



cardano Principle Adverse Impact
Statement (PAI)

Article 4 of the SFDR (Regulation (EU) 2019/2088)

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1. Summary



Cardano Risk Management B.V. (“Cardano”), LEI 724500M76LX58E3PW491 considers principal adverse impacts of its investment decisions on sustainability factors as part of its investment process and procedures. The present statement is the consolidated statement on principal adverse impacts on sustainability factors of Cardano Risk Management B.V.¹ This statement on principal adverse impacts on sustainability factors covers the reference period from 1st January 2022 to 31st of December 2022.

This Principal Adverse Impacts Statement, as required by the Sustainable Finance Disclosure Regulation (‘SFDR’), outlines how Cardano considers principal adverse sustainability impacts of its investment decisions for the investments made for the account of our professional clients. Cardano does not invest for its own account. These factors are divided by the SFDR in environmental, social and employee matters, respect for human rights, anti-corruption and anti-bribery matters and

provides the investor with insight into adverse impacts of our investment decisions on sustainability factors.

In chapter 2, this statement provides the quantitative impact of the relevant indicators related to principal adverse impacts of Cardano’s investment decisions on sustainability factors. This statement also provides a qualitative summary about how Cardano takes these factors into account in relation to its investment decisions.

Cardano includes a broad range of principal adverse impacts in its investment decisions. As Cardano does not own any real estate, the real estate related principal adverse indicators (indicator 17 and 18) are not covered. A summary of the principal adverse impacts that are considered is given in section ‘screening’ of chapter 3.

¹ Financial market participant: Cardano Risk Management B.V., LEI 724500M76LX58E3PW491

2. Description of the principal adverse impacts on sustainability factors

The indicators, as included in Annex I of the SFDR Delegated Act, are set out in the table below. These indicators must be considered to ensure that adverse impacts on sustainability factors are taken into consideration. For each of these indicators, information is included to describe the actions taken and actions planned.

The results on the impact of the investments on these indicators will be published on an annual basis. This information will cover the period of 1 January until 31 December of the preceding year. A comparison of the impacts with the previous year, will for the first time be included in the publication in 2024, and continuously on an annual basis. The impact of each indicator as included in the table below, is the average of the impacts on 31 March, 30 June, 30 September and 31 December of each reference period.



Indicators applicable to investments in investee companies

Adverse Sustainability indicator	Metric	Impact 2022	Impact 2021	Explanation	Actions taken, and actions planned and targets set for the next reference period
Climate and other environment related indicators					
1. GHG emissions (ton CO2e)	1.1 Scope 1 GHG emissions	3.333	NA	NA	<p>Cardano has set the target to reach net-zero greenhouse gas emissions through its investments at the latest by 2050, with an intermediate target to reach a greenhouse gas reduction of 50% in 2030 and 75% in 2040 compared to 2020.</p> <p>Cardano's climate strategy is built on the following mitigation measures: Invest via ESG bonds in solutions that reduce greenhouse gas emissions, increase low-carbon energy supply or that avoid or that capture and store greenhouse gas emissions.</p>
	1.2 Scope 2 GHG emissions	490	NA	NA	
	1.3 Scope 3 GHG emissions	15.774	NA	NA	
	1.4 Total ghg emissions scope 1 & 2	3.823	NA	NA	
	1.5 Total ghg emissions scope 1, 2 & 3	19.596	NA	NA	
2. Carbon footprint (ton CO2e/m€)	2.1 Carbon footprint - Total emissions scope 1 & 2	9	NA	NA	<p>INVESTMENT IN SOLUTIONS</p> <p>In its LDI mandates, Cardano will continuously search for (government related) issuers providing solutions that prevent climate change. These may be technological solutions that reduce or reverse the greenhouse gas emissions of existing processes, or the development of new, climate-friendly or climate-positive products.</p>
	2.2 Carbon footprint - Total emissions scope 1, 2 & 3	46	NA	NA	
3. GHG intensity of investee companies (ton CO2e/m€)	GHG intensity of investee companies - scope 1 & 2	9	NA	NA	
	GHG intensity of investee companies - scope 1, 2 & 3	2.075	NA	NA	

