynamics caused by the installation and operation of the infrastructure, especially how these changes may alter land use, stimulate deforestation and cause other socio-environmental damage. • Take measures to monitor and protect urban ecosystems, especially public spaces, urban green areas and urban tree cover.
Conservation and sustainable management and use of soil and forests	<ul style="list-style-type: none"> • If necessary, adopt measures to preserve biodiversity in the vicinity of infrastructure, ranging from maintaining vegetation within the infrastructure strip or area without compromising native vegetation to broader conservation actions to reduce impacts on fauna and flora in adjacent areas.
Sustainable use and protection of water and marine resources	<ul style="list-style-type: none"> • N/A
Transition to a circular economy	<ul style="list-style-type: none"> • Ensure that at least 20% (by weight) of the non-hazardous construction and demolition waste generated on-site is prepared for reuse, recycling and other types of material recovery. Utilization rates should increase to 40% by 2030, 60% by 2032 and reach 70% by 2035. Increasing the rate of reuse, recycling and/or recovery of materials should prioritize recycling and recovery at sites close to the project, minimizing the emissions associated with transporting materials over long distances.
Pollution prevention and control	<ul style="list-style-type: none"> • Minimize noise and vibrations caused by the use of the infrastructure.

Do no significant harm (to any of the following objectives):

Reduction of socio-economic inequalities, considering racial and gender aspects

- Annex A1: Do no significant harm criteria for socio-economic Objective 9.

H11: Research, development and innovation activities for the sector

CNAEs:

- 71.0: Architecture and engineering services; technical testing and analysis
- 72.10-0: Research and experimental development in physical and natural sciences

Description:

This activity covers research, development and implementation activities for innovative solutions, processes, technologies and business models aimed at reducing, eliminating or preventing emissions in the CNAE H sector. It also includes individual measures and professional services needed to ensure that economic activities comply with TSB objectives. The solutions developed must demonstrate their ability to contribute significantly to the climate change mitigation objective of the sector's activities.

Out-of-scope activities:

Activities linked to the improvement of technologies and processes for the use of fossil fuels.

Substantial contribution to Objective 1 — Climate change mitigation

Creating intangible assets and carrying out research, development and innovation activities explicitly aimed at facilitating compliance with TSB's substantial contribution criteria and reaching the limits established for the CNAE H sector.

Objective 2 — Climate change adaptation

The transportation sector in Brazil is highly vulnerable to climate change, facing risks such as floods, landslides, rising sea levels, intense rainfall and heat waves. These phenomena can damage essential infrastructure such as roads, ports, airports and railroads, disrupting operations, user flows, critical access to social services and markets and increasing maintenance costs. In addition, changes in rainfall patterns affect waterways, hampering the transportation of goods and people.

To adapt to these changes, the country must prioritize the development of a resilient and sustainable transport infrastructure. This includes the construction and modernization of roads, ports, airports and waterways capable of withstanding extreme weather events. The creation of a resilient transportation network is also key to emergency response and to ensuring that vulnerable communities have access to essential services during critical times.

The Interministerial Sustainability Guidelines of the Ministry of Transport and Ministry of Ports and Airports (Interministerial Ordinance No. 2/2025) should be considered as a complementary normative framework to the TSB regarding the planning and operation of land transport infrastructure. The five guidelines — respect for local populations and users; reconciliation with environmental conservation; mitigation of negative socio-environmental impacts; reduction of emissions; and climate change adaptation — guide the formulation and execution of federal projects and road and rail concessions. The Taxonomy must be aligned with these guidelines, promoting synergy between sustainable financing and sectoral public policies.

Categories of eligible activities

- HA1: Construction, expansion, operation and/or improvement of roads adapted to flooding and mass movement events
- HA2: Reforestation and vegetation management services in areas adjacent to infrastructure and road works
- HA3: Improvement of rainwater drainage systems on roads
- HA4: Construction, expansion, operation and/or modernization of port facilities adapted to flooding and rising sea levels
- HA5: Construction, expansion, operation and/or improvement of waterways and associated equipment adapted to flood and drought conditions
- HA6: Construction, expansion, operation and/or modernization of railway tracks, stations and equipment adapted to flooding
- HA7: Construction, expansion, operation and/or modernization of airports, aircraft and equipment adapted to flooding
- HA8: Implementation of Nature-based Solutions (NbS) or Ecosystem-based Adaptation (EbA) projects for transport systems
- HA9: Wetland restoration and flood detour interventions as nature-based solutions

Criteria for substantial contribution: types of technical criteria applied

The development of technical criteria for adapting to climate change in the transport sector was also based on pioneering studies, such as AdaptaVias, coordinated by the Ministry of Transport in partnership with MCTI, National Institute for Space Research (*Instituto Nacional de Pesquisas Espaciais*, INPE), GIZ and COPPE/UFRJ. This study developed a climate risk model based on specific Hazards (e.g., landslides, fires, floods), exposure indices and infrastructure vulnerability, making it possible to define hotspots and priority adaptation actions. Integrating this data into the TSB gives greater technical precision to the guidelines for resilient investments in the sector.

Given the interdependence of federal, state and municipal road systems, the development and adoption of a national methodology for mapping climate risk areas in land transport infrastructure is recommended to ensure standardization, comparability and periodic updating of data. Validated technical criteria, such as those used in the AdaptaVias study, can contribute to the construction of a national technical-regulatory framework on adaptation, with broad applicability among federal entities and private operators.

It is also recommended to consider social and territorial aspects that influence adaptive capacity, such as the social vulnerabilities of users, impacted communities and indigenous and traditional territories. Integrating elements of climate justice and territorial equity strengthens the legitimacy of actions and their effectiveness in reducing inequalities in the face of climate change impacts.

The integration of early warning systems and predictive intelligence for disruptions and damage related to extreme weather events is recommended wherever possible. Tools based on geotechnologies and historical climate data, integrated with logistical and operational databases, can increase the ability to anticipate, protect lives and reduce material damage. The adoption of such technologies can be considered an eligible adaptation measure, especially when linked to strategic logistics corridors.

Eligible activities and measures in the transport sector apply the following types of technical evaluation criteria:

- **Directly qualified:** activities or measures with low risk of poor adaptation and high potential for a substantial contribution to climate change adaptation are directly qualified.
- **Quantitative/verifiable criteria:** substantial contribution criteria for activities that are based on verifiable indicators (e.g., improving rainwater drainage on roads).
- **Qualitative criteria:** substantial contribution criteria determined by a set of qualitative criteria and checks (e.g., wetland restoration and flood detour).
- **Vulnerability assessment:** for any other measure not listed in the Adapted and Enabling activities and measures, a detailed vulnerability assessment is required to demonstrate that the activity/measure mentioned contributes to improving the sector's resilience. This applies to both adapted and enabling activities/measures. The methodology for this assessment is described in Annex A2.

