PACTA Climate Test Switzerland 2022

Briefing for Participants (Corporate Bonds & Equities Portfolios, Real Estate & Mortgages)

January - December 2022

The 2° Investing Initiative (2DII) is an independent, non-profit think tank working to align financial markets and regulations with the Paris Agreement goals.

Globally focused with offices in Paris, New York, Berlin, London, and Brussels, 2DII coordinates some of the world's largest research projects on climate metrics in financial markets. In order to ensure our independence and the intellectual integrity of our work, we have a multi-stakeholder governance and funding structure, with representatives from a diverse array of regulators, policymakers, financial institutions, universities, and NGOs.

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Content

Executive Summary

About this document

This note provides a technical briefing on the suite of the PACTA (Paris Agreement Capital Transition Assessment) Climate Test in Switzerland 2022, and how its modules & analytics can be applied by financial institutions. This file is addressed to financial institutions willing to participate in the Climate Test 2022 with their global listed equities and corporate bonds portfolios (in PACTA sectors) as well as their Swiss mortgages and real estate investments. The test will include a quantitative analysis of these asset classes but will also capture the climate relevant action of participants in all asset classes on a qualitative level.

The Swiss Federal Council's recommends, that financial market players use comparable and meaningful climate compatibility indicators to help create transparency in all financial products and client portfolios (see also the federal council's press release of the 17.11.2021). PACTA compares the production plans of global companies and refurbishment plans of Swiss buildings included in the portfolios with a pathway that is needed to limit maximum warming to 1.5° Celsius. Participation in the Climate Test can therefore support the implementation of this recommendation.

The aggregated results from these PACTA Climate Tests are an important monitoring tool for financial institutions and public authorities in Switzerland on how far progress has been made towards the goal of the Paris Agreement to align financial flows in a climate-friendly way. Switzerland rolls out this PACTA Climate test for the third time after 2017 and 2020. This monitoring framework allows the government, parliament, financial institutions, and the public to track progress of the financial markets' climate goal alignment.

This year's test will be applied again to pension funds, insurances, banks, and asset managers on a voluntary basis. Thereby, the climate test builds on the success of previous PACTA climate tests in Switzerland in 2017 and 2020, in which a large share of the Swiss market participated. In the first PACTA Climate Test in 2017[1], 79 pension funds and insurances participated in the climate test. These participants represented 61% of assets under management by pension funds, and 70% by Swiss insurances. In the 2020 test[2], also banks and asset managers have been included in the exercise, which led to a total of 179 participating financial institutions. The participating institutions in the 2020 test represented an estimated 88% of the balance sheet total of banks in Switzerland, 79% of assets under management by insurance companies, and 82% of assets under management by pension funds.

The Climate Test is a dedicated project initiated by the Federal Office for the Environment (FOEN) together with the State Secretariat for International Finance (SIF), in which 2° Investing Initiative (2DII) works together with Wüest Partner AG (WP) to support participating institutions with the application of PACTA. The PACTA Climate Test 2022 aims to contribute to this knowledge about the climate impact through financial market actors. Therefore, a comparable market coverage to the 2020 test is intended as well as further functions are included in the test to improve the user experience, but also to increase the knowledge which can be drawn from these tests.

This PACTA climate test consists of two quantitative modules and a qualitative survey: First, the alignment of participating institutions' investments in equity and corporate bonds with various climate scenarios in 8 different climate relevant real economy sectors will be measured: power, coal mining, oil, gas, auto manufacturing, cement, steel, and aviation. This quantitative analysis is carried out with the **original PACTA**

[1] 2DII, 2017. Out of the Fog – Quantifying the alignment of Swiss pension funds and insurances with the Paris Agreement. October 2017. URL: https://2degrees-investing.org/resource/out-of-the-fog-quantifiying-the-alignment-of-swiss-pension-funds-and-insurances-with-the-paris-agreement/

[2] 2DII and WP, 2020. Bridging the Gap – Measuring progress on the climate goal alignment and climate actions of Swiss financial institutions. November 2020. URL: https://2degrees-investing.org/resource/bridging-the-gap/

‘equity and bond module’, an open-source software developed by the 2DII to measure alignment of financial portfolios. As a second part of the Climate Test, the **‘real estate and mortgage module’** analyzes the emission intensity of Swiss properties and compares it to climate targets to achieve 1.5°C. This module has been mandated by FOEN and developed by Wüest Partner AG. The qualitative survey captures further climate-relevant activities of financial institutions across all their business activities.

The Climate Test 2022 in Switzerland is part of the PACTA Coordinated Projects (COP) which are run by the 2DII. PACTA COP is a dedicated program to help governments and supervisors with the application of PACTA to the portfolios of their regulated entities. The outcome can be used by governments, supervisors, and participating financial institutions to inform their climate strategies and actions. Beside the experience with these projects in Switzerland (2017, 2020), 2DII run other assessments– among others – in Austria, Liechtenstein, and Luxembourg. Currently, 2DII helps to run PACTA assessments also in, Norway, Peru, and Colombia.

This briefing is available in English, German and French. It and summarizes the project management components of the Climate Test 2022 in Switzerland, the PACTA methodology and how it can be used by financial institutions in practice.

How does the Climate Test 2022 in Switzerland work?

The goal of this Climate Test is to measure the alignment of both the entire financial sector and the individual participating institutions. The outcome can be used by the government or participating institutions to inform their climate strategies and actions.