Indicators applicable to investments in investee companies

Adverse Sustainability indicator	Metric	Impact 2022	Impact 2021 ²	Explanation ³	Actions taken, and actions planned and targets set for the next reference period
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Indicators applicable to investments in sovereigns and supranationals

15. GHG intensity (Kton CO2e/m€)	15.1 GHG intensity of investee countries	0,15	NA		As part of due diligence of sovereigns and supranationals, Cardano carefully considers how sovereigns deal with the environmental and social challenges they are confronted with. Sovereigns that violate international treaties on human rights, violate principles of good governance or do not sufficiently well manage their natural resources may be excluded from investment. Through engagement with a small number of governments and by supporting environment and climate related conventions by multilateral organizations such as the UN or EU, efforts are made to create a level playing field among investee companies.
16. Investee countries subject to social violations (number)	16.1 Number of investee countries subject to social violations (relative number), as referred to in international treaties and conventions, United Nations principles and, where applicable, national law	0	NA	NA	

Extra indicators

Table 2 - 4. Investments in companies without carbon emission reduction	Share of investments in investee companies without carbon emission reduction initiatives aimed at aligning with the Paris Agreement	67,1%	NA		Data-coverage is low: 6%
Table 3 - 8. Excessive CEO pay ratio	Average ratio within investee companies of the annual total compensation for the highest compensated individual to the median annual total compensation for all employees (excluding the highest-compensated individual)	9,9	NA	NA	Data-coverage is low: 4%

Notes:

Indicators 1 to 3 are based on MSCI reported data about carbon scope 1, 2 and 3 emissions, enterprise value and sales revenues. The other indicators are based on data from Sustainalytics. Most of the indicators are based on estimated data because a relatively small number of companies already reported about these elements in 2021 and 2022. It is expected that as of 2023 more companies will report these matters in their annual reports, due to which updates of the PAI statement will gradually include more reported data. Numbers shown reflect averages for the Cardano Risk Management B.V. managed mandates only for those issuers for which data are available. Those for which no data are reported or estimated are not considered in the calculations.

3. Description of policies to identify and prioritise principal adverse sustainability impacts

The Cardano [Sustainability Policy](#), approved by the Board in September 2022, aims to stimulate countries, institutions and companies to prosper, while operating within the planetary boundaries and respect the social foundations of society. Cardano refers to this as the ‘safe and just operating zone’, where global challenges such as climate change, resource scarcity, social injustice and inequality are properly managed. The planetary boundaries and social foundations indicate the maximum of natural resources humanity can use without exhausting the planet and minimum universal social and governance norms affecting health, wealth and well-being.

The Cardano Sustainability Policy provides our vision on sustainable investments. The policy provides a holistic view on the roles that investors play to guide the transition to a sustainable society. As part of our sustainable investment policy, we assess the adverse sustainability impacts caused by every country, institution and company within our investable universe. The Cardano Sustainability Policy is laid out in more detail within four documents, the first of which described the general Sustainable Investment Framework.

The Sustainable Investment Framework includes a set of criteria to identify and prioritise adverse impacts that companies, (sub)sovereigns or institutions (together, ‘entities’) have on sustainability factors, including climate, biodiversity, water quality and availability, labour rights, human rights, anti-corruption and anti-bribery matters. This framework guides Cardano’s investment decisions for investing in entities that operate within the planetary boundaries to help create a sustainable society, while at the same time generating long-term financial returns for our clients. This framework forms the basis of our Sustainability Policy. The more detailed delineations on how this framework is interpreted and implemented is described in the other three documents.

The basis of the Cardano Sustainability Policy is that companies, institutions and countries have to comply with the Cardano Fundamental Investment Principles. These principles define the bottom-line of the investments and relate to how investment decisions comply with a set of socio-ethical factors related to impacts on humans, society and the environment. These principles form the foundational layer of the Sustainable Investment



Framework. If companies, institutions or countries are found to have structurally violated one or more of these principles by having a severe adverse impact, then Cardano will not invest in these entities.

