MY FAIRMONEY

Technical Documentation

The fund database

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About MeinFairMögen/ MyFairMoney:

MeinFairMögen/ MyFairMoney is based on three pillars:

1. On the website, interested investors can find out about sustainable investments for retail clients in general.
2. With the help of a questionnaire, investors can determine their personal sustainability profile, which they can take with them as a basis for a consultation with a bank or financial advisor.
3. An extensive fund database with several thousand funds provides detailed information on the sustainability of funds. Users can search for individual funds and analyse them for sustainability aspects.

This document serves as technical documentation for the third pillar, the fund database.

About the 2° Investing Initiative:

The 2° Investing Initiative (hereafter 2DII) is an international, independent, and non-profit think tank for the development of climate metrics for the financial sector and their integration into financial regulation. Founded in 2012, the initiative works in Paris, Berlin, and New York City with the aim of bringing financial flows in line with the climate target defined in the Paris Agreement. The approximately 15 staff members combine expertise in financial markets, financial regulation, climate indicators, decarbonisation scenarios, risk models, and business strategies. We work on research projects with over 40 partners from the financial sector, business, research institutions, NGOs, universities, regulators, and policy makers. The focus of our activities is on PACTA climate scenario analyses, risk management, impact measurement and consumer protection for retail investors.

Contact:

2° Investing Initiative
France
21 Rue de Cléry
75002 Paris
Phone: +33 1 42 81 19 97

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1 Introduction

This document serves as technical documentation on the information that is shown in the fund database on MeinFairMögen/MyFairMoney and is intended to fulfil two purposes: On the one hand, it outlines the separate steps that are necessary to compile the fund database. On the other hand, the calculation, and the interpretation of the individual indicators is explained. The different steps described in this document are part of an iterative process which is undertaken on a 6 monthly basis and, therefore, the information on MeinFairMögen/MyFairMoney does not reflect real-time updates. Due to the complexity and the long-running analyses, real-time updates cannot be provided.

The financial products covered by MeinFairMögen/MyFairMoney are currently investment funds (e.g., Mutual Funds, Exchange Traded Funds). This requires that, in a first step, data on funds must be compiled and processed (see chapter 2).

Subsequently, the funds are analysed with the Paris Agreement Capital Transition Assessment (PACTA) scenario analysis, which was developed by 2° Investing Initiative (see chapter 3).

Following PACTA, the resulting outputs are combined with further information and are compiled into a spreadsheet format called a fund matrix (see chapter 4).

Explanations of the information in the fund database can all be found in chapter 4, except for the Paris-Alignment-Score. Due to its particular importance and complexity, the methodology is explained separately in chapter 5.

2 Fund data

As mentioned in the introduction, the scope of the fund database are investment funds, for which data needs to be obtained and prepared in the first place.

2.1 Project funds

The first step involves creating a list of project-relevant funds which shall later be displayed on the website. Hereby two broad categories exist:

- Funds which are available for retail investors in Europe (27 EU countries, Switzerland, and the UK)
- Funds which carry a sustainability label

2.1.1 Retail funds registered in Europe

First of all, all funds are taken into account that fall into the geographical as well as investor-specific focus.

In the case of MeinFairMögen/ MyFairMoney, all funds registered for sale in EU countries as well as Switzerland and the UK are identified. Of these funds, only those that are explicitly available to private investors or whose non-availability to private investors has not been reported are taken into account. Among these funds, the share class that the data provider Lipper identifies as the primary share class is then used to compile a list of fund ISINs which will then serve as an input for the later analysis.

2.1.2 Funds with sustainability label

In addition, sustainable marketed funds that do not fall within the scope described under 2.1.1 are added in order to integrate particularly relevant funds. Here, too, only the primary share class is used. The ISIN of funds that were awarded at least one of the following sustainability labels were added to the list in 2.1.1.:

FNG-Label
Transparency Profile (several countries)
ISR-Label
Austria Ecolabel
Towards Sustainability
Greenfin
Nordic Swan

2.2 Fund holding data

For the list of project relevant funds holding data is then obtained from the data provider Lipper. The holding data should consist of at least the following information: i) fund ISIN, ii) holding ISIN, iii) holding weight/value. Since up-to-date holding data with high coverage[1] is not always available for all funds, the following parameters were set in order to be able to analyse as many funds as possible, but also to ensure the quality of the analysis and not to use outdated data.

In the first step, the current holding data is compiled for all funds. If up-to-date data is not available, this process is repeated for the previous months, but only for a maximum of three quarters in the past (at the time of the data update on MeinFairMögen/ MyFairMoney). In general, the holding data at the end of each month was used.

Since it is possible that Lipper may subsequently change the coverage of funds, the most recent download date was used for funds for which holding data was recorded several times in succession for one date.

Afterwards, all funds were assigned the available holding data at the end of the month and the respective coverage per fund per month was calculated (for example, for Fund A 96% of the holdings were recorded in August, 67% in September and 92% in October).

Then, only funds above 90% coverage are considered (in the example, the September holding data would be filtered out). This was set as a relevant threshold above which certain quality assurance is assumed. For funds below 90%, the probability is high that potentially relevant holdings have not been included, so that an incorrect assessment is subsequently made. Even at 90%, this cannot be guaranteed, but this threshold represents a compromise in order to analyse as many funds as possible at the same time. However, the vast majority of the funds displayed on MeinFairMögen/ MyFairMoney have a coverage of 100%.