How to use these criteria:

Listed below are the activities and measures that have specific criteria for making a substantial contribution to the climate change adaptation objective. The activities are defined as those that are economic activities that generally have a CNAE code, while measures are the smaller-scale components of an activity. Each activity and measure indicate the threat (or Hazards) it addresses. In addition to this, it is also possible to present a vulnerability assessment along with an activity aimed at mitigating its risk. The criteria for this assessment are described in Annex A2. All measures with a

substantial contribution to the climate change adaptation objective must also meet the cross-cutting DNSH criteria presented in Table 1.

Note: This section has been divided into activities and measures according to their respective type of transport, covering road, waterway, metro-rail, air and multimodal modes.

Adapted and enabling activities and measures

Road transport

HA1: Construction, expansion, operation and/or improvement of roads adapted to flooding and mass movement events

CNAEs:

- 42.9: Construction of other infrastructure works

Hazards:

Flood damage/mass movement damage

Substantial contribution to Objective 2 — Climate change adaptation:

The greenfield projects are outside the scope of this activity

Demonstrate climate risk reduction or improved resilience through:

- For asset or activity with low or moderate risk: presentation of a qualitative and/or quantitative study;
- For asset or activity with high risk: implementation of a vulnerability assessment in accordance with the full process described in the specific methodology in Annex A2.

Risk levels must be determined in accordance with sections 1.1 and 1.2 of Annex A2

Do no significant harm:

In addition to the criteria described in the table below, the DNSH criteria for the socio-economic objective of reducing socio-economic inequalities, considering gender and race aspects, listed in Annex A1, must also be met, along with the cross-cutting DNSH criteria specific to the climate change adaptation objective.

Do no significant harm (to any of the following objectives):

Climate change mitigation	<ul style="list-style-type: none"> • The activity/measure does not negatively affect the mitigation efforts of other public or private agents. • Economic activity is consistent with sectoral, regional and/or national mitigation efforts.
Protection and restoration of biodiversity and ecosystems	<ul style="list-style-type: none"> • Present measures to prevent the fragmentation and degradation of natural and urban landscapes, as well as the risks of road incidents or accidents and wildlife accidents caused by collisions. • The indirect impact of the project should be considered, using a solid methodology to establish its area of indirect influence, which should take into account estimates of changes in socio-economic dynamics caused by the installation and operation of the infrastructure, especially how these changes may alter land use, stimulate deforestation and cause other socio-environmental damage. • Take measures to monitor and protect urban ecosystems, especially public spaces, urban green areas and urban tree cover.
Conservation and sustainable management and use of soil and forests	<ul style="list-style-type: none"> • If necessary, adopt measures to preserve biodiversity in the vicinity of infrastructure, ranging from maintaining vegetation within the infrastructure strip or area without compromising native vegetation to broader conservation actions to reduce impacts on fauna and flora in adjacent areas.
Sustainable use and protection of water and marine resources	<ul style="list-style-type: none"> • N/A
Transition to a circular economy	<ul style="list-style-type: none"> • Ensure that at least 20% (by weight) of the non-hazardous construction and demolition waste generated on-site is prepared for reuse, recycling and other types of material recovery. Utilization rates should increase to 40% by 2030, 60% by 2032 and reach 70% by 2035. Increasing the rate of reuse, recycling and/or recovery of materials should prioritize recycling and recovery at sites close to the project, minimizing the emissions associated with transporting materials over long distances.
Pollution prevention and control	<ul style="list-style-type: none"> • Minimize noise and vibrations caused by the use of the infrastructure.

Do no significant harm (to any of the following objectives):

Reduction of socio-economic inequalities, considering racial and gender aspects

- Annex A1: Do no significant harm criteria for socio-economic Objective 9.

HA2: Reforestation and vegetation management services in areas adjacent to infrastructure and road works**CNAEs:**

- 81.3: Landscape activities

Description

This activity is associated with the placement and management of roadside vegetation, which allows for the containment of mass movements and which, in turn, improves important ecosystem functions, including the provision of habitat for rare plants and animals, a seed source for adjacent landscapes, a buffer to reduce the penetration of traffic noise and light, contain mass movements, improve carbon sinks and aesthetics for road users.

Hazards:

Flood damage/mass movement damage

Substantial contribution to Objective 2 — Climate change adaptation:

The activity is qualified if it meets the following criteria:

- The activity is identified as a mass movement reduction measure that can affect existing transportation networks. This should be part of a comprehensive resilient infrastructure planning plan, in which climate risk information is incorporated into decision-making by transport planning organizations and contracting organizations. These plans pursue mass movement risk management objectives to reduce adverse impacts, where appropriate, on transportation infrastructure.
- The activity should address ecological connectivity in the development of transport infrastructure. The project must demonstrate alignment with the global IUCN Guidance: Addressing ecological connectivity in the development of roads, railroads and canals (IUCN, 2023).

Do no significant harm:

In addition to the criteria described in the table below, the DNSH criteria for the socio-economic objective of reducing socio-economic inequalities, considering gender and race aspects, listed in Annex A1, must also be met, along with the cross-cutting DNSH criteria specific to the Climate change adaptation objective.

Do no significant harm (to any of the following objectives):

Climate change mitigation	<ul style="list-style-type: none"> • The activity/measure does not negatively affect the mitigation efforts of other public or private agents. • The activity/measure does not lead to an increase in net greenhouse gas emissions. • Economic activity is consistent with sectoral, regional and/or national mitigation efforts
Protection and restoration of biodiversity and ecosystems	<ul style="list-style-type: none"> • Projects must comply with national regulations • There is no conversion of habitats specifically sensitive to biodiversity loss or of high conservation value, or of areas set aside for the restoration of such habitats in accordance with national legislation. • The project addresses negative effects such as: attracting wildlife and increasing vehicle–wildlife collision rates, creating movement corridors for weeds and invasive species or obscuring road signs and damaging road surfaces.
Conservation and sustainable management and use of soil and forests	<ul style="list-style-type: none"> • N/A
Sustainable use and protection of water and marine resources	<ul style="list-style-type: none"> • N/A
Transition to a circular economy	<ul style="list-style-type: none"> • N/A
Pollution prevention and control	<ul style="list-style-type: none"> • N/A
Reduction of socio-economic inequalities, considering racial and gender aspects	<ul style="list-style-type: none"> • N/A

HA3: Improvement of rainwater drainage systems on roads

CNAEs:

- 42.9: Construction of other infrastructure works

Description

Rainwater refers to the natural precipitation of rainwater. Improving stormwater management on road infrastructure helps mitigate runoff and reduces the adverse impacts of flooding on transportation systems. With effective stormwater management, transport networks can maintain safety and efficiency, ensuring the reliable movement of goods and people while minimizing damage to roads and related infrastructure.