For the Climate Test, FOEN acts as host of this assessment and invites – together with the State Secretariat for International Finance (SIF) and supported by the associations – the relevant financial institutions, whose participation is voluntary. Participants then upload their portfolios a to a dedicated, secure, and confidential platform (Transition Monitor Platform, open for the Swiss coordinated PACTA climate test as of 01 march 2022), which in turn delivers individual climate alignment results with anonymized peer comparisons. For mortgage portfolios a dedicated non-disclosure-agreement guarantees the confidential use of the data (see section 4.2.2.). Financial institutions can choose three different parts of analysis:

1. **Climate scenario analysis (chapter 1).** The first building block of the PACTA tool is the climate scenario analysis. The analysis covers the **equity and corporate** portfolio's current exposure to climate-relevant sectors as well as an analysis of the alignment of the investment and production plans of the companies in the portfolio with global climate goals. **Real estate and mortgage** portfolios are analyzed, how aligned they are with the Swiss climate targets for the building sector.

2. **Stress-testing climate-related risks (chapter 2).** The second part of the analysis involves a calculation of potential losses under 'climate stress-test scenarios', considering transition risks for power, automotive, and fossil fuel sectors. This stress-test for equity and corporate bond portfolios is **an optional analysis** in the Swiss Climate test.

3. **Impact analysis** (**chapter 3**). The third part is a **qualitative survey** of further climate actions by financial institutions. The objective of this qualitative analysis is to identify – in addition to the quantitative analysis – financial institutions' climate-relevant measures within all asset classes (beyond the asset classes analyzed in the quantitative part) or outside asset management strategy, e.g., policy engagement. Both analyses are needed to help contextualize climate-relevant activities, find best practice as well as to inform the focus of future research with respect to the effectiveness of climate-relevant measures.

Results. The results of the analyses will be put into three different documents.

- **On the one hand, a meta report** will be created containing the results for the entire participating financial sector in English with an executive summary in German and French. FOEN publish this report. However, the meta report does not contain any individual information.
- In addition, one report per financial sector (pension funds, insurance companies, banks and asset managers) is produced with anonymised and aggregated data. These automatically generated **sectoral reports** correspond to the form of the individual test reports and are published in German, French and English by the FOEN.
- **On the other hand, automatically generated, individual reports** will be created for each participant available in German and French as well as in English (except of the real estate/mortgage chapter). These reports consist of two parts, the **interactive report**, containing all individual results, and the **executive summary**, presenting the most important results on an aggregated level. These two individual report documents are confidential, and there is no obligation to publish any information. The individual participants decide on the publication of their individual results.

What is new. Many participating institutions will already be experienced with the PACTA Climate Test and its methodology from the last two rounds in 2020 and 2017. Since the last climate test in Switzerland in 2020, the software PACTA has been innovated with several technical improvements. The following summarizes the key innovations for this climate test in Switzerland compared to the last one in 2020:

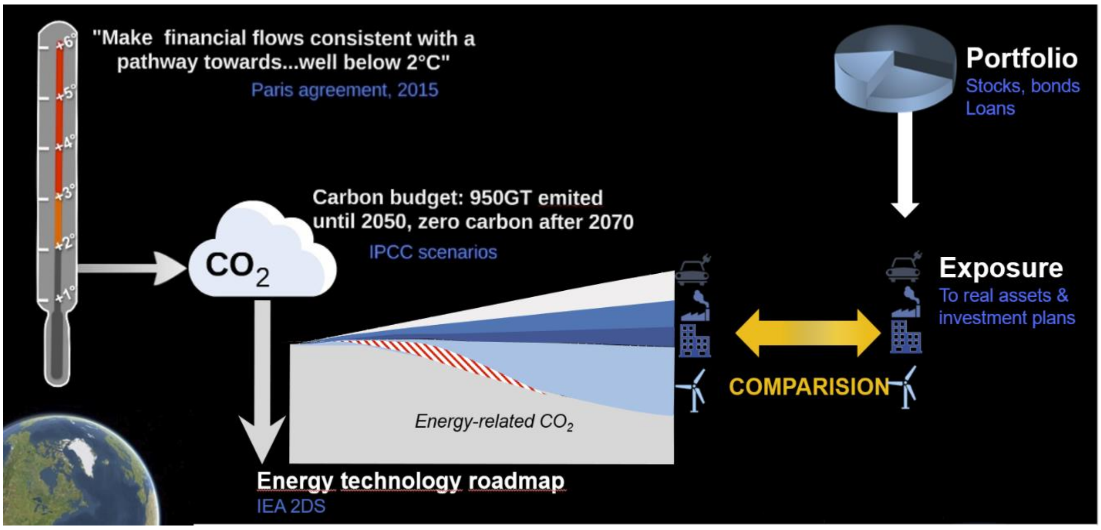
- **Equity and corporate bond module:**
    - **New Scenarios** such as Net Zero and 1.5C Scenario from the Joint Research Centre.

  - **Intertemporal Comparison**: A methodology is under development to compare the climate impact of the Swiss financial market at an aggregate level over time. This analysis will only be published in the meta report.
  - **Transition Monitor Platform**: The Transition Monitor Platform - open for the Swiss coordinated PACTA climate test as of 01 march 2022 - will include an automatic audit function for the data sets to improve the uploading process.
  - **Analysis & Reports**: The individual reports, both the interactive report and the executive summary, are improved in terms of readability and clarity. Therefore, the interactive report has been restructured. The executive summary benefits from the valuable feedback from the various associations (cf. below) and contains, among other things, a new structure, additional graphics as well as more explanations.
- **Real estate and mortgage module:**
  - **Renewable heating systems:** Different types of renewable energy sources can be covered now in more detail such as district heating, efficient wood heating, heat pumps, etc.
  - **Real consumption data:** If participants have consumption data at their disposal, they can be implemented in addition and be used for individual illustration.
  - **Climate alignment:** The limit value of the rejected CO_2 law used for the definition of climate goal alignment in 2020 is replaced by the Federal Council's reduction path for the year 2050.
  - **Analysis & Reports:** The evaluation will be more detailed, additional graphics will improve the readability, different calculation methods (e.g.GRESB) will briefly be compared.
- **Qualitative survey and individual reports:** The qualitative survey as well as a further developed executive summary of the individual test report for 2022 have been consulted informally with the interested associations and their respective experts. The valuable feedback of AMAS, SBA, SSF, SVV, SVVK-ASIR, VSKB, WWF/Greenpeace is included as comprehensive as possible.