If a fund has holding data for several months with sufficient coverage, the most recent month is chosen (in the example described above, this would be October, even if the fund has better coverage in August).

At this point, a list is obtained in which each fund and the associated holdings appear for a timestamp, but not more than once and not at different times.

2.3 Fund-in-Fund Analysis

Next, the so-called fund-in-fund (FiF) analysis is carried out. If a fund (in this case the so-called parent fund) itself invests in another fund (so-called child fund), it also invests indirectly in the

[1] Coverage is defined as the share of the fund size, which is known, meaning that for this proportion of a fund holding data is available.

companies from the child fund. With the FiF, these investments can be attributed to the parent fund and these therefore also flow into the subsequent analysis.

In the first step, all child funds are identified and, if not already done, holding data is collected for them. These are then scaled and attributed to the parent fund (e.g., if the parent fund invests 10% in a child fund and the latter invests 20% in Volkswagen, the parent fund then indirectly invests 2% of its values in Volkswagen, even if it did not invest directly beforehand).

In the FiF analysis, the parent fund is ideally assigned the holdings of the child fund from the same timestamp. However, if holding data are not available at the same time, different time stamps of parent and child funds are also accepted in order to identify possible controversies and climate-relevant companies later on. However, the possible difference in the timestamps is limited to the period of the project from chapter 2.3, so that there is at most a difference in the timestamps of parent and child funds of a few months.

Child funds with high coverage were added to the parent funds first. Overall, no minimum coverage was set for the FiFs, but poor coverage of a child fund affects the parent fund later (e.g., if a parent fund has 100% coverage but invests 10% in a child fund with a coverage of 50%, the parent fund will only have 95% coverage after the FiF analysis).

All remaining child funds for which no holding data were available are filtered out. This is necessary because otherwise one would assume too good coverage for a parent fund. If, for example, the remaining, unanalysed child fund makes up 50% of the parent fund, the parent fund invests 50% indirectly in many other companies, which, however, cannot be analysed.

After filtering out all funds with a coverage of less than 90% in 2.2, the following FiF analysis may have led to another deterioration in coverage. Therefore, after the FiF analysis, all funds with less than 90% coverage are filtered again. Furthermore, there are cases in which coverage exceeds 100%. In most cases, this is due to rounding and the excess is only a few decimal places. In a few cases, however, the coverage totals far more than 100%, which is why a tolerance of 10% is also set here so that only funds are finally taken into account that lie between 90% and 110%.

2.4 PACTA Input portfolio

After having compiled the fund holding data, the PACTA input portfolio is then prepared. Since PACTA uses market values instead of weights for the analysis, the weights of the holdings are converted into absolute values. Since not all portfolios have 100% coverage, this must be considered in the input portfolio (e.g., if a fund invests 10% in share A but only has 95% coverage, PACTA would assume that the fund invests 10.5% in share A without taking the missing 5% into account, which would distort the analysis). Therefore, a dummy holding is inserted in each portfolio to account for the missing coverage.

Since the PACTA input portfolio also needs an entry for the investor of a portfolio and this is not always available, a dummy name is entered (e.g., Investor A, Investor B, etc.), which should be manually overwritten later in the final matrix.

More information about the format and structure of the PACTA input portfolio is available here.

3 PACTA

After having prepared the fund data which shall be displayed on MeinFairMögen/ MyFairMoney, the Paris Agreement Capital Transition Assessment (PACTA) climate scenario analysis is used to analyse the fund data.

PACTA measures the alignment of financial portfolios to climate change scenarios, including Paris aligned scenarios, across climate relevant sectors. PACTA is aimed at informing about transition risk with the ultimate goal of driving emissions reductions in the real economy and is able to measure the alignment of listed equities, corporate bonds, and corporate lending.

The assessment of portfolio alignment to a climate scenario is based on forward-looking production values, which are measured in economic units of output in the real economy. It is thus distinguished from purely carbon accounting frameworks, which are often based on historic data. Despite this distinction, PACTA can be used as an input into carbon accounting frameworks, with the use of emission factor models, and can complement such frameworks in their own right.

PACTA is an open-source iterative methodology. Designed in consortium with academic institutions, industry initiatives, not for profits and financial institutions, it has received funding from the EU Life Programme, International Climate Initiative (IKI) and Germany's Federal Ministry for the Environment, Nature Conservation and Nuclear Safety.

For information about the methodology, the underlying scenarios, the data sources and how to use PACTA, please visit transitionmonitor.com and the PACTA Knowledge Hub.

4 Fund Matrix

After having applied PACTA, the so-called fund matrix needs to be compiled, which can be understood as a spreadsheet consisting of the information displayed on MeinFairMögen/ MyFairMoney for each fund.

To create the fund matrix, several output files from the PACTA analysis are needed as well as, depending on the scope and objective, data from third-party providers to analyse controversial activities of companies or to assign funds sustainability labels. In the next chapters, an overview of the necessary input data is given, followed by a detailed explanation of the calculation of the individual indicators.