Furthermore, Cardano assesses the adaptive capacity of entities to prepared themselves for the transition towards a more sustainable society. This is done for seven Material Sustainability Drivers. These drivers are used as guidelines for determining how entities are responding to challenges in society, policy and the market that is driven by the sustainability transition. The drivers help us asses the level of sustainability of companies’ processes and products. For governments, the drivers reflect the alignment of policies, laws and regulations with planetary boundaries and social foundations.

Based on the assessment of the Fundamental Investment Principles and the Material Sustainability Drivers each entity is categorised with the Sustainable Investment Framework. The category determines the responsible investment instruments that apply to a company, (sub) sovereign or institution and the investment strategies and solutions in which an entity fits.

Cardano uses several Sustainable Investment Instruments to identify sustainability risks and opportunities and minimise adverse sustainability impacts within our remaining investment universe, including: screening, engagement, voting and ESG integration. The Sustainable Investment Instruments are used to implement the Sustainable Investment Policy and stimulate behavioural change.

Screening

For all entities in the investable universe Cardano assesses to what extent they comply with the Cardano Fundamental Investment Principles and their adaptive capacity according to the Material Sustainability Drivers. Cardano believes that entities will be better prepared for the future if they take sustainability related risks into account and minimise their adverse impact. This is measured through the assessment procedure. In addition, Cardano believes that entities will be better prepared for the future if they also contribute actively to the Sustainable Development Goals (“SDGs”) of the United Nations. That is why Cardano wants to invest actively in these entities and specifically screens taking the SDGs and planetary boundaries into account. Our active approach enables us to select entities that score highly on these aspects.

The screening is based on a large number of quantitative and qualitative indicators and own research. The PAI indicators 10, 11 and 15, related to compliance to international norms and standards, are at the basis of the Fundamental Investment Principles. The other PAI indicators are considered when assessing the adaptive capacity of companies. The indicators applied in this screening are outlined in the table below, where the screening procedure applies thresholds for each of the indicators to categorize companies in the Cardano Sustainable Investment Framework.

Sustainability theme	Indicators used for the screening	Principal adverse indicators that are part of this screening
Fossil fuel use	Indicators showing expansion plans of coal-fired power plants, carbon footprint, energy intensity and energy use, (science based) GHG reduction targets, exposure to fossil fuel activities. Alignment with the Paris agreement, quality of GHG reduction strategies.	1) greenhouse gas emissions, 2) carbon footprint, 3) GHG intensity of investee companies, 4) exposure to companies active in the fossil fuel sector, 5) share of non-renewable energy consumption and production, 6) energy consumption intensity per high impact climate sector, 15) GHG intensity of sovereigns and supranationals. As Cardano does not invest in real estate, indicators 17 (exposure to fossil fuels through real estate assets) and 18 (exposure to energy-inefficient real estate assets) are not considered in the screening.
Water use	Indicators showing water use and reuse, wastewater emissions, water targets, water use in water scarce areas, quality of water policy	8) Emissions to water
Land use	Indicators showing contributions to biodiversity loss, land degradation, deforestation, activities in areas with high biodiversity risk or protected areas, unsustainable ocean or sea activities, quality of biodiversity, land use and maritime policies focusing both on own activities as well as activities in the supply chain.	7) Activities negatively affecting biodiversity-sensitive areas
Chemicals and waste management	Indicators showing emissions of hazardous chemicals, phase-out plans of chemicals of concern, targets to reduce and recycle (hazardous) waste, use of alternative packaging solutions, chemical safety and quality of chemicals and waste management policies.	9) Hazardous waste and radioactive waste ratio
Social capital management	Qualitative indicators showing how companies manage product safety, privacy & data security, health & safety, procurement, accessibility and affordability of basic services, and relationships with local communities.	
Human capital management	Qualitative indicators showing how companies manage labour, safety and their personnel, both in the own company as in the supply chain.	
Organisational behaviour and integrity	Qualitative indicators showing how companies manage board quality, board diversity, (gender & racial) diversity, implementation of ILO conventions, payment, taxes and business ethics (fraud & corruption, whistleblowing, human rights policies, grievance & remedy)	12) Unadjusted gender pay gap, 13) Board gender diversity