What is the PACTA-software (‘Equity and Bond Module’)?

The PACTA software measures the alignment of corporate bonds and listed equity with climate scenarios, such as the Paris Agreement-conform 1.5°C pathway, for the following 8 climate-relevant sectors: power, coal mining, oil & gas, auto manufacturing, cement, steel, and aviation. Therefore, PACTA identifies the financial portfolio's exposure to high- and low-carbon technologies across the climate-relevant sectors. This assessment can be used to approximate the portfolio's relative exposure to the economic activities that are impacted by the transition to a low-carbon economy. Further, PACTA then compares the extent to which companies’ current and planned assets, production profiles, investments, and GHG emissions are aligned with the benchmark-scenario. As an output, PACTA provides sector-specific, technology-focused insights into how current 5-year plans of companies allocated to the portfolio compare to the 1.5°C-pathway or other climate scenarios. *Figure 1* below summarizes the process.

Figure 1: How PACTA works - A comparison between companies' exposure and climate scenario trajectories



What is the Swiss 'Real Estate and Mortgage Module'?

The Swiss Real Estate and Mortgage Module is an open-source software based on R that was conducted by FOEN and developed by Wüest Partner AG. It allows financial institutions to measure the alignment of their Swiss mortgage and real estate portfolio with the climate target of the Swiss building sector to reach net-zero emissions in 2050. To take part in this analysis, you need to upload the location of the properties in your portfolio in form of the EGID (Swiss Federal Building Identifier) or an address. Other attributes like the heating system or square meters of the energy attribution area per building can either be filled in by the participants which have this data available or automatically be matched with the Swiss Building and Housing Register. Refurbishment plans can also be stated The CO2-emissions of each property as well as of the whole portfolio is then estimated and compared with peers and the emission pathway of the Swiss building sector. For more information about the methodology, please refer to section 1.7.

FAQ

Q: Where can I find more information about the PACTA Climate Test 2022?
A: You can find more information about the project on the website for the Swiss PACTA Climate Test 2022, including the briefing note and other information related to this project.

Q: How much does it cost to participate?
A: Participation is free of charge. The further development of the open-source tool and the roll-out of the coordinated PACTA test in Switzerland are supported by FOEN.

Q: What asset classes and sectors are covered in the analysis?
A: The quantitative PACTA analysis covers global listed equity, and corporate bonds in the power, automotive, oil and gas, coal mining, aviation, cement, and steel sectors. In the Swiss case, also Swiss real estate and mortgages can be covered with a separate module (see section 1.7.). With a qualitative survey additional climate relevant action of participants also on further asset classes are captured. And analysis of loan portfolios for global loans into this especially climate-relevant sectors (8 PACTA sectors) is also available. Because we assume that the number of financial institutions with such credit portfolios is rather small, this module is not offered as a standard in this coordinated climate test. However, if you are interested in using this module, please contact pactacop@2degrees-investing.org as early as possible.

Q: Why should I participate in the coordinated test instead of running the analysis on my own using the online tool and the R-Skript for the real estate module?
A: Financial institutions can currently run the PACTA tool (resp. the equity and corporate bond module) at http://www.transitionmonitor.com/participate. However, there are several benefits to participating in this coordinated climate test round, notably:

- Ability to compare results directly to your 'peers' in Switzerland and the entire industry in an anonymized manner.
- Analysis of qualitative elements (climate-relevant measures beyond asset management strategies, policy engagement, etc.) and comparison with best practices.
- Application of further technical updates and improvements of the PACTA modules before the public release.
- Contribution to broader awareness-raising, the regularly monitoring of progress and dialogue with policymakers.
- Assistance from analysts and different dedicated workshops.
- Consideration of real estate and mortgage data.
- Additional to the individual, interactive reports including an executive summary, a meta report and sectoral reports will be provided.

Q: What is the timeline of the PACTA Climate test?
A: The test will take place in 2022 and will involve the following steps (for more information, please refer to section 4.):

Time	Steps
From February	Information about test, the data templates as well as the non-disclosure agreements are available on the website for the Swiss PACTA Climate Test 2022 in German, French and partly in English (see following sub-sections).
February/March	Onboarding webinars. If you are interested in participation, please email to pactacop@2degrees-investing.org or visit the PACTA Climate Test 2022 website for further information: https://www.transitionmonitor.com/pacta-for-investors/pacta-ch-2022/. – 15. February 2022, 10-12h: PACTA climate test **introduction (English)** – 28. February 2022, 13-14h: PACTA für **erfahrene AnwenderInnen (Deutsch)** – 28. February 2022, 14-15h: **PACTA pour les utilisateurs expérimentés (Français)** – 7. March 2022, 16-18h: **PACTA Klimatest Einführung (Deutsch)** The webinars will be recorded (except Q&A sessions) and can be re-watched here.
March – May	Registration, data upload, and filling in the survey (see following sub-sections) - **Registration with a single e-mail address per institution on the Transition Monitor Platform with the Initiative Code PA2022CH as of 1st March 2022.** - Signing sample NDAs (see chapter 4.2.2.) - Upload of data (see section 1.2. for data inputs) - Automated data validation and feedback - If necessary, upload of corrected data - Fill out survey
June – September	Analysis of the portfolio data and preparation of the results (see section 1. & 2. for more information about methodology) by 2DII and WP.
September/October (expected)	Distribution of individual results; the Meta report and sectoral reports will be published. - **Individual Reports, consisting of the Interactive Report** and an **Executive Summary.** Participants receive an automatically generated interactive test report of their results, including peer comparisons. Further, participants receive an automatically generated, static executive summary which summarize the test results for a broader audience. Each institution is free to decide about publication. - **Meta Report**, country study with aggregated data (meta-study), which will be published by FOEN. - **Sectoral reports** automatically created sectoral reports, which contain the anonymized and aggregated data by financial sector (pension funds, insurances, banks, and asset managers). These sectoral reports will be published by FOEN.