4.1 Overview of input data

4.1.1 PACTA-Outputs

4.1.1.1 Total Portfolio

Running the PACTA methodology on a personal machine for an individual project creates a particular folder structure. This yields a file in the project folder "30_Processed_Inputs" which contains the name of the respective project and the suffix "total_portfolio". This file contains all the portfolios of all funds, i.e., information on the fund ISIN, holding ISIN, market values, shares and sector classification of the holdings as well as information on whether they have been analysed by PACTA. In the following, this file is referred to as the total portfolio.

4.1.1.2 PACTA-Results

The results of the PACTA analysis can be found in the project folder "40_Results". This folder contains the results both in aggregated form and separately for each investor (in the individual subfolders). The results are available at both company and portfolio level (suffix "company" or "portfolio") and are differentiated according to equity and bonds (prefix "bonds" or "equity"). All four files are needed to create the fund matrix, but results of different asset classes are combined so that in the following we speak of the portfolio results ("Equity_results_portfolio" & "Bonds_results_portfolio") and company results ("Equity_results_company" & "Bonds_results_company").

4.1.1.1 Project specifications of the PACTA outputs

The results from the PACTA analysis for sectors and technologies are available for different time periods, scenarios, regions and allocation principles, so that specifications must be made for the compilation of the fund matrix according to which the results are filtered. In the analysis for MeinFairMögen/ MyFairMoney, the results at a global level are used from the Net Zero by 2050 scenario of the International Energy Agency, and the so-called "portfolio weight approach" is applied as an allocation principle. In addition, a 5-year horizon is analysed depending on the year of the analysis.

4.1.2 Controversial activities of companies

One key instrument to analyse the sustainability of a fund, is the analysis of the controversial activities of companies within a fund. Therefore, information must be available on which companies are associated with which controversies. In order for this information to be aggregated at the portfolio level, ISINs for all securities should be available for the associated companies.

4.1.3 Fund labels and ESG scores

If not already created for the compilation of project-relevant funds (cf. chapter 2.1.2), a list of ISINs and the associated fund labels must be available for the compilation of the fund matrix. The information on whether a fund carries a label is gathered directly from the publicly available lists of the respective organization or agency. The lists available at the time of the analysis are used and, where possible, the information on this is updated when new lists become available.

4.1.4 Additional fund information

Based on the processing of fund data and further information from Lipper, a file is necessary for the characteristics of a fund. This should contain the timestamp of the fund data for each fund, the fund size (in the case of MeinFairMögen/ MyFairMoney across all share classes), the fund name and the fund management company. Again, this information should be given per ISIN.

4.2 Detailed information on indicators

4.2.1 Overall PACTA and Sector Exposure of a portfolio

Based on the total portfolio, the sector exposure of a fund is calculated. However, due to the special focus of the platform, only positions that have also been analyzed with PACTA are taken into account, meaning that companies that are in principle also active in these sectors but, for example, have no production capacities or are active in the supply industry were not included in the calculation of sector exposures. The total exposure to PACTA-relevant sectors is the sum of the individual sector exposures. The calculation is based on the company classification made in PACTA.

More information on company classification in PACTA can be found here.

4.2.2 Technology und Portfolio Alignment

The indicators about technology and portfolio alignment are based on the Paris-Alignment-Methodology. More details about the calculation can be found in chapter 5 of this document.

4.2.3 Controversial corporate activities

For the analysis of a fund's controversial corporate activities, the individual holdings in the total portfolio are matched against a list of companies that have been associated with these controversies (for an overview, see table below). A fund is analyzed for a total of 19 controversies, and it is also indicated whether the entire portfolio is in line with the Paris climate goals, i.e., has a positive Paris Alignment Score and has therefore been awarded an A (see chapter 5 for more information). For each controversy, the weight of holdings, which are associated with that controversy, is calculated. In the following chapters, detailed information about the list of companies with controversial corporate activities is presented.

Source	Environment	Social & Ethics	Governance
ISS ESG	Genetically modified organisms	Controversial Weapons	Corruption
	Controversial Pesticides	Civil Weapons or Military Equipment	Business Malpractice
	Palm Oil	Addictive Substances (Tobacco, Alcohol)	Tax Avoidance strategies and identified infringements
	Controversies in the field of environmental protection	Controversies in the field of human rights	No women on board or management
		Controversies in the area of workers' rights	Violation UN Global Compact

		Violation of animal welfare	
2DII (2DII relies on different data sources for this, more on this at transitionmonitor.com)	Non-compliance with the Paris-Goals		
	Coal		
	Oil & Gas*		
	Nuclear energy*		

* For these sectors, additional to 2DII data, we use sector classification from Bloomberg for related sectors that supplement the core production sector.