Hazards:

Flood damage

Substantial contribution to Objective 2 — Climate change adaptation:

The activity must meet at least one of the following criteria:

- Implementation of systems based on the use of green infrastructure, such as sustainable drainage systems (SUDS) (these systems must comply with the criteria for the SUDS activity in CNAE E — Water technical chapter).
- Implementation of drainage structures that can be easily adapted to accommodate the requirements of aquatic species. Structures that reproduce the natural conditions of streams that can serve fish and other aquatic or semi-aquatic species. Demonstrate this requirement through an environmental management plan, including biodiversity.
- If green infrastructure is not feasible, conventional systems can be implemented; however, they must be designed to account for climate change regarding higher return periods and rainfall intensity. The following return periods should be considered for the design of rainwater systems (SNSA, 2022):
 - Microdrainage — residential: Return period of at least 10 years.
 - Microdrainage — commercial: Return period of at least 10 years.
 - Macrodrainage — residential: Return period of at least 50 years (at least 100 years for high-density areas).
 - Macrodrainage — commercial: Return period of at least 50 years (at least 100 years for high-density areas).

Note: For the construction of these systems, consult the National Water Policy and the Brazilian Building Code (Federal Government of Brazil, 1997).

Do no significant harm:

A management plan must be in place for the waste, sludge or sediment generated in the system (Pollution prevention and control). In addition to the criteria described in the table below, the DNSH criteria for the socio-economic objective of reducing socio-economic inequalities, considering gender and race aspects, listed in Annex A1, must also be met, along with the cross-cutting DNSH criteria specific to the climate change adaptation objective.

Do no significant harm (to any of the following objectives):

Climate change mitigation	<ul style="list-style-type: none"> • The activity/measure does not negatively affect the mitigation efforts of other public or private agents. • The activity/measure does not lead to an increase in net greenhouse gas emissions. • Economic activity is consistent with sectoral, regional and/or national mitigation efforts
Protection and restoration of biodiversity and ecosystems	<ul style="list-style-type: none"> • N/A
Conservation and sustainable management and use of soil and forests	<ul style="list-style-type: none"> • N/A
Sustainable use and protection of water and marine resources	<ul style="list-style-type: none"> • N/A
Transition to circular economy	<ul style="list-style-type: none"> • N/A
Pollution prevention and control	<ul style="list-style-type: none"> • A management plan must be in place for the waste, sludge, or sediment generated in the system (pollution prevention and control). Establish an operations and maintenance plan.
Reduction of socio-economic inequalities, considering racial and gender aspects	<ul style="list-style-type: none"> • N/A

Water transport

HA4: Construction, expansion, operation and/or modernization of port facilities adapted to flooding and rising sea levels

CNAEs:

- 42.91-0: Port, maritime and river works

Hazards:

Flood damage/Changes in sea conditions/High winds

Substantial contribution to Objective 2 — Climate change adaptation:

The greenfield projects are outside the scope of this activity

Demonstrate climate risk reduction or improved resilience through:

- For asset or activity with low or moderate risk: presentation of a qualitative and/or quantitative study;
- For asset or activity with high risk: implementation of a vulnerability assessment in accordance with the full process described in the specific methodology in Annex A2.

Risk levels must be determined in accordance with sections 1.1 and 1.2 of Annex A2

Do no significant harm:

In addition to the criteria described in the table below, the DNSH criteria for the socio-economic objective of reducing socio-economic inequalities, considering gender and race aspects, listed in Annex A1, must also be met, along with the cross-cutting DNSH criteria specific to the climate change adaptation objective.

Do no significant harm (to any of the following objectives):

Climate change mitigation	<p>Modernization/construction/expansion does not:</p> <ul style="list-style-type: none"> • Directly facilitate the expansion of fossil fuel use and extraction and/or • Relate to specific infrastructure with the sole purpose of transporting or storing fossil fuels.
Protection and restoration of biodiversity and ecosystems	<ul style="list-style-type: none"> • Present measures to prevent the fragmentation and degradation of natural and urban landscapes, as well as the risks of road incidents or accidents and wildlife accidents caused by collisions. • The indirect impact of the project should be considered, using a solid methodology to establish its area of indirect influence, which should take into account estimates of changes in socio-economic dynamics caused by the installation and operation of the infrastructure, especially how these changes may

Do no significant harm (to any of the following objectives):

	<p>alter land use, stimulate deforestation and cause other socio-environmental damage.</p> <ul style="list-style-type: none"> Take measures to monitor and protect urban ecosystems, especially public spaces, urban green areas and urban tree cover.
Conservation and sustainable management and use of soil and forests	<ul style="list-style-type: none"> If necessary, adopt measures to preserve biodiversity in the vicinity of infrastructure, ranging from maintaining vegetation within the infrastructure strip or area without compromising native vegetation to broader conservation actions to reduce impacts on fauna and flora in adjacent areas.
Sustainable use and protection of water and marine resources	<ul style="list-style-type: none"> N/A
Transition to a circular economy	<ul style="list-style-type: none"> Ensure that at least 20% (by weight) of the non-hazardous construction and demolition waste generated on-site is prepared for reuse, recycling and other types of material recovery. Utilization rates should increase to 40% by 2030, 60% by 2032 and reach 70% by 2035. Increasing the rate of reuse, recycling and/or recovery of materials should prioritize recycling and recovery at sites close to the project, minimizing the emissions associated with transporting materials over long distances.
Pollution prevention and control	<ul style="list-style-type: none"> Minimize noise and vibrations caused by the use of the infrastructure.
Reduction of socio-economic inequalities, considering racial and gender aspects	<ul style="list-style-type: none"> Annex A1: Do no significant harm criteria for socio-economic Objective 9.

HA5: Construction, expansion, operation and/or improvement of waterways and associated equipment adapted to flood and drought conditions

CNAEs:

- 42.9: Construction of other infrastructure works

Hazards:

Flood/drought damage

Substantial contribution to Objective 2 — Climate change adaptation:

Demonstrate climate risk reduction or improved resilience through:

- For asset or activity with low or moderate risk: presentation of a qualitative and/or quantitative study;
- For asset or activity with high risk: implementation of a vulnerability assessment in accordance with the full process described in the specific methodology in Annex A2.

Risk levels must be determined in accordance with sections 1.1 and 1.2 of Annex A2

Do no significant harm:

In addition to the criteria described in the table below, the DNSH criteria for the socio-economic objective of reducing socio-economic inequalities, considering gender and race aspects, listed in Annex A1, must also be met, along with the cross-cutting DNSH criteria specific to the climate change adaptation objective.