For the screening, various data and benchmarking sources are used for analysis and reporting. The main data sources and their applications are:

- **MSCI data:** screening of companies for their compliance with Cardano's Sustainable Investment Policy.
- **Sustainalytics data:** tracking engagements and reporting on the SFDR Principal Adverse Indicators and Taxonomy Alignment.
- **Data from Urgewald:** monitoring the expansion plans for coal-fired power plants.
- **Access to Medicines Foundation benchmark data:** tracking the progress of engagements at pharmaceutical companies.
- **Equileap data:** analysing gender equality issues.
- **CDP data (Carbon Disclosure Project):** source for carbon, water and land data.
- **Satelligence data:** Cardano's biodiversity commitments and monitoring activities to reduce deforestation.
- **Data from the "Transition Pathway Initiative":** monitoring the extent to which a company operates in line with the Paris Agreement.
- **TRACE data** is used to monitor raw material supply chains and potential deforestation risks.



The sustainability analysts meet regularly with the various data providers to discuss their quality control procedures, missing information and how to integrate additional insights into their assessments to ensure better quality and accuracy of their assessments. Cardano's ESG models and ESG database are also checked by an internal and an external auditor. Decisions to exclude a company are never based solely on quantitative data sources but are always combined with fundamental analysis by an ESG analyst to monitor the reliability of data usage. ESG analysts compare different data sources and supplement them with their own research to validate the data.

Engagement

Cardano does not invest directly in equity or debt of companies, other than covered bonds and/or debt of government related entities, therefore engagement with companies to improve sustainability performance and/or corporate behaviour does not apply for Cardano.

Voting

Cardano does not invest directly in equity, therefore shareholding voting is not applicable.

ESG integration

ESG criteria are integrated into the investment process, which results in a relative company ESG score. We also apply such scores to countries. The higher the score, the lower the risk. The score also reflects on how a company or country is performing. Naturally, [our focus themes](#) of Climate (CO₂ emissions), Water and Land are also sufficiently taken into account.

Responsibilities

The Sustainability & Strategy team is responsible for the continuous development and implementation of the Cardano sustainability policies, alongside the investment teams. There are three committees that are responsible for assuring that the policy is executed as agreed upon.

The Sustainability Policy Committee is responsible for setting the overall sustainability strategy and approving sustainability policies and frameworks, prepared by the Sustainability Team. This committee consists of board members from Cardano Group, Cardano Advisory and Cardano Asset Management as well as the heads of the Sustainability & Strategy team and the deputy chief investment officer of Cardano Group.

The Sustainability Categorisation Committee monitors whether the Sustainability & Strategy teams follows the agreed upon policy and decides which entities (companies & sovereigns) and other securities-issuing institutions may and may not be eligible for investment and determines which companies and other securities-issuing institutions are in- and excluded from the investment universe. Also, it decides about the implementation of (changes in) the ESG Scoring, as put forward by the Sustainability team. This team consists of the heads of the Sustainability & Strategy team, the Deputy Chief Investment Officer, the Chief Investment Officer and the heads of the Product Management & Development Team and the Impact Team.

Finally, the Sustainability Investment Committee is responsible for the implementation of the sustainability policy in to investment strategies and financial decision-making. This includes advising on the overall sustainability strategy and policies, as prepared by the Sustainability Team and to be approved by the Sustainability Policy Committee. This committee consists of the Deputy Chief Investment Officer, the Chief Investment Officer the heads of the Sustainability & Strategy Team and the heads of the investment teams.

4. Engagement policies

Cardano does not invest directly in equity or debt of companies, other than debt of government related entities, therefore engagement with companies to improve sustainability performance and/or corporate behaviour does not apply for Cardano. For the same reason shareholding voting is not applicable.