4.2.3.1 ISS ESG

For 15 of the 19 controversies mapped on MeinFairMögen/ MyFairMoney, information from the data provider ISS ESG is used. In case of queries regarding individual controversial indicator, we refer directly to ISS ESG. In general, no revenue thresholds were taken into account for the company activities, and activities along the value chain were also recorded. The following tables give an overview of the indicators:

Genetically modified organisms	The weighting of companies in the fund that are involved in the production and/or processing of products from genetically modified organisms is shown. This includes companies that are involved in the production of seeds, crops and/or food additives with the aid of genetic engineering. It also includes companies involved in the production of pharmaceutical drugs or active ingredients, industrial chemicals, biofuels and/or other consumer products using genetic engineering. If you have any questions about the company data, please contact ISS ESG directly. (Data source: ISS ESG)
Controversial pesticides	The weighting of companies in the fund that are active in the production of pesticides containing ingredients classified as extremely or highly hazardous by the World Health Organisation (WHO) is shown. If you have any questions about the company data, please contact ISS ESG directly. (Data source: ISS ESG)
Palm Oil	The weighting of companies in the fund that are involved in the production, distribution or processing of palm oil and finished palm oil-based products is shown. This includes companies involved in the cultivation of oil palms (producers), the operation of palm oil mills, refineries and/or fractionation plants (processors), the manufacture of finished products using palm oil, including food and non-food products (chemicals, biofuels, personal care products) (users) or the distribution of crude palm oil, palm kernel oil, palm kernel flour, derivatives or fractions (distributors). If you have any questions about the company data, please contact ISS ESG directly. (Data source: ISS ESG)
Controversies in the field of environmental protection	The weighting of companies in the fund that are involved in serious or very serious environmental controversies according to ISS ESG is shown. These include violations of international environmental standards, such as the Rio Declaration on Environment and Development, the Biodiversity Convention or the Paris Climate Agreement, among others. The assessments are updated when relevant new information is available or at least annually. If you have any questions about the company data, please contact ISS ESG directly. (Data source: ISS ESG)

Controversial Weapons	The weighting of companies in the fund that are involved in serious or very serious environmental controversies according to ISS ESG is shown. These include violations of international environmental standards, such as the Rio Declaration on Environment and Development, the Biodiversity Convention or the Paris Climate Agreement, among others. The assessments are updated when relevant new information is available or at

	least annually. If you have any questions about the company data, please contact ISS ESG directly. (Data source: ISS ESG)
Civil Weapons or Military Equipment	The weighting of companies in the fund that are involved in the production, distribution or provision of services related to military equipment (weapons of war, supporting military equipment, as well as their components) or/and civilian firearms is presented. Services include maintenance, repair, testing, transport and similar activities in the above areas. This indicator is broadly defined, so that it also includes companies that are active, for example, in the field of logic (e.g. by transporting tanks) or that produce goods that have both civilian and military uses (e.g. oxygen masks for pilots), provided that these goods have been specifically developed or modified for military use. If you have any questions about the company data, please contact ISS ESG directly. (Data source: ISS ESG)
Addictive Substances	The weighting of companies in the Fund that are engaged in the production of tobacco products and/or the production or distribution of alcoholic beverages is presented. The distribution of alcoholic beverages includes companies engaged in the wholesale or retail sale of alcoholic beverages, including liquor shops, supermarkets, bars and restaurants. It does not exclude services provided by enterprises engaged in the licensing, marketing and advertising of alcoholic beverages and/or tobacco, and also enterprises supplying key raw materials and packaging products specifically used in the production of alcoholic beverages and/or tobacco products, such as beer bottles, wine corks or cigarette packaging. This indicator does not require a minimum share of activities in turnover. If you have any questions about the company data, please contact ISS ESG directly. (Data source: ISS ESG)
Controversies in the field of human rights	The weighting of companies in the fund that are involved in serious or very serious human rights controversies according to ISS ESG is presented. These include violations of international human rights standards, such as the International Bill of Human Rights, the International Covenant on Civil and Political Rights (ICCPR) or the International Covenant on Economic, Social and Cultural Rights (ICESCR), among others. Assessments are updated when relevant new information is available or at least annually. If you have any questions about the company data, please contact ISS ESG directly. (Data source: ISS ESG)
Controversies in the area of workers' rights	The weighting of companies in the fund that are involved in serious or very serious labour rights controversies according to ISS ESG is shown. This includes violations of international labour rights standards, such as the International Labour Organisation (ILO) Convention, among others. The ratings are updated when relevant new information is received or at least

	annually. If you have any questions about the company data, please contact ISS ESG directly. (Data source: ISS ESG)
Violation animal welfare	The weighting of companies in the fund that violate animal welfare is shown. On the one hand, this includes companies that carry out animal experiments on live animals for non-pharmaceutical purposes. Secondly, this excludes companies that engage in intensive farming to produce food, including meat, eggs and dairy products, or companies that breed, trap or slaughter animals for their fur and leather. Companies that conduct animal testing for pharmaceutical purposes are not excluded. If you have any questions about the company data, please contact ISS ESG directly. (Data source: ISS ESG)