Q: If I want to participate, what are the next steps?
A: The following steps need to be taken to participate in the PACTA Climate Test 2022:

- **Signing up for onboarding Webinars.** You can sign up for an introductory webinar or one for experienced users (see above) here: https://www.transitionmonitor.com/pacta-ch-2022/.
- **Information on the Webpage:** This webpage is the knowledge hub of the Swiss PACTA Climate Test 2022 where you can find various project-related information, such as:
    - Information about the PACTA Climate Test 2022 in general
    - Information about the next steps
    - The templates for your portfolio data

- **Registration for the PACTA Climate Test 2022**. From **01 of March 2022** on you can register on the Transition Monitor Platform. **Registration is necessary to take part in the climate test.** The Initiative Code for the coordinated Swiss Project is **PA2022CH.** During the registration process, participants are requested to indicate their respective sector (pension fund, insurance, bank, asset manager) to allow peer comparisons.
    - **You can only register with one e-mail address by institution.** If several persons like to upload files and fill out the survey, please coordinate this internally via this single e-mail address and log-in password you will receive.
    - **Participants who have already registered for the 2020 test or used the online PACTA tool** can use the same account.
    - During the registration process, you need to indicate to which peer group you belong (insurance, pension fund, asset manager, bank). This information will be used for peer group comparisons in the Meta Report, but also in the Executive Summary and Interactive Report.
- **NDA.** On the webpage to the Swiss PACTA Climate Test you can find the pre-filled non-disclosure agreement (NDA) templates. There will be two different NDA templates, one for 2DII including WP's real estate analysis, also covering the qualitative survey, and a separate NDA for the mortgage analysis only with the dedicated persons at WP for the project. Only those persons will have access to the mortgage portfolio data. If you require an NDA, please fill out the highlighted sections in the templates and send the documents to 2DII (pactacop@2degrees-investing.org) and WP (pacta@wuestpartner.com).
- **Data preparation.** As a third step, the portfolio data for the quantitative analysis need to be prepared before upload. Therefore, you will find two templates, one for the equity and corporate bond module as well as one for the real estate and mortgage module on the PACTA Climate Test 22 Webpage. Please use the templates to prepare your portfolio datasets accordingly before upload. For the data preparation, please make sure that the portfolio data are dated to the 31.12.2021. **We ask you to upload your whole portfolios** to gather a representative overview of the Swiss financial sectors climate alignment.
- **Data upload.** Once the data have been prepared according to the templates, you can upload them **from 01 March 2022 until 31 May 2022** on the Transition Monitor Platform. In order to achieve the most representative result, we ask you to upload all the investments you manage (cf. also question p. 16).
- As the PACTA Climate Test Switzerland 2022 is a voluntary exercise, it relies on self-reported data, and neither 2DII nor WP have means to track the accuracy or details of the portfolio data. They can only be checked for plausibility by the information provided in the qualitative survey.
- **Data audit.** The data for the equity and bond module, will be audited automatically on the platform to see if the data frame consists of the correct structure. If not, the user will be notified. The real estate and mortgage data will be transferred directly to the Swiss server from WP, so that 2DII will not have access to the financial data, but only the dedicated persons at WP. This data will be audited after the upload as well an users will be notified if additional information is needed.
- **Survey.** Besides the quantitative analysis of your portfolio data, the aim of the climate test is also to acknowledge your efforts to achieve climate compatibility beyond the uploaded data. In addition, the survey helps to gain a comprehensive picture of the climate-impacting activities of Swiss financial institutions. Therefore, we ask you to fill out an online survey, also to plausibilize the data. You can view the full set of questions that will be asked in a pdf version on the webpage of the Swiss PACTA Climate Test 2022.
- **Analysis and Results.** After the portfolio data have been uploaded and the survey answered, the 2DII and WP will start analyzing the data and creating the output reports which will be released around September/October 2022. **The participating institution will receive its individual, interactive results only via the personal log-in (alerted by e-mail).**

Q: How will users be supported during the process?
A: 2DII and WP commit to support users through different channels as far as the project financed by FOEN allows during the entire project. However, as 2DII is a non-for-profit Think Tank and not an investment advisor

or consultancy, individual support of participants is important but has to be limited because of the services available. The following resources will be offered:

- **Dedicated Website**: The dedicated website PACTA Climate Test 2022 Webpage is intended to work as a resource centre where participants can find all the information and files they need to partake in the project. The website will be hosted by 2dii, and will have all the documents needed i.e., participant briefing, NDA, portfolio templates,. recording from webinars, timeline of the project, contact e-mails, and instruction to book a slot in the helpdesk sections.
- **Introduction webinars.** Details on registration can be found in the schedule and those on the content in the question below.
- **Helpdesks.** 2DII will offer helpdesks to participants who have specific targeted questions, either about the general process of the project (i.e., timeline, registration, etc.) or specifically about the equity and bond module (e.g., data upload, methodology, etc.). The helpdesks will work as one-on-one session between the participant and a PACTA analyst. Participants can book a slot through Calendly via the webpage of the Swiss PACTA Climate Test 2022 in the language of their preference (available in German, French and English). Participants who have specific questions related to the real estate and mortgage module may pose their question directly to Wüest Partner via email (mailto:epacta@wuestpartner.com).
- **Emails.** Apart from the option above, participants can also request user support via email. General questions and questions related to the equity and bond module, may be sent via email to 2DII: pactacop@2degrees-investing.org. Questions in regard to the real estate and mortgage module, may pose their questions directly to Wüest Partner via email (mailto:epacta@wuestpartner.com).
- **Results workshops**. After the publication of the reports, workshops will be held for the test participants. The meta-results will be presented and the individual, interactive test reports will be explained. FOEN and 2DII will inform the participants about the exact dates as soon as they are available.

Q: What will be covered in the onboarding webinars?
A: In the webinars, the following content will be discussed:

1. The **PACTA methodology**: climate scenario analysis for global listed equities, corporate bonds, Swiss real estate and mortgage, qualitative survey (introduction webinars)
2. Presentation of the **Transition Monitor Platform**: a walk-through the platform and its functionalities (introduction webinars) / developments since last round in 2020 (experienced users webinar).
3. **Registration**: how to register your organization in the initiative (all webinars).
4. **Data preparation**: how to prepare the portfolio data for the project (introduction webinars) / developments since 2020 (experienced users webinar).
5. **Non-disclosure Agreements**: instruction on gathering signatures and sending the document (introduction webinar), content and data security thanks to the special NDA for mortgages (all webinars).
6. **Uploading your portfolio**: where to upload your file and auditing it (all webinars).
7. **Survey**: how to fill the qualitative climate action survey and the advantages of doing so (introduction webinars).
8. **Interactive report**: a quick walk-through the final interactive report that institutions will receive once the project is finalized (introduction webinars) / news in the 2022 edition (experienced users).
9. Q&A.

Please register for the webinars via the dedicated website for the PACTA Climate Test 2022.The webinars will all be recorded (except Q&A sessions) and made available here: https://www.transitionmonitor.com/pacta-ch-2022/. If after the webinars participants are still having issues, they are welcome to contact 2° Investing Initiative PACTA team via e-mail pactacop@2degrees-investing.org or via helpdesks (described below).

Q: Which data to prepare and what to consider?
A: In order to achieve the most representative result possible, we ask you to consider all the investments you manage, both for the equity and bond module as well as for the reals estate and mortgage module. Besides the name, you can optionally specify various other properties of the portfolio. Specifically, you are asked to indicate per portfolio to which of the following categories it applies:

- Direct investments (like directly hold real estate, self-managed assets) / indirect investments (like indirect real estate investments, mortgages, mandates)
- ESG / non ESG / green thematic strategy (a strategy that involves investments exclusively in companies classified as green or climate-aligned based on your own or third-party assessments. Note that ESG funds, low-carbon funds, or funds with exclusion policies do not fall in this category).

Please make sure that portfolios are effective as of 31.12.2021.
The equity and bond portfolios should contain positions in a list of ISINs with corresponding market values and currencies. We will also evaluate funds according to all listed direct holdings within the fund. A sample portfolio that illustrates the proper formatting and content can be found on the dedicated website for the PACTA Climate Test 2022. We kindly ask you to adhere to the form specifications of the portfolio templates for all portfolio data records submitted.

Q: Will my portfolio information be kept confidential?
A: All data provided or downloaded in the process of using the online tool is kept confidential and will not be distributed or used for purposes other than running the analysis and providing results, as well as anonymized use for meta-studies and peer comparison. 2°Investing Initiative and Wüest Partner AG will sign a non-disclosure-agreement with the participants to ensure confidentiality. For the mortgage data, the participants will sign a separate NDA with the analysts at Wüest Partner AG. This NDA is only between the analysts and the participating party and not with Wüest Partner as an entity. That way, even 2DII and Wüest Partner will only have access to the actual results from the analysis of the mortgage module, and not to the portfolio data themselves. For the PACTA online tool, 2° Investing Initiative uses a stand-alone server, i.e., no other website or information is stored on the server, which increases the security significantly. The server is set up in compliance with the security standards of the German Federal Data Protection Act (BDSG, "Bundesdatenschutzgesetz"), Tele Media Act (TMG, "Telemediengesetz"), and is built on infrastructure that is DIN ISO/IEC 27001 certified.

Q: Will I be required to publish the results?
A: You will not be required to publish the results. However, the PACTA results from this analysis – in form of your executive summary or individual, interactive report – can be used for climate disclosure. To learn more about how PACTA is compatible to the TCFD guidelines and EU Taxonomy, please refer to 2DII's report "The Disclosure Puzzle: The Role of PACTA".

Q: How does the PACTA analysis differ from portfolio carbon foot printing?
A: PACTA is a scenario-based analysis and is forward looking, as it assesses the alignment of a portfolio with different climate scenarios based on forward-looking production and capacity data of companies. Carbon foot printing relies on backward-looking emissions data and provides rather a snapshot of today based on historical data. The PACTA analysis and carbon foot printing are therefore rather complementary. Since portfolio carbon foot printing often requires the normalization by financial units, this prevents benchmarking to scenarios, and hinders a meaningful comparison between the climate performance of companies.