Related to Investments

Cardano invests in government, government-related, covered bonds, WSW loans, and money-market funds for and on behalf of our clients. Furthermore, Cardano trades and manages derivatives for our clients and as such we interact with financial counterparties. To understand a counterparty's ESG risk exposure, our dealer committee has developed a framework that screens counterparties for material ESG issues using data provided by different ESG rating agencies. The dealer committee monitors the creditworthiness of counterparties and determines an internal rating.

A view on counterparties' ESG risk exposure forms an important part of that decision-making process. Counterparties that score below a threshold on various tests under the framework are subject to further investigation. All other counterparties are deemed to pass the ESG assessment.

We have supplemented third-party ESG data with our own questionnaire. The detailed disclosures are used as part of our review process. In the rating methodology that Cardano applies for monitoring counterparties, social and governance factors are taken into account. In case of a low score on these factors, Cardano will actively raise its' concerns and engage with company management of these counterparties to aim for improvements.



Where a counterparty is subject to further investigation, the framework applies a more granular screening process, where the ESG issues under consideration are closely linked to our sustainability beliefs. Counterparties that fail this screening process are then subject to an in-depth ESG review. The review primarily consists of a detailed review of MSCI ESG reports, together with broader research on the counterparty.

Where a counterparty that is subject to active engagement is not demonstrating signs of engagement or a willingness to address our ESG concerns, after a reasonable period of time the counterparty ESG assessment will be deemed to be "poor".

A poor rating will typically result in a downgrade to our rating, and therefore may be excluded from our list of counterparties with which we will transact new business, or potentially, if credit concerns are raised, unwind existing positions.

Wider Market Engagement

The Cardano Group plays an active role in promoting good governance and stewardship of internal and external activities that may impact our clients:

- We are an active participant in ESG forums and conferences, listening and contributing to industry initiatives with the intent of driving better practice and policy in the wider financial market;
- We play an active role in responding to consultations that could have implications on assets and liabilities of our clients. We look to ensure that changes made to markets and regulation positively impact our pension fund clients future financial stability and ensure the continued well-functioning of markets;
- We collaborate with a large number of organisations to put our investment beliefs into practiced to realise our sustainability related goals. Please refer to our website for a list of partner organisations.

5. References to international standards

Cardano’s Fundamental Investment Principles for Companies are minimum standards that are defined by ethical, social and environmental principles fundamental for good citizenship and good corporate governance. They are based on a broad range of international treaties, conventions and best practice guidelines, including the UN Global Compact, the UN Guiding Principles on Business & Human Rights and the OECD Guidelines for Multinational Enterprises (please refer to our Fundamental Investment Principles for a comprehensive list of the international mechanisms consulted in the company and sovereign assessments). These mechanisms especially refer to the PAI indicators 10, 11 and 16 as mentioned in chapter 2.

These international guidelines are considered universal. Cardano considers violations of the above-mentioned international mechanism to be a violation of the Fundamental Investment Principles and therefore not eligible for investment.