Violation of the principles of the UN Global Compact	The weighting of companies in the fund that are involved in serious or very serious controversies in at least one of the four core areas of the UN Global Compact according to ISS ESG is shown. These include violations of international standards in the areas of environmental protection, human rights, labour rights and corruption. The ratings are updated when relevant new information is received or at least annually. If you have any questions about the company data, please contact ISS ESG directly. (Data source: ISS ESG).
No women on the Executive Board or Supervisory Board	The weighting of companies in the fund that do not have women on their management and/or supervisory boards is shown. If you have any questions about the company data, please contact ISS ESG directly. (Data source: ISS ESG)
Corruption	The weighting of companies in the fund that are involved in serious or very serious controversies in the area of corruption according to ISS ESG is shown. This includes violations of international anti-corruption standards, such as the UN Convention against Corruption, among others. The ratings are updated when relevant new information is available or at least annually. If you have any questions about the company data, please contact ISS ESG directly. (Data source: ISS ESG)
Business Malpractice	The weighting of companies in the fund that are involved in accounting fraud, bribery, money laundering or/and anti-competitive behaviour according to ISS ESG is shown. If you have any questions about the company data, please contact ISS ESG directly. (Data source: ISS ESG)
Tax Avoidance strategies and	The weighting of companies in the fund that miss the intent and spirit of tax laws is presented. This includes companies that engage in illegal tax evasion by not paying or only partially paying taxes and/or that use tax

identified infringements	optimisation strategies or aggressive tax planning, such as targeted profit reduction and profit shifting, even if these do not fall within the scope of illegality. If you have any queries regarding the company data, please contact ISS ESG directly. (Data source: ISS ESG)

4.2.3.1 2° Investing Initative (2DII)

The activities of companies in the coal, oil & gas and nuclear energy sectors are provided by 2DII and Bloomberg in two different ways. First, information from Bloomberg is used that shows which companies are active in the mentioned areas. Then, this list is completed with companies that show production capacities for the current year in the company results file (from the PACTA analysis). Here, the production figures at technology level are used.

The controversy of non-compliance with the Paris climate targets is based on the Paris-Alignment-Score, which is calculated by 2DII for funds as a whole. Funds with negative values, corresponding to a score of B-F, are subsequently marked with this controversy (for the calculation of the Paris Alignment Score, see chapter 5).

Non-compliance Paris-Goals	The fund includes companies that do not meet the targets of the Paris Climate Agreement according to the Paris Compatibility Score.
Coal	The fund contains companies that are active in the mining and/or conversion of coal into electricity. Coal types considered are Anthracite, (Sub-)Bituminous, Lignite and unknown types. Support services are not considered. With regards to power generation, also companies are considered that are not primarily active in the sector of power generation but hold assets that produces more than 50 MWh.
Oil & Gas	The fund contains companies that are active in the production and/or conversion of oil and gas. This includes oil and condensates, Gas, Natural Gas Liquids and additionally Crude Oil and Natural Gas Production are flagged. This includes exploration, drilling and extraction of natural gas and crude oil as well as the use of the raw material to generate electricity. Support services are not considered. With regards to power generation, also companies are considered that are not primarily active in the sector of power generation but hold assets that produces more than 50 MWh.
Nuclear Energy	The fund includes companies that are active in the extraction and/or conversion of uranium into electricity.

4.3 Further fund information

4.3.1 Fund characteristics

Following the previous analysis, information on the fund's management company, size and name is incorporated from the relevant input file (again by ISIN). The fund size is reported for the entire fund and not just for the respective share class and at the time from which the data on the holdings is also available.

4.3.2 Label & ESG-Scores

Subsequently, each fund is matched with the list of labelled funds as well as their ESG scores from the relevant input file. For more information on the label characteristics and specifications, we refer to the particular labelling agency. Following fund labels, scores and ratings are currently included:

FNG-Label
Transparency Profile (per country)
ISR-Label
Austria Ecolabel
ISS ESG Primate Status
ISS ESG Fund Rating
Towards Sustainability
Greenfin Label
Nordic Swan

4.3.3 Climate stewardship

Finally, funds are matched with the climate stewardship score developed by FinanceMap. It ranges from A+ to F and indicate of how robustly the investor is engaging with companies around climate change (i.e. impact on companies' business models and political influencing activities, escalation strategies, resolution filings), including voting on climate-relevant shareholder resolutions at company AGMs (Source: InfluenceMap).

4.4 Quality assurance

In chapter 2, a 90% coverage threshold was introduced below which funds are not considered. However, before the final list of funds is uploaded to the platform, final quality assurance is undertaken.

While only funds with a coverage of over 90% were included in the PACTA analysis, not all holdings of a portfolio can always be analysed in this process. This can happen when the ISIN of a security cannot be matched to a company and therefore it cannot be ensured that they would not have to be attributed to a relevant company from the PACTA sectors after all. Reasons for this may be that Factset has no information about the ISIN, that an ISIN is incorrect

or that it is a very recent ISINs (e.g., of a newly issued bond) that has not yet been included in the database. To account for this, the share of these non-analysed ISINs in a fund is calculated and deducted from the previous fund coverage. If for example 95% of a fund's holdings were previously known, but a further 6% could not be analysed, the actual coverage in the PACTA analysis is 89% of a fund. In such cases, the fund is no longer displayed on the platform.

Positions without ISIN (e.g., cash positions) and short positions are excluded from this rule, as the former are usually not relevant for PACTA and the latter cannot be analysed by PACTA, as PACTA does not have a methodology to analyse them in a meaningful way at the moment.

5 Paris Alignment Score

PACTA is a free, open-source methodology and tool, which measures financial portfolios' alignment with various climate scenarios consistent with the Paris Agreement. However, within PACTA there is neither an aggregation of the individual technologies to a single sector nor an aggregation to an individual portfolio. The Paris-Alignment-Score, therefore, attempts to combine the results of the PACTA analysis into one indicator.