Q: Will the project give me information on what climate actions I can take?
A: Climate actions are defined as all actions that financial institutions can take to aim for a positive climate impact in the real economy. Examples of actions undertaken today include engagement, divestment, offering sustainability-linked products, etc. For financial institutions interested in actively contributing to climate change mitigation as a next step to the PACTA alignment analysis, we developed a "Climate Action Guide" available in the interactive test report.

Q: Where are the overall results for Switzerland published?

A: The results of the PACTA Climate Test 2022 of Switzerland (meta report) and the sectoral reports are published by the FOEN. You can find the report and the overall results of the 2020 and 2017 analyses at www.bafu.admin.ch/climate-and-financial-markets.

Q: I have another question that is not answered in this briefing.
A: Please contact us at pactacop@2degrees-investing.org

Chapter I

Climate Scenario Analysis

1. Climate Scenario Analysis

The climate scenario analysis is being conducted separately for the equity and bond module on the one hand (2DII's PACTA methodology) and the mortgage and real estate module on the other hand (Wüest Partner AG). This difference is also reflected in this section. The sub-sections 1.1. to 1.6. mainly refer to the equity and bond module, while section 1.7. refers to the mortgage and real estate module.

1.1. Overview of metrics for scenario analysis

The first part of the analysis is a climate scenario analysis, which provides an assessment of a financial portfolio's alignment with different climate scenarios from the IEA, UN PRI and JRC. It answers three questions, each corresponding to a metric included in the results of the analysis:

1

Research Question. What share of the portfolio is currently exposed to activities in sectors which are affected by the transition to a low carbon economy?

Exposure Metric. The *current sector and technology mix exposure* shows the estimated share of the portfolio that is exposed to the following sectors, representing roughly 70-80% of global CO_2 emissions and an estimated ~80% of CO_2 emissions in a typical equity or corporate bonds portfolio: power, automotive, oil and gas, coal mining, aviation, cement, and steel.

2

Research Question. How aligned are the investment and production plans of companies in the portfolio with different climate scenarios and the Paris Agreement?

Production Volume Trajectory Metric. Based on static portfolios, the metric shows the portfolio's evolving exposure in the next 5 years to selected technologies relative to four IEA transition scenarios (the Beyond 2° Scenario (B2DS), Sustainable Development Scenario (SDS), Stated Policies Scenario (SPS), and Current Policies Scenario (CPS)) and three JRC's temperature goal scenarios (Reference, 2°C and 1.5°C). It also compares the portfolio's trajectory to the trajectory of the global listed equity or corporate bond market over the next five years. It is expressed as a percentage deviation from the scenario, as well as a deviation in units of capacity or production (e.g. Megawatt, cars produced).

3

Research Question. What is the portfolio's technology mix in climate-relevant sectors expected to look like in five years based on current investment plans of the companies underlying the portfolio, and how does it compare to peers, the market, and a technology mix aligned with the Paris Agreement?

Technology Mix Metric. This metric illustrates the portfolio's expected technology mix in the power, automotive, oil and gas, and coal mining sectors in five years based on the current production and capital expenditure plans of the companies, based on the results of #1 and #2, and compares it to peers, the market, and a technology mix aligned with a climate scenario that meets Paris Agreement goals.

4

Research Question. Which companies are driving the portfolio's alignment with climate scenarios?

Company-level Technology Mix Metric. This metric is an extension of the technology mix, but at the company level for the power and automotive sector. It displays a breakdown of each invested company production capacity in each sector by technology. This is compared to the portfolio, benchmarks and a hypothetical portfolio if it were to be aligned with the selected scenario. Companies that have higher exposure to a technology than the portfolio drive the exposure of the portfolio to this technology up.

1.2. Overview of inputs and coverage for scenario analysis

1.2.1. Coverage

Asset Classes. The analysis covers listed equity, and corporate bonds. An additional analysis is possible for the Swiss real estate and mortgage sector (please see section 1.7. for further information).

Sectors. The analysis covers climate-relevant sectors that are key to the transition to a low carbon economy. These include the power, automotive, oil and gas, coal mining, aviation, cement, and steel sectors, which together account for approximately 70-80% of the CO2 emissions associated with a typical portfolio as well as 15-25% of a typical portfolio in terms of asset value. Agriculture, and forestry sectors, despite being highly relevant in terms of climate, are not covered on a global level due to a lack of available data and may be covered by other tools. R&D investments are also not covered.