Do no significant harm (to any of the following objectives):

Climate change mitigation	<ul style="list-style-type: none"> • N/A
Climate change mitigation	<ul style="list-style-type: none"> • The activity/measure does not negatively affect the mitigation efforts of other public or private agents. • The activity/measure does not lead to an increase in net greenhouse gas emissions. • Economic activity is consistent with sectoral, regional, and/or national mitigation efforts.
Protection and restoration of biodiversity and ecosystems	<ul style="list-style-type: none"> • Present measures to prevent the fragmentation and degradation of natural and urban landscapes, as well as the risks of road incidents or accidents and wildlife accidents caused by collisions. • The indirect impact of the project should be considered, using a solid methodology to establish its area of indirect influence, which should take into account estimates of changes in socio-economic dynamics caused by the installation and operation of the infrastructure, especially how these changes may alter land use, stimulate deforestation and cause other socio-environmental damage.

	<ul style="list-style-type: none"> Take measures to monitor and protect urban ecosystems, especially public spaces, urban green areas and urban tree cover.
Conservation and sustainable management and use of soil and forests	<ul style="list-style-type: none"> If necessary, adopt measures to preserve biodiversity in the vicinity of infrastructure, ranging from maintaining vegetation within the infrastructure strip or area without compromising native vegetation to broader conservation actions to reduce impacts on fauna and flora in adjacent areas.
Sustainable use and protection of water and marine resources	<ul style="list-style-type: none"> N/A
Transition to a circular economy	<ul style="list-style-type: none"> Ensure that at least 20% (by weight) of the non-hazardous construction and demolition waste generated on-site is prepared for reuse, recycling and other types of material recovery. Utilization rates should increase to 40% by 2030, 60% by 2032 and reach 70% by 2035. Increasing the rate of reuse, recycling and/or recovery of materials should prioritize recycling and recovery at sites close to the project, minimizing the emissions associated with transporting materials over long distances.
Pollution prevention and control	<ul style="list-style-type: none"> Minimize noise and vibrations caused by the use of the infrastructure.
Reduction of socio-economic inequalities, considering racial and gender aspects	<ul style="list-style-type: none"> Annex A1: Do no significant harm criteria for socio-economic Objective 9.

Metro transport

HA6: Construction, expansion, operation and/or modernization of railway tracks, stations and equipment adapted to flooding

CNAEs:

- 42.2: Construction of railroads and related works

Hazards:

Flood damage

Substantial contribution to Objective 2 — Climate change adaptation:

Demonstrate climate risk reduction or improved resilience through:

- For asset or activity with low or moderate risk: presentation of a qualitative and/or quantitative study;
- For asset or activity with high risk: implementation of a vulnerability assessment in accordance with the full process described in the specific methodology in Annex A2.

Risk levels must be determined in accordance with sections 1.1 and 1.2 of Annex A2.

Do no significant harm:

In addition to the criteria described in the table below, the DNSH criteria for the socio-economic objective of reducing socio-economic inequalities, considering gender and race aspects, listed in Annex A1, must also be met, along with the cross-cutting DNSH criteria specific to the climate change adaptation objective.

Do no significant harm (to any of the following objectives):

Climate change mitigation	<ul style="list-style-type: none"> • N/A
Climate change mitigation	<ul style="list-style-type: none"> • The activity/measure does not negatively affect the mitigation efforts of other public or private agents. • The activity/measure does not lead to an increase in net greenhouse gas emissions. • Economic activity is consistent with sectoral, regional, and/or national mitigation efforts.
Protection and restoration of biodiversity and ecosystems	<ul style="list-style-type: none"> • Present measures to prevent the fragmentation and degradation of natural and urban landscapes, as well as the risks of road incidents or accidents and wildlife accidents caused by collisions. • The indirect impact of the project should be considered, using a solid methodology to establish its area of indirect influence, which should take into account estimates of changes in socio-economic dynamics caused by the installation and operation of the infrastructure, especially how these changes may alter land use, stimulate deforestation and cause other socio-environmental damage. • Take measures to monitor and protect urban ecosystems, especially public spaces, urban green areas and urban tree cover.

Conservation and sustainable management and use of soil and forests	<ul style="list-style-type: none"> • If necessary, adopt measures to preserve biodiversity in the vicinity of infrastructure, ranging from maintaining vegetation within the infrastructure strip or area without compromising native vegetation to broader conservation actions to reduce impacts on fauna and flora in adjacent areas.
Sustainable use and protection of water and marine resources	<ul style="list-style-type: none"> • N/A
Transition to a circular economy	<ul style="list-style-type: none"> • Ensure that at least 20% (by weight) of the non-hazardous construction and demolition waste generated on-site is prepared for reuse, recycling and other types of material recovery. Utilization rates should increase to 40% by 2030, 60% by 2032 and reach 70% by 2035. Increasing the rate of reuse, recycling and/or recovery of materials should prioritize recycling and recovery at sites close to the project, minimizing the emissions associated with transporting materials over long distances. •
Pollution prevention and control	<ul style="list-style-type: none"> • Minimize noise and vibrations caused by the use of the infrastructure.
Reduction of socio-economic inequalities, considering racial and gender aspects	<ul style="list-style-type: none"> • Annex A1: Do no significant harm criteria for socio-economic Objective 9.

Air transport

HA7: Construction, expansion, operation and/or modernization of airports, aircraft and equipment adapted to flooding

CNAEs:

- 42.9: Construction of other infrastructure works

Hazards:

Flood damage/high winds/thermal stress

Substantial contribution to Objective 2 — Climate change adaptation:

The greenfield projects are outside the scope of this activity.

Demonstrate climate risk reduction or improved resilience through:

- For asset or activity with low or moderate risk: presentation of a qualitative and/or quantitative study;
- For asset or activity with high risk: implementation of a vulnerability assessment in accordance with the full process described in the specific methodology in Annex A2.

Risk levels must be determined in accordance with sections 1.1 and 1.2 of Annex A2.

Do no significant harm:

In addition to the criteria described in the table below, the DNSH criteria for the socio-economic objective of reducing socio-economic inequalities, considering gender and race aspects, listed in Annex A1, must also be met, along with the cross-cutting DNSH criteria specific to the climate change adaptation objective.

Do no significant harm (to any of the following objectives):

Climate change mitigation	<ul style="list-style-type: none"> • The activity/measure does not negatively affect the mitigation efforts of other public or private agents. • The activity/measure does not lead to an increase in net greenhouse gas emissions. <p>Economic activity is consistent with sectoral, regional and/or national mitigation efforts</p>
Climate change mitigation	<ul style="list-style-type: none"> • The activity/measure does not negatively affect the mitigation efforts of other public or private agents. • The activity/measure does not lead to an increase in net greenhouse gas emissions. • Economic activity is consistent with sectoral, regional, and/or national mitigation efforts.
Protection and restoration of biodiversity and ecosystems	<ul style="list-style-type: none"> • Present measures to prevent the fragmentation and degradation of natural and urban landscapes, as well as the risks of road incidents or accidents and wildlife accidents caused by collisions. • The indirect impact of the project should be considered, using a solid methodology to establish its area of indirect influence, which should take into account estimates of changes in socio-economic dynamics caused by the installation and operation of the infrastructure, especially how these changes may alter land use, stimulate deforestation and cause other socio-environmental damage. • Take measures to monitor and protect urban ecosystems, especially public spaces, urban green areas and urban tree cover.