For general information about PACTA, please go to chapter 3 or visit transitionmonitor.com and the PACTA Knowledge Hub.

5.1 Measuring Technology Alignment

The PACTA method measures alignment at technology level based on the 5 year forward looking production plans of companies, therefore reflecting their capital commitments. This involves three basic steps to determine technology-level alignment.

5.1.1 Step 1: Roadmap Translation

In order to measure alignment, portfolio results are compared to the changes in production, capacity or production weighted emissions intensities anticipated by the Net Zero Emission scenario developed by the International Energy Agency (IEA). This scenario targets the highest level of ambition laid down in the Paris Agreement required in order to achieve net-zero emissions by 2050 and a global average mean temperature rise of 1.5oC by 2100 with a 66% probability [2]. This scenario replaces the Beyond 2 Degrees (B2DS) scenario taken from the IEA´s Energy Technology Perspectives (ETP) 2017 scenario set which was used in the prior March 2022 MFM release.

The NZE scenario responds to the increasing number of countries and companies that have made commitments to reach net zero emissions earlier combined with the aim of limiting the rise in global temperatures to 1.5°C by the end of the century. In particular it explores the actions needed in the period to 2030 in order to be on track to achieve net zero emissions by 2050, including a massive deployment of renewable energy that will negate the need for new fossil fuel exploitation from 2021 onwards and actions to avoid stranded assets across sectors. For those sectors where there is a clear set of transitions from high carbon emitting to low carbon emitting technologies, such as in the power and automotive sectors, alignment with the scenario can be measured based on production or capacities. For those sectors where a combination of measures will be required, such as for steel and cement, then production-based emissions intensities are used.

[2] IEA, World Energy Outlook (2021)

5.1.2 Step 2: Technology Exposure

Using industry-specific databases, PACTA determines a company's future production in the climate-relevant technologies over a five-year time horizon using forward-looking production data, such as the company's verified plans for new power capacity. Company production is determined at the asset-level, e.g., at the level of the individual power plant or vehicle manufacturing facility. The company's total production in a given technology is then allocated proportionately to the positions held in a financial portfolio based on the portfolio weight approach. This approach calculates the portfolio's technology exposures based on the financial weighting of each position within the portfolio. The technology exposure is presented as a weighted technology share (i.e., percentage values). The weighting of the technology share therefore represents the weight of the company in the portfolio. For more information on the accounting principles used in PACTA, please have a look at the relevant section in the PACTA Knowledge Hub.

5.1.3 Step 3: Alignment analysis

Based on the forward looking production plans of the companies two alignment results are calculated:

- A comparison of the portfolios technology mix with the the scenario technology mix, both on a forward looking basis.
- A trajectory alignment analysis is made compared with target production values calculated based on the IEA NZE scenario.

The deviation between the target and the portfolio under consideration is calculated for each technology. The alignment can be calculated for every year, but in the context of the Paris-Alignment-Score, a five-year time horizon is chosen. In this context, to measure the alignment for the Paris-Alignment-Score, a distinction must be made as to whether build-out roadmaps exist for a technology and sector in the scenarios and to what extent information on forward-looking build-out plans exist. Both are available for the power, automotive, coal and oil & gas sector. For cement and steel, the scenario used does not specify absolute technology production figures, but rather CO_2-intensity targets on a sector level normalized to a unit of production (e.g., a tonne of steel).

5.1.3.1 Sectors with technology transition roadmaps and forward-looking data

In the context of technologies with a technology roadmap and forward-looking data, alignment can be calculated based on a trajectory alignment approach. The approach can measure alignment for production that needs to decline, for example in the case of upstream oil and gas, as well as production that needs to buildout, as in the case of renewable power.

To calculate the trajectory alignment, the total planned production of technology is compared against the allocation of the total production to a given company which the scenario would require based on a market share approach. If the companies in a portfolio plan to produce 350 MW renewable energy by 2025, but the scenario would allocate 400 MW, the trajectory alignment is -12.5% for this specific technology.

5.1.3.2 Sectors without technology transition roadmap and forward-looking data

In the context of sectors without technology build-out roadmaps, which is the case for steel and cement, CO_2-intensity normalized to a unit of production, is taken as a measure of alignment. For this purpose, the results of all technologies from these sectors in PACTA are first aggregated at sector level (weighted by share of production). Then the target CO_2-intensity in 5 years is compared with the current CO_2-intensity. The greater the difference between today's CO_2-intensity and the target CO_2-intensity in 5 years, the worse the alignment.

Ideally, the planned CO_2-intensity in 5 years should be compared with the target CO2-intensity in 5 years, but this is not currently possible due to a lack of data. Therefore, for those sectors currently without forward looking data the current status quo is taken as a proxy for the alignment in 5 years.