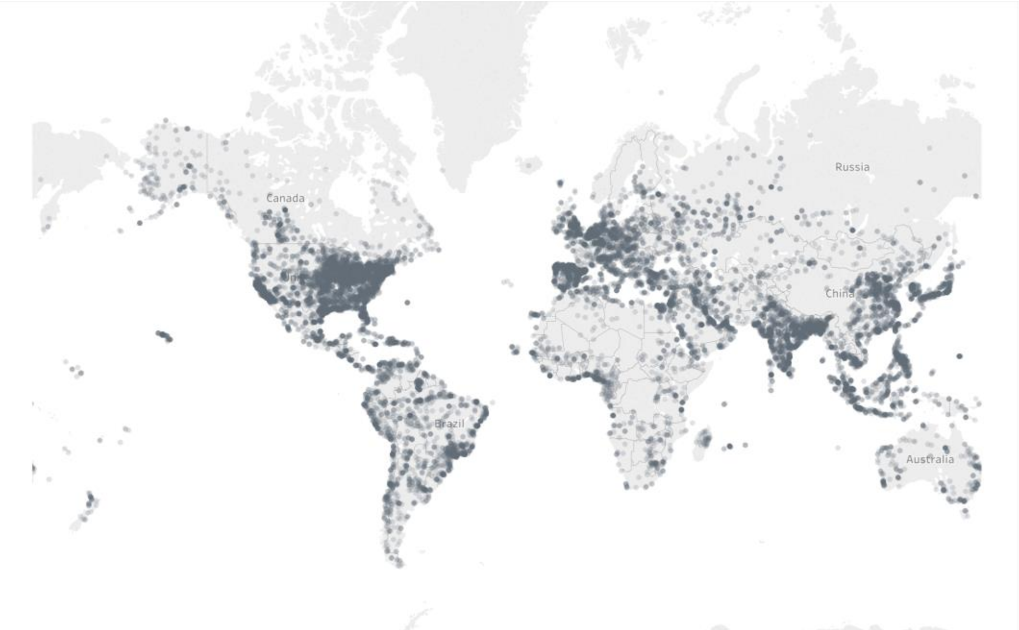
1.2.2. Data Inputs

Portfolio Data. To run the portfolio assessment, participants provide an input file containing security information for each of the portfolios to be analyzed. It includes the following information (see section 4.1. for more information):

i. Either a unique identifier for listed instruments or the company name.
ii. One ISIN for every listed instrument (funds are identified by their ISIN. Securities in each fund are included in the analysis where possible).
iii. The market value of the financial assets held in the portfolio
iv. The currency code corresponding to the market value
v. A time stamp of the portfolio

Financial Data. Financial data from Bloomberg is used to assign securities to sectors and to link them to parent and subsidiary companies, as well as for sector classification analysis. This data is supplied by 2° Investing Initiative.

Physical Asset-Based Company Data. The model uses, where possible, forward-looking asset-based company data for key technologies in climate-relevant sectors. The model is data agnostic as long as it complies with the format needed to run the PACTA code. The so-called asset-based company data for PACTA analyses are sourced from Asset Resolution. Asset Resolution gathers data on physical assets from data providers included those listed in the following table and matches them with companies and financial securities to produce the asset-based company data feeding into PACTA. For PACTA COP projects data will be updated every fourth quarter of each year. The map below highlights an example of the individual data points for global coal-fired power plants.



Data provider	Sectors	Key data points
GlobalData	Power, oil & gas, coal mining	a. Power plant data, including installed capacity, technology, status (i.e., announced, active, decommissioned, etc.). b. Oil and gas field data, including annual production volume. c. Coal mine data, including annual production mass.
AutoForecast Solutions	Automotive	Production forecasts for light duty vehicles.
Cirium	Aviation	Passenger, cargo and combined aircraft data, including number of seats or tons transported, aircraft model, etc.
PlantFacts *(under revision)*	Steel	Steel plant data, including production and CO_2 emissions.
Cemnet	Cement	Cement plant data, including production and CO2 emissions.

Scenario Data. This analysis is based on the climate scenarios developed by the IEA,JRC, and UN PRI shown in the table below.

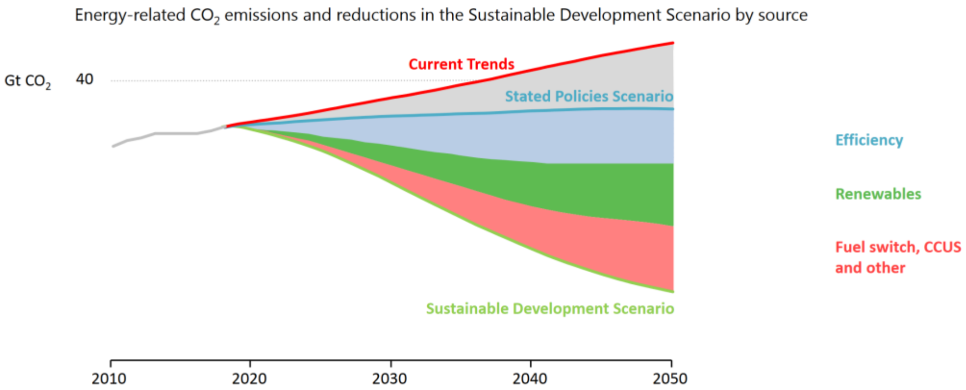
Scenario	Abbreviation	Estimated temperature increase	Source	Sectors Covered
POLES 1.5°C scenario	POLES1.5	~ 1.5°C	JRC	Power, automotive, oil &gas and coal
POLES 2°C scenario	POLES2	~ 2°C	JRC	Power, automotive, oil &gas and coal
POLES Reference Scenario	POLESref	2.9 - 3.8°C	JRC	Power, automotive, oil &gas and coal
Beyond 2° Scenario	B2DS	< 1.75°C	ETP 2017	Power, automotive, oil & gas, coal, cement, steel, and aviation
Sustainable Development Scenario	SDS	1.75 - 2°C	WEO 2020, WEO 2019	Power, oil &gas and coal
Stated Policy Scenario	SPS	2 - 2.7°C	WEO 2020, WEO 2019	Power, oil &gas and coal
Current Policy Scenario	CPS	> 2.7°C	WEO 2019	Power, oil &gas and coal

For the PACTA Climate Test Switzerland 2022 new scenarios are foreseen to be included, such as Net Zero Scenarios, WEO 2021, and GECO 2020.

These scenarios were selected for their high degree of granularity, extensive geographic and sectoral coverage, as well as for the compatibility of their indicators with the needs of 2DII's analysis. In particular, the model uses the following indicators as basis for comparison to the portfolio:

a. Power capacity by technology in megawatt (MW).
b. Oil production in barrels per year.
c. Gas production in billions of cubic feet per year.
d. Coal production in tons of coal equivalent per year.
e. GHG emissions pathways in the aviation, shipping, cement, and steel sectors.

The figure below illustrates the distinction between IEA's "Current Policies", "New Policies Scenario" and the "Sustainable Development Scenario" in terms of CO2 emissions reduction until 2050.