Conservation and sustainable management and use of soil and forests	<ul style="list-style-type: none"> If necessary, adopt measures to preserve biodiversity in the vicinity of infrastructure, ranging from maintaining vegetation within the infrastructure strip or area without compromising native vegetation to broader conservation actions to reduce impacts on fauna and flora in adjacent areas.
Sustainable use and protection of water and marine resources	<ul style="list-style-type: none"> N/A
Transition to a circular economy	<ul style="list-style-type: none"> Ensure that at least 20% (by weight) of the non-hazardous construction and demolition waste generated on-site is prepared for reuse, recycling and other types of material recovery. Utilization rates should increase to 40% by 2030, 60% by 2032 and reach 70% by 2035. Increasing the rate of reuse, recycling and/or recovery of materials should prioritize recycling and recovery at sites close to the project, minimizing the emissions associated with transporting materials over long distances.
Pollution prevention and control	<ul style="list-style-type: none"> Minimize noise and vibrations caused by the use of the infrastructure.
Reduction of socio-economic inequalities, considering racial and gender aspects	<ul style="list-style-type: none"> Annex A1: Do no significant harm criteria for socio-economic Objective 9.

Multimodal / Transversal

HA8: Implementation of Nature-based Solutions (NbS) or Ecosystem-based Adaptation (EbA) projects for transport systems

CNAEs:

- 71.1: Architectural and engineering services and related technical activities

Description

Systems designed to collect, store, treat or distribute water and mitigate the impacts of floods or droughts. These systems integrate natural and nature-based resources, processes and functions to increase the resilience of transportation networks, ensuring a more resilient and sustainable response to water management challenges.

Hazards

Flood damage

Substantial contribution to Objective 2 — Climate change adaptation:

The activity must meet all of the following criteria:

- The activity is identified as a flood risk reduction measure that could affect existing transportation networks. This should be part of a comprehensive resilient infrastructure planning plan, in which climate risk information is incorporated into decision-making by transport planning organizations and contracting organizations. These plans pursue flood risk management objectives to reduce adverse impacts, where appropriate, on transportation infrastructure.
- Risks of environmental degradation related to preserving water quality and preventing deterioration in the status of affected water bodies identified near transport infrastructure are identified and addressed, in order to achieve good water status and ecological potential, following a basin management plan in consultation with relevant stakeholders.
- The activity includes actions for the restoration or conservation of areas close to transport infrastructure that contribute to reducing the frequency and severity of extreme events. Local stakeholders are involved right from the start in the planning and design phase.
- The activity should avoid mass earthworks during periods of high rainfall, when the risk of seasonal flooding, flash floods and erosion is greatest.
- A systematic and comprehensive monitoring program is in place to evaluate the effectiveness of the flood risk reduction measure. The achievement of conservation and restoration objectives for the main areas near transport infrastructure is assessed, as well as the adaptation and resilience of the infrastructure in the face of changing climate conditions.

Do no significant harm

In addition to the criteria described in the table below, the DNSH criteria for the socio-economic objective of reducing socio-economic inequalities, considering gender and race aspects, listed in Annex A1, must also be met, along with the cross-cutting DNSH criteria specific to the climate change adaptation objective.

Do no significant harm (to any of the following objectives):

Climate change mitigation	<ul style="list-style-type: none"> • N/A
Protection and restoration of biodiversity and ecosystems	<ul style="list-style-type: none"> • The activity does not harm the recovery or maintenance of populations of protected species; the activity does not harm the recovery or maintenance of affected and protected habitats; it prevents the introduction of invasive alien species or manages their spread (protection of healthy ecosystems and biodiversity).
Conservation and sustainable management and use of soil and forests	<ul style="list-style-type: none"> • N/A

Do no significant harm (to any of the following objectives):

Sustainable use and protection of water and marine resources	<ul style="list-style-type: none"> The activity does not imply degradation of the terrestrial and marine environment with high carbon stocks (climate change mitigation)
Transition to a circular economy	<ul style="list-style-type: none"> N/A
Pollution prevention and control	<ul style="list-style-type: none"> The construction of any civil work must have a construction and demolition waste management plan, ensuring the implementation of the best environmental practices
Reduction of socio-economic inequalities, considering racial and gender aspects	<ul style="list-style-type: none"> N/A

HA9: Wetland restoration and flood detour interventions as nature-based solutions**CNAEs:**

- 81.3: Landscape activities

Description

Wetland restoration contributes to the recovery of these ecosystems for various purposes, including biodiversity conservation, habitat expansion, water quality improvement, coastal protection and support for productive projects. In the context of transportation, restored wetlands and flood detours can increase the resilience of transportation infrastructure by providing natural buffers against flooding, reducing the risk of damage to roads and bridges. For effective restoration, it may be sufficient to restore the physical conditions of the site to allow hydrophilic vegetation to develop; however, in some cases, it is necessary to modify additional parameters such as topography, substrate characteristics and even introduce specific plant species.

Hazards

Flood damage

Substantial contribution to Objective 2 — Climate change adaptation:

The activity must meet the following criteria:

- Verify and demonstrate, through a technical assessment, that the transportation infrastructure does not alter hydrological systems and restoration efforts to improve wetland connectivity. See the International Union for Conservation of Nature (IUCN) guidelines for addressing ecological connectivity in the development of roads, railroads and canals (IUCN, 2023).
- The activity is identified as a flood risk reduction measure that could affect existing transportation networks. This restoration activity should be part of a comprehensive resilient infrastructure planning plan, in which climate risk information is incorporated into decision-making by transport planning organizations and contracting organizations. These plans pursue flood risk management objectives to reduce adverse impacts, where appropriate, on transportation infrastructure.
- Identify the wetland ecosystems near the area where the transport infrastructure is located and check that the criteria established in the wetland restoration activity in the water sector are applied.

Do no significant harm:

In addition to the criteria described in the table below, the DNSH criteria for the socio-economic objective of reducing socio-economic inequalities, considering gender and race aspects, listed in Annex A1, must also be met, along with the cross-cutting DNSH criteria specific to the climate change adaptation objective.