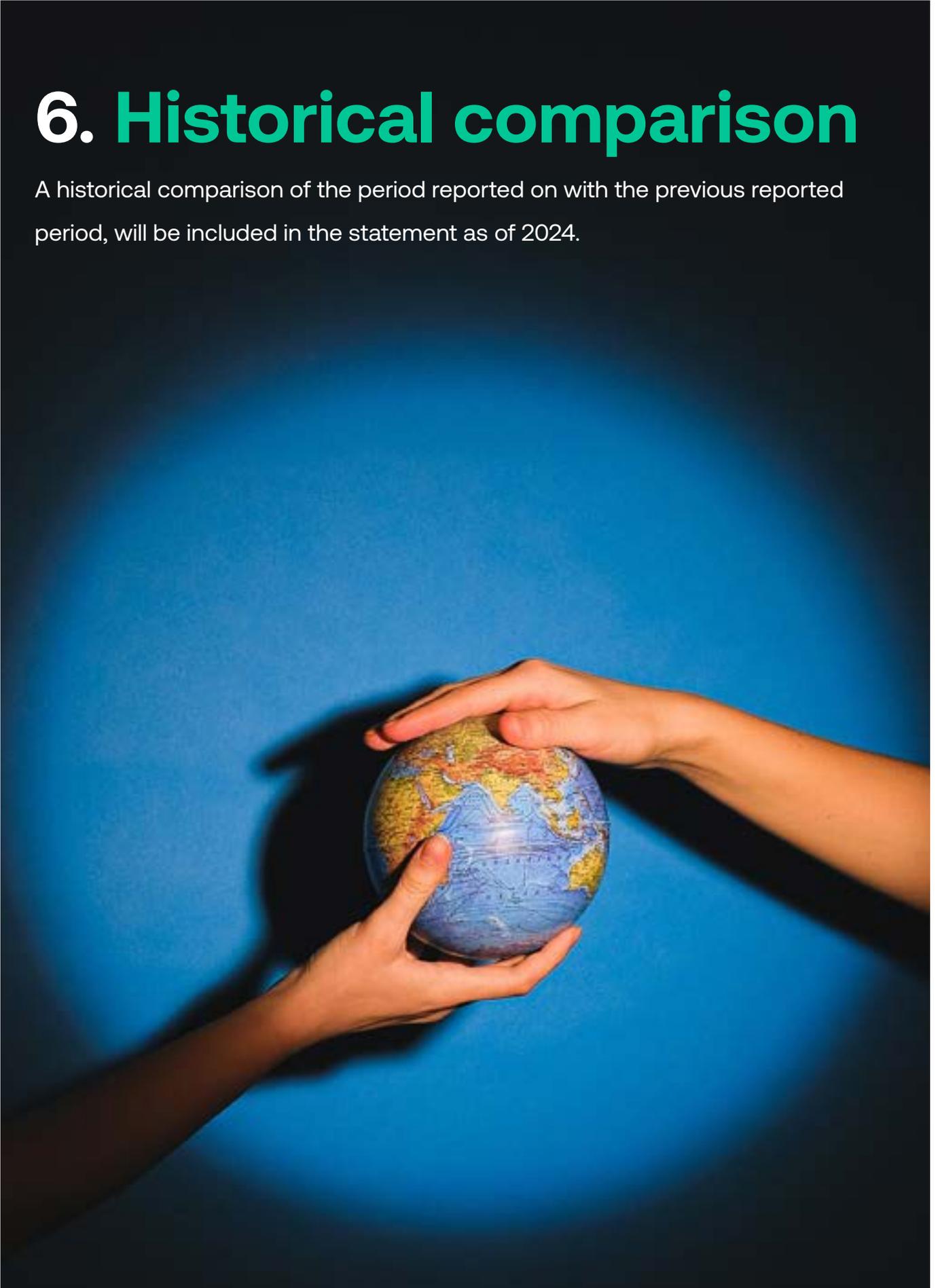


Cardano is a signatory to the Principles for Responsible Investment (PRI) and as a signatory abides by all of the requirements and expectations.

Cardano adopts the guidelines set out by the Taskforce on Climate-related Financial Disclosure (TCFD) in developing climate disclosures in line with the recommendations. We have set a target for our portfolios to achieve net-zero greenhouse gas emissions across all assets under management by 2050, in order to be in line with the Intergovernmental Panel on Climate Change (IPCC) 1.5°C pathway. For this long-term target, Cardano’s intermediate targets are to reduce the greenhouse gas emissions intensity of our investments with 50% by 2030 and with 75% by 2040, compared to 2020. These targets have been approved by the Science-Based Targets initiative (SBTi). TCFD related disclosures especially relate to the PAI indicators 1 to 6 and 15 as mentioned in chapter 2.

6. Historical comparison

A historical comparison of the period reported on with the previous reported period, will be included in the statement as of 2024.



7. Appendix



[Sustainability Policy](#)

Principle Adverse Impacts Statement (PAI)



cardano

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