5.1.4 Alignment assessments at a sector level

In order to make alignment assessments for each sector in scope, the the alignment assessments for the technologies and companies in each sector need to be aggregated, with different approaches being used:

- For steel and cement, the deviation of each company´s emissions intensities from a scenario trajectory are calculated and aggregated up to the portfolio level, with weighting based on each company´s production.
- For oil, gas and coal the sectoral alignments are each calculated separately with the trajectory alignments for each fossil fuel at company level being aggregated up to portfolio level with weighting based on each company´s production.
- For those sectors where alignment is measured using production capacity metrics at technology level (power and automotive), each of the technology alignment deviations against the scenarios are aggregated at a company and sector level. For these sectors, aggregation of the technology alignment deviations is made by applying two weighting factors to each technology alignment result that reflect:

    1. the expected absolute change in the technology production in order to be aligned with the scenario (i.e., the relative change in capacity per technology required of the portfolio) $TS_{a,s,t}$ and
    2. the production value for the technology allocated from the scenario in t+5 in order to be aligned (i.e., the relative importance of the technology to the portfolio) $TE_{a,s,t}$.

The calculation provides an aggregate score for company and sector alignment for the IEA NZE scenario, comparing the portfolio's sector production deviation with what is calculated and allocated from the scenario trajectory for the sector.

As a summary, this would be the formula at sector level:

$$Sector\ Alignment\ s_{asset\ type\ a} = \frac{\sum_{a,s,t}(TA_{a,s,t} \times TS_{a,s,t} \times TE_{a,s,t})}{\sum_{a,s,t}(TS_{a,s,t} \times TE_{a,s,t})}$$

5.1.5 Score Aggregation at a portfolio level.

At a portfolio level for PACTA sector exposures, the sectoral alignment results are then aggregated, weighted by the sectoral value to the analyzed sectors SVa,s, in this case the total value of assets under management within the fund for each PACTA sector. This weighting was chosen to reflect the question the score seeks to answer: a retail investor will want a majority of their investments to be aligned with the Paris Agreement.

$$Asset\ type\ alignment\ a = \frac{\sum_{a,s}(SA_{a,s} \times SV_{a,s})}{\sum_{a,s}(SV_{a,s})}$$

5.1.6 From Asset Type Alignment to Portfolio Alignment

In a final step, the alignment for the whole sub-portfolio of PACTA sector exposures is calculated by aggregating the alignment for each asset type (AA_a), The aggregation is weighted by the portfolio value (AV_a) which is invested in the PACTA sector in each asset type.

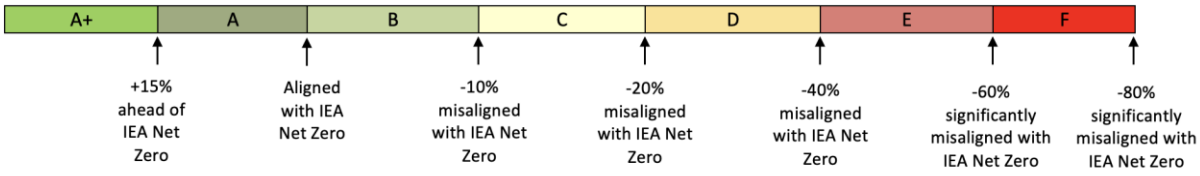
$$Portfolio\ Alignment = \frac{\sum_{a}(AA_a \times AV_a)}{\sum_{a}(AV_a)}$$

5.2 The output sector and portfolio level aggregate scores

The PACTA Aggregate Score is provided at the portfolio level for the sectors in scope and by type of financial asset (corporate bonds and equity). As a rule, the sector scores always accompany the aggregate score in order to provide more actionable information on sectoral performance. The score is provided in the form of a letter grading which can be interpreted as follows:

- **A+:** Ahead of the Net Zero by 2050 scenario. (Portfolios exceeding the alignment level with respect to the IEA 1.5˚C NZE scenario by more than +15%)
- **A:** Aligned with Net Zero by 2050 scenario. (Portfolios aligned with the 1.5˚C scenario but don't exceed 15%)
- **B:** Slightly misaligned with Net Zero by 2050 scenario (Portfolios misaligned with the Net Zero scenario. Misalignment level with respect to the scenario doesn't exceed -10%)
- **C:** Misaligned with Net Zero by 2050 scenario (Portfolios misaligned with the Net Zero scenario. Misalignment level with respect to the scenario **doesn't exceed -20%**)
- **D:** Misaligned with Net Zero by 2050 scenario (Portfolios misaligned with the Net Zero scenario. Misalignment level with respect to scenario **doesn't exceed -40%**)

- **E:** Significantly misaligned with Net Zero by 2050 scenario (Portfolios misaligned with the Net Zero scenario. Misalignment level with respect to the scenario **doesn't exceed -60%**)
- **F:** Significantly misaligned with Net Zero by 2050 scenario (Portfolios misaligned with the Net Zero scenario. Misalignment level with respect to the scenario **doesn´t exceed -80%**)



Source: RMI, based on Asset Impact data.

5.2.1 Threshold for obtaining a Paris-Alignment-Score

So far, the previous chapters described the methodology for how to derive the Paris-Alignment-Score at a portfolio level based on PACTA results, hence it could be seen as a score for the whole portfolio. However, if the 7 sectors, which are in the scope of PACTA, only make up a low proportion of the overall portfolio, the question remains whether all the other sectors outside of the scope of PACTA are in total not more relevant than the ones which have been analysed. In such cases, displaying the Paris-Alignment-Score as a score for the whole portfolio could be misleading. An example could be a portfolio with a strong real-estate, chemical or agriculture focus, all climate-relevant industries which are not in the scope of PACTA.

To address this risk and to ensure that the Paris-Alignment-Score is in fact a score for the whole portfolio, 2DII developed a methodology to estimate the share of CO_2-emissions of a portfolio that arise within PACTA sectors and the share of CO_2-emissions which are emitted outside of PACTA sectors. The more the portfolio CO_2 emissions covered by PACTA exceed those outside PACTA, the lower the risk that the Paris Alignment Score gives a misleading result.

Based on ISS data, an estimate is made of the share of CO_2 emissions that a portfolio is exposed to that are associated with PACTA sectors. For each company in the portfolio, the scope 1, 2 and 3 emissions are determined and allocated to a fund. If not available, the average of the financed emissions intensity (tonne of CO2 / $ of market capitalization for equity, and ton of CO2 / $ of debt) for the sector is attributed to the company.

In a final step, a threshold must be set for the portfolio CO_2-emissions which must be attributed to PACTA sectors in order for a fund to receive a Paris-Alignment-Score. For this, a threshold of 50% was chosen. This means that if in a fund for example 30% of the portfolio CO_2 emissions, as estimated by the method described above, are associated within PACTA sectors, this fund would lose its calculated Paris-Alignment-Score, as the risk of misleading results is too high. On the other hand, if 80% of the portfolio CO2 emissions are associated with PACTA sectors, this fund would keep its Paris-Alignment-Score.

A second threshold has been set at 2% of the financial exposure to the PACTA sectors. In other words, if PACTA sector financial exposure at fund level is not more than 2% of the total assets under management, the Paris score will not be displayed on the platform as the PACTA sector exposure is not estimated to be important enough overall to be only assessed using the alignment score.

6 Limitations

6.1 Fund data

One limitation with regard to the fund data is that the current timestamps are not always available, so that the information on MeinFairMögen/ MyFairMoney about a fund is also not up-to-date. If a fund has changed its holdings in the meantime, the reported controversies and climate performance cannot reflect the status quo, which may be worse or better. For large funds, it can be assumed that the results do not vary so much, as the analysis includes many companies that do not all change at once. However, especially for small funds, which may only invest in two or three climate-relevant companies, a change here can already significantly change the results.

In addition, the 90% coverage threshold should be mentioned in relation to the fund data. This is a compromise in order to analyse as many funds as possible and to ensure a minimum quality of the statements, but it is of course possible that the 10% does contain relevant companies with regard to controversies or climate performance. This residual risk remains.

6.2 PACTA

PACTA is a climate scenario analysis and thus entails many uncertainties and limitations. The climate scenarios present one possible manifestation of how the energy transition aligned with the Paris climate agreement could look like. Even though the necessary actions are not controversial (expansion of renewables, retirement of high-carbon technologies), the precise way in which a carbon budget is distributed across sectors will be solved in different ways by different scenarios.

Furthermore, different models will include different assumptions about the future development and potential of certain technologies. This analysis therefore focuses on those technologies that are proven and available to the market. As a result, this analysis does not consider investments in R&D, which represent an important way for financial institutions to help bring new solutions to the market.

Although the input data is sourced from reliable, third-party data providers, errors are possible, either in the production plans themselves, or in mapping the ownership structure of a companies. Furthermore, planned production plans do not necessarily materialize and production forecasts should be interpreted baring this in mind.

In addition, PACTA does not cover certain sectors, such as agriculture and forestry, even though they are highly relevant for limiting future GHG emissions, due to lack of available data. Furthermore, asset classes such as sovereign bonds or private equity are also not included in the analysis.

Finally, PACTA cannot analyse short positions or positions without an ISIN, even if they have been issued by climate-relevant companies.

6.3 Fund Matrix

The previous limitations on fund data and PACTA must generally be taken into account for the information on MeinFairMögen/ MyFairMoney, which is defined in the fund matrix.

In addition, the sector exposures should be mentioned, which on MeinFairMögen/ MyFairMoney only refer to the PACTA sectors and not to other companies in this sector, e.g., in the supply industry. Hence, the actual sector exposure, i.e., including the supply industry or other services, might be bigger than the exposure reported on MeinFairMögen/ MyFairMoney.

With regard to controversies, it must be mentioned that not all securities always carry ISINs, even if they were issued by a company (e.g., swaps). Since securities are always matched via ISINs, this exposure to controversies cannot be analysed.

6.4 Paris-Alignment-Score

Since the Paris-Alignment-Score is based on the results from the PACTA analysis, the limitations mentioned beforehand must also be taken into account here.

Another limitation is that the Paris-Alignment-Score uses two different alignment metrics. On the one hand, the alignment for sectors with expansion plans and technology roadmaps, and on the other hand the alignment for sectors without forward-looking data. Due to these, the comparability among the sectors is limited.

In addition, there is a limitation in the emission weights as to whether they are always up-to-date, such as the share of global emissions. Moreover, the effectively avoided emissions were estimated to weight different technologies, however, the calculation of those is associated with uncertainty and the concept of avoided emissions experiences also criticism.

Furthermore, the threshold attempts to assign the Paris-Alignment-Score only if it is likely that most emissions will take place in the PACTA sectors. However, this assessment is limited in that it is a relative comparison to the MSCI World, which might not always be the right benchmark.