Do no significant harm (to any of the following objectives):

Climate change mitigation	<ul style="list-style-type: none"> • N/A
Protection and restoration of biodiversity and ecosystems	<ul style="list-style-type: none"> • Projects must comply with national regulations. • Perform monitoring and surveillance of agricultural activities in areas affecting the ecosystem to prevent impacts from indirect activities caused by the use of pesticides, agrochemicals and chemical fertilizers. • Ensure that there is no conversion of habitats specifically sensitive to biodiversity loss or of high conservation value, or of areas set aside for the restoration of these habitats in accordance with national legislation. • The restoration plan should include provisions to maintain and, where appropriate, enhance biodiversity in accordance with national and local provisions. • To ensure the good conservation status of the habitat and species, the maintenance of species typical of the habitat, to exclude the use or release of invasive species.
Conservation and sustainable management and use of soil and forests	<ul style="list-style-type: none"> • N/A

Do no significant harm (to any of the following objectives):

Sustainable use and protection of water and marine resources	<ul style="list-style-type: none"> N/A
Transition to a circular economy	<ul style="list-style-type: none"> N/A
Pollution prevention and control	<ul style="list-style-type: none"> N/A
Reduction of socio-economic inequalities, considering racial and gender aspects	<ul style="list-style-type: none"> N/A

Qualified measures

Measure	Hazards	Criteria
Road transport		
HA10. Management of floodways on roads / installation of high-water detour	Flood damage	<p>Demonstrate climate risk reduction or improved resilience through:</p> <ul style="list-style-type: none"> For asset or activity with low or moderate risk: presentation of a qualitative and/or quantitative study; For asset or activity with high risk: implementation of a vulnerability assessment in accordance with the full process described in the specific methodology in Annex A2.

Measure	Hazards	Criteria
		Risk levels must be determined in accordance with sections 1.1 and 1.2 of Annex A2.
HA11. Road/bridge height adjustment	Flood damage	<p>Demonstrate climate risk reduction or improved resilience through:</p> <ul style="list-style-type: none"> • For asset or activity with low or moderate risk: presentation of a qualitative and/or quantitative study; • For asset or activity with high risk: implementation of a vulnerability assessment in accordance with the full process described in the specific methodology in Annex A2. <p>Risk levels must be determined in accordance with sections 1.1 and 1.2 of Annex A2.</p>
HA12. Expansion of climate-resistant evacuation routes	Flood damage	<p>Demonstrate climate risk reduction or improved resilience through:</p> <ul style="list-style-type: none"> • For asset or activity with low or moderate risk: presentation of a qualitative and/or quantitative study; • For asset or activity with high risk: implementation of a vulnerability assessment in accordance with the full process described in the specific methodology in Annex A2. <p>Risk levels must be determined in accordance with sections 1.1 and 1.2 of Annex A2.</p>
HA13. Creation of flood defenses on roads, such as retention basins or flow diversion/road diversion/embankment pits	Flood damage	<p>Demonstrate climate risk reduction or improved resilience through:</p> <ul style="list-style-type: none"> • For asset or activity with low or moderate risk: presentation of a qualitative and/or quantitative study; • For asset or activity with high risk: implementation of a vulnerability assessment in accordance with the full process described in the specific methodology in Annex A2. <p>Risk levels must be determined in accordance with sections 1.1 and 1.2 of Annex A2.</p>

Measure	Hazards	Criteria
Water transport		
HA14. Reinforcement and lifting of rip-rap structures (ports)	Flood damage/Changes in sea conditions/High winds	<p>Demonstrate climate risk reduction or improved resilience through:</p> <ul style="list-style-type: none"> • For asset or activity with low or moderate risk: presentation of a qualitative and/or quantitative study; • For asset or activity with high risk: implementation of a vulnerability assessment in accordance with the full process described in the specific methodology in Annex A2. <p>Risk levels must be determined in accordance with sections 1.1 and 1.2 of Annex A2.</p>
HA15. Protecting cargo from flooding (ports)	Flood damage	Directly qualified
HA16. Improving drainage systems (ports)	Flood damage	<p>Demonstrate climate risk reduction or improved resilience through:</p> <ul style="list-style-type: none"> • For asset or activity with low or moderate risk: presentation of a qualitative and/or quantitative study; • For asset or activity with high risk: implementation of a vulnerability assessment in accordance with the full process described in the specific methodology in Annex A2. <p>Risk levels must be determined in accordance with sections 1.1 and 1.2 of Annex A2.</p>
HA17. Renovation of infrastructure or equipment vulnerable to flooding (ports)	Flood damage	<p>Demonstrate climate risk reduction or improved resilience through:</p> <ul style="list-style-type: none"> • For asset or activity with low or moderate risk: presentation of a qualitative and/or quantitative study; • For asset or activity with high risk: implementation of a vulnerability assessment in accordance with the full process described in the specific methodology in Annex A2.

Measure	Hazards	Criteria
		Risk levels must be determined in accordance with sections 1.1 and 1.2 of Annex A2.
HA18. Modification to the layout of structures in the organized port area	Flood damage/Changes in sea conditions/High winds	<p>Demonstrate climate risk reduction or improved resilience through:</p> <ul style="list-style-type: none"> • For asset or activity with low or moderate risk: presentation of a qualitative and/or quantitative study; • For asset or activity with high risk: implementation of a vulnerability assessment in accordance with the full process described in the specific methodology in Annex A2. <p>Risk levels must be determined in accordance with sections 1.1 and 1.2 of Annex A2.</p>
HA19. Adjusting the storage of storm-sensitive loads	Flood damage	<p>Demonstrate climate risk reduction or improved resilience through:</p> <ul style="list-style-type: none"> • For asset or activity with low or moderate risk: presentation of a qualitative and/or quantitative study; • For asset or activity with high risk: implementation of a vulnerability assessment in accordance with the full process described in the specific methodology in Annex A2. <p>Risk levels must be determined in accordance with sections 1.1 and 1.2 of Annex A2.</p>
HA20. Overhaul of belts, lighting systems and general infrastructure (ports)	Flood damage/Changes in sea conditions/High winds	Directly qualified
HA21. Reinforcement of breakwaters, quays, buildings and equipment	Flood damage/Changes in sea conditions/High winds	<p>Demonstrate climate risk reduction or improved resilience through:</p> <ul style="list-style-type: none"> • For asset or activity with low or moderate risk: presentation of a qualitative and/or quantitative study; • For asset or activity with high risk: implementation of a vulnerability assessment in accordance with the full process described in the specific methodology in Annex A2.