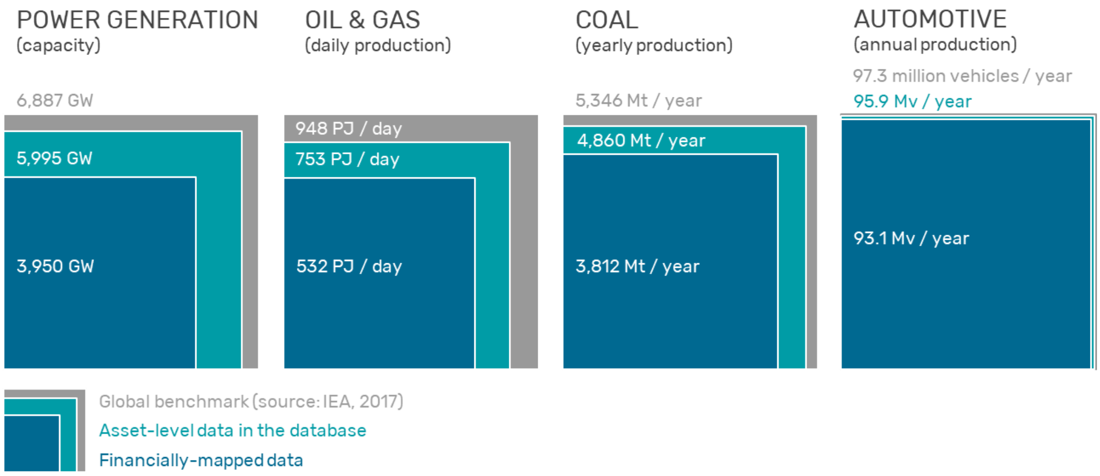


Technical Deep Dive: Asset-Based Company Data

The PACTA model is based on physical asset-based company data across key climate-relevant sectors. Any data source formatted as required by the PACTA code can be used. On Transition Monitor and as part of the PACTA COP project, 2DII sources the data from Asset Resolution. Asset Resolution links financial portfolios with the real economy and provide 2DII with asset-based indicators linked to companies and securities.

Asset Resolution works with specialized sectoral data providers (see table on the previous page) to source data on individual assets in climate-relevant industries. These specialized data providers use a variety of research capabilities, including web scraping, desk research, and direct engagement with industry to map physical assets. Forward-looking information is based on company investment and production plans that have been announced publicly.

These asset-level datasets cover over 280,000 individual assets (e.g. individual power plants, oil fields, etc.), accounting for around 75% of global carbon emissions. The following charts show the coverage of asset-level data relative to estimated global production figures—the global benchmark—for the power, oil & gas, coal, and automotive sectors. They also highlight the share of assets that have been mapped to financial data and are thus included in the analysis.



Only the assets that have been mapped to financial data are included in the analysis (the blue box in the charts above). This is because financial identifiers are required to link the asset-based production data to the portfolios provided by the participants.

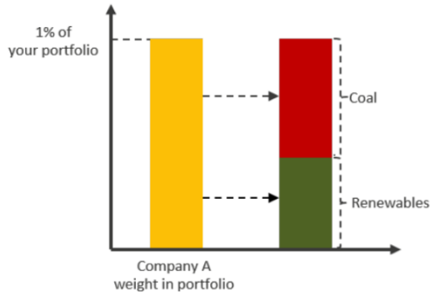
The gap between the asset-level data coverage and the global production figures can be explained by non-corporate asset ownership, time lags in reporting, and errors in asset-based datasets. The discrepancy between the asset-based company data and the financially mapped production figures exists because not all companies listed in the asset-based company data have been matched with financial instruments in the financial data. Asset Resolution is continuously working to expand its matching capabilities, including with a text-string matching software and manual matching.

Provided that assets have been matched with financial data, Asset Resolution allocates production to companies, and further to financial instruments, based on direct ownership of assets and based on majority ownership of subsidiary companies that own assets. The result is a forward-looking production profile for each financial instrument that serves as starting point and basis of comparison for climate scenario analysis.

1.3. Current Technology Mix Exposure

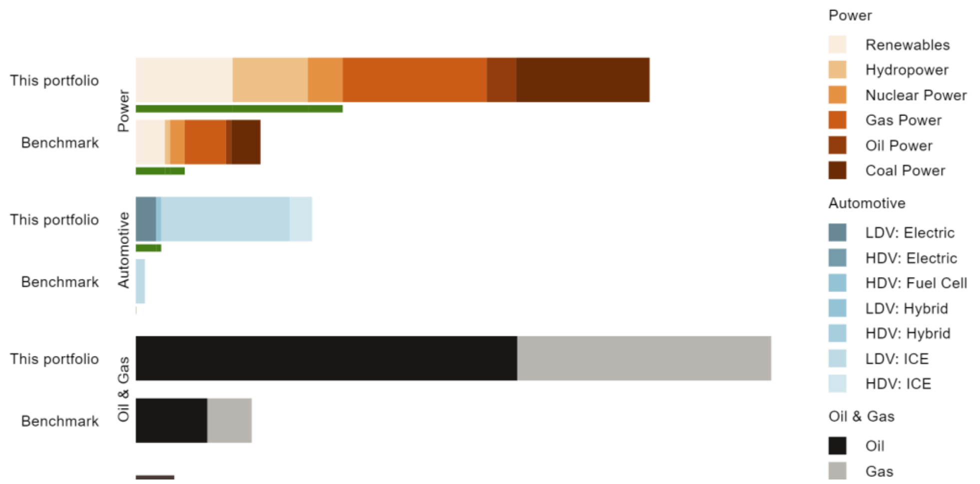
Research Question