Measure	Hazards	Criteria
		Risk levels must be determined in accordance with sections 1.1 and 1.2 of Annex A2.
HA22. Increased channel dredging	Flood damage	<p>Demonstrate climate risk reduction or improved resilience through:</p> <ul style="list-style-type: none"> • For asset or activity with low or moderate risk: presentation of a qualitative and/or quantitative study; • For asset or activity with high risk: implementation of a vulnerability assessment in accordance with the full process described in the specific methodology in Annex A2. <p>Risk levels must be determined in accordance with sections 1.1 and 1.2 of Annex A2.</p>
HA23. Pumps to evacuate floodwater at port terminals	Flood damage	Directly qualified
HA24. Elevated quay superstructure, breakwater or breakwaters	Flood damage/Changes in sea conditions/High winds	<p>Demonstrate climate risk reduction or improved resilience through:</p> <ul style="list-style-type: none"> • For asset or activity with low or moderate risk: presentation of a qualitative and/or quantitative study; • For asset or activity with high risk: implementation of a vulnerability assessment in accordance with the full process described in the specific methodology in Annex A2. <p>Risk levels must be determined in accordance with sections 1.1 and 1.2 of Annex A2.</p>
HA25. Restore waterway infrastructure damaged by severe weather events, within a reasonable time after stabilizing land use (ports)	Multi-risk	Directly qualified
HA26. Conduct studies to increase the climate resilience of waterway infrastructures (ports)	Multi-risk	Directly qualified

Measure	Hazards	Criteria
HA27. Implement water quantity and quality monitoring systems for modeling events (ports)	Flood damage	Directly qualified
HA28. Preserving or restoring the vegetation cover of the land in a watershed and managing rainwater runoff (waterways)	Flood damage	<p>Demonstrate climate risk reduction or improved resilience through:</p> <ul style="list-style-type: none"> • For asset or activity with low or moderate risk: presentation of a qualitative and/or quantitative study; • For asset or activity with high risk: implementation of a vulnerability assessment in accordance with the full process described in the specific methodology in Annex A2. <p>Risk levels must be determined in accordance with sections 1.1 and 1.2 of Annex A2.</p>
HA29. Use bio-retention to collect rainwater runoff or use underground storage systems to retain runoff in underground containers (waterways)	Flood damage	<p>Demonstrate climate risk reduction or improved resilience through:</p> <ul style="list-style-type: none"> • For asset or activity with low or moderate risk: presentation of a qualitative and/or quantitative study; • For asset or activity with high risk: implementation of a vulnerability assessment in accordance with the full process described in the specific methodology in Annex A2. <p>Risk levels must be determined in accordance with sections 1.1 and 1.2 of Annex A2.</p>
HA30. Green infrastructure: green space designed to protect, restore or mimic the natural water cycle and reduce risks to gray infrastructure (waterways)	Flood damage	<p>Demonstrate climate risk reduction or improved resilience through:</p> <ul style="list-style-type: none"> • For asset or activity with low or moderate risk: presentation of a qualitative and/or quantitative study; • For asset or activity with high risk: implementation of a vulnerability assessment in accordance with the full process described in the specific methodology in Annex A2. <p>Risk levels must be determined in accordance with sections 1.1 and 1.2 of Annex A2.</p>

Measure	Hazards	Criteria
HA31. Use of tree trenches to store and filter rainwater runoff (waterways)	Flood damage	<p>Demonstrate climate risk reduction or improved resilience through:</p> <ul style="list-style-type: none"> • For asset or activity with low or moderate risk: presentation of a qualitative and/or quantitative study; • For asset or activity with high risk: implementation of a vulnerability assessment in accordance with the full process described in the specific methodology in Annex A2. <p>Risk levels must be determined in accordance with sections 1.1 and 1.2 of Annex A2.</p>
HA32. Construction of floating piers	Flood damage	Directly qualified
HA33. Monitor surface water conditions, upstream runoff, water flow (waterways)	Drought	<p>Demonstrate climate risk reduction or improved resilience through:</p> <ul style="list-style-type: none"> • For asset or activity with low or moderate risk: presentation of a qualitative and/or quantitative study; • For asset or activity with high risk: implementation of a vulnerability assessment in accordance with the full process described in the specific methodology in Annex A2. <p>Risk levels must be determined in accordance with sections 1.1 and 1.2 of Annex A2.</p>
HA34. Increase system efficiency through gray water recycling, joint use and other practices to maintain navigability during periods of drought (waterways)	Drought	<p>Demonstrate climate risk reduction or improved resilience through:</p> <ul style="list-style-type: none"> • For asset or activity with low or moderate risk: presentation of a qualitative and/or quantitative study; • For asset or activity with high risk: implementation of a vulnerability assessment in accordance with the full process described in the specific methodology in Annex A2. <p>Risk levels must be determined in accordance with sections 1.1 and 1.2 of Annex A2.</p>

Measure	Hazards	Criteria
Metro transport		
HA35. Pumps to evacuate floodwater from metro stations	Flood damage	Directly qualified
HA36. Road/bridge height adjustment	Flood damage	<p>Demonstrate climate risk reduction or improved resilience through:</p> <ul style="list-style-type: none"> For asset or activity with low or moderate risk: presentation of a qualitative and/or quantitative study; For asset or activity with high risk: implementation of a vulnerability assessment in accordance with the full process described in the specific methodology in Annex A2. <p>Risk levels must be determined in accordance with sections 1.1 and 1.2 of Annex A2.</p>
Air transport		
HA37. New heat-resistant asphalt materials in airport air infrastructure	Heat stress	Directly qualified
HA38. Extension of the runway adapted to climate change in the air infrastructure of airports	Multi-risk	Vulnerability assessment
HA39. Water management and implementation of flood defenses at airports by waterproofing electrical cables and additional protection for other assets	Flood damage	Vulnerability assessment
HA40. Maintenance of existing embankments and sea dikes near airports; reinforcement of rip-rap areas protecting runways on the seaside of airports; relocation/construction of new airports	Flood damage	Vulnerability assessment

Measure	Hazards	Criteria
HA41. Execution of preventive services and works against the possibility of deformation of the runway pavement (airports and aerodromes)	Multi-risk	Directly qualified
HA42. Execution of preventive works against sea level rise, including "Ecosystem-Based Adaptation" actions (airports and aerodromes)	Flood damage	Directly qualified

Measure	Hazards	Criteria
HA43. Expansion of capacity and maintenance services for air conditioning and ventilation systems. (airports and aerodromes)	Heat stress	Directly qualified
Multimodal / Transversal		
HA44. Reinforcement of the main submerged road structures	Flood damage	<p>Demonstrate climate risk reduction or improved resilience through:</p> <ul style="list-style-type: none"> For asset or activity with low or moderate risk: presentation of a qualitative and/or quantitative study; For asset or activity with high risk: implementation of a vulnerability assessment in accordance with the full process described in the specific methodology in Annex A2. <p>Risk levels must be determined in accordance with sections 1.1 and 1.2 of Annex A2.</p>
HA45. Removing obstructions in channels	Drought	<p>Demonstrate climate risk reduction or improved resilience through:</p> <ul style="list-style-type: none"> For asset or activity with low or moderate risk: presentation of a qualitative and/or quantitative study; For asset or activity with high risk: implementation of a vulnerability assessment in accordance with the full process described in the specific methodology in Annex A2. <p>Risk levels must be determined in accordance with sections 1.1 and 1.2 of Annex A2.</p>
HA46. Installation of refrigeration systems in public transport infrastructure and facilities	Heat stress	<p>Demonstrate climate risk reduction or improved resilience through:</p> <ul style="list-style-type: none"> For asset or activity with low or moderate risk: presentation of a qualitative and/or quantitative study; For asset or activity with high risk: implementation of a vulnerability assessment in accordance with the full

Measure	Hazards	Criteria
		<p>process described in the specific methodology in Annex A2.</p> <p>Risk levels must be determined in accordance with sections 1.1 and 1.2 of Annex A2.</p>
HA47. Implementation of shading structures around public transport infrastructure and facilities	Heat stress	Directly qualified
HA48. Provision of real-time information systems and travel planning tools for users	Heat stress	Directly qualified
HA49. Improving emergency response capabilities / Adaptation plans for infrastructure operations	Changes in marine conditions/ Flood damage	Directly qualified
HA50. Research and studies to determine the vulnerability factors in transport networks that can affect nodes and lines, as well as operations, and identify possible interventions to reduce these impacts	Multi-risk	Directly qualified
HA51. Updating construction standards, maintenance practices, among others, incorporating strategies to improve resilience	Multi-risk	Directly qualified
HA52. Early warning system for natural disasters, digital solutions and software for the transportation sector	Multi-risk	Directly qualified
HA53. Increase response and recovery capacity (including personnel, materials, equipment)	Multi-risk	Directly qualified
HA54. Expansion of personnel and equipment for fire prevention and firefighting services	Heat stress	Directly qualified

Measure	Hazards	Criteria
HA55. Execution of preventive services and works against vegetation fires, including "Ecosystem-Based Adaptation" actions	Heat stress	Directly qualified
HA56. Set up a monitoring center and issue alerts; and Installing equipment to monitor weather events	Multi-risk	Directly qualified
HA57. Any other activity or measure that contributes to improving the resilience of transport infrastructure	Multi-risk	Vulnerability assessment
HA58. Dewatering or installation of waterproof membranes in existing slip areas to prevent over-saturation	Flood damage	<p>Demonstrate climate risk reduction or improved resilience through:</p> <ul style="list-style-type: none"> • For asset or activity with low or moderate risk: presentation of a qualitative and/or quantitative study; • For asset or activity with high risk: implementation of a vulnerability assessment in accordance with the full process described in the specific methodology in Annex A2. <p>Risk levels must be determined in accordance with sections 1.1 and 1.2 of Annex A2.</p>
HA59. Rating to reduce inclination	Mass movement	Directly qualified
HA60. Installation of water collection measures, such as water bars, rolling depressions and infiltration bunds	Flood damage	Directly qualified
HA61. Construction of rock buttresses and retaining walls	Mass movement	Vulnerability assessment
HA62. Expansions, reinforcement and upgrading of shelter infrastructures	Flood damage Changes in sea conditions High winds	Demonstrate climate risk reduction or improved resilience through:

Measure	Hazards	Criteria
		<ul style="list-style-type: none"> For asset or activity with low or moderate risk: presentation of a qualitative and/or quantitative study; For asset or activity with high risk: implementation of a vulnerability assessment in accordance with the full process described in the specific methodology in Annex A2. <p>Risk levels must be determined in accordance with sections 1.1 and 1.2 of Annex A2.</p>
HA63. Restoration of transport infrastructure systems after extreme events, considering the non-reconstruction of vulnerability.	Multi-risk	Vulnerability assessment

Cross-cutting criteria of do no significant harm (specific approach to Objective 2)

The following criteria apply to all activities and measures listed in the Adapted and Enabling activities and measures, as well as any other activity that contributes to the sector's resilience, provided it is backed up by a Vulnerability assessment (Annex A2). The criteria of do no significant harm are based on the adoption of complementary criteria to the substantial contribution criteria, with the aim of ensuring that their implementation does not cause adverse impacts on TSB's other climate, environmental, economic and social objectives.

Table 1. Specific do no significant harm criteria for climate change adaptation (Objective 2).

Do no significant harm (DNSH):	
Generics	<ul style="list-style-type: none"> Aligned assets and activities must adhere to the local regulatory framework and policies relevant to their activity and the territory in which they are carried out, as well as having an environmental management system in place. Entities implementing economic activities or asset owners must demonstrate the existence of a management system commensurate with the size of the investment and the scale of the project/entity implementing the financing. The aligned activity must ensure that it does not generate a negative social impact. To do this, they must adhere to the relevant local regulatory framework and policies and have a social management system in place.

Do no significant harm (DNSH):

Climate change mitigation	<ul style="list-style-type: none"> • The activity/measure does not negatively affect the mitigation efforts of other public or private agents. • The activity/measure does not lead to an increase in net greenhouse gas emissions. • Economic activity is consistent with sectoral, regional, and/or national mitigation efforts.
Protection and restoration of biodiversity and ecosystems	<ul style="list-style-type: none"> • New constructions should not be located in areas that are strategic for food security, rich in biodiversity or serve as habitats for endangered species, such as those protected by national laws or listed on the IUCN Red List. • If the facilities are close to sensitive areas, such as United Nations Educational, Scientific and Cultural Organization (UNESCO) World Heritage Sites or protected areas, an assessment must be carried out in accordance with the criteria of the International Finance Corporation's (IFC) Performance Standard No. 6 or an equivalent national instrument. It is also necessary to implement a long-term biodiversity monitoring program.
Sustainable soil use and conservation, management and sustainable use of forests.	<ul style="list-style-type: none"> • The activity or asset does not alter the physico-chemical and biological integrity of the soil but instead improves the state of this resource.
Transition to a circular economy	<ul style="list-style-type: none"> • Apply the principles of the Circular Economy (EU Parliament, 2023) or national standards related to the removal and dismantling of plants and infrastructures. • Seek maximum efficiency in the use of materials, promoting their reduction, repair, recycling and reuse, as well as ensuring the proper treatment and disposal of waste, such as batteries or Waste Electrical and Electronic Equipment (WEEE), complying with the principles of extended producer responsibility. (ELLEN MACARTHUR FOUNDATION, 2021) • Design and build new facilities so that they are durable and easy to dismantle, renovate, and recycle. • Ensure the proper repair of facilities and equipment, and the accessibility and interchangeability of equipment components.
Pollution prevention and control	<ul style="list-style-type: none"> • Water discharges must comply with the discharge permits of the competent National Environmental Authority. • Emissions that pollute the air must have the necessary permits and comply with current national legislation, with special attention to hazardous waste. • Integrated management of the waste generated must be carried out by duly authorized waste managers.

Do no significant harm (DNSH):

Sustainable use and protection of water and marine resources

- Identify, assess, and manage the risks associated with water consumption and quality. Water quality risk analysis tools should be used when available.
- If the assets or activities are located in water stress areas, the implementation of water use handling and conservation plans, developed in coordination with the relevant local entities, must be guaranteed.

Reduction of socio-economic inequalities, considering racial and gender aspects

- Annex A1: Do no significant harm criteria for socio-economic Objective 9.

Source: Own elaboration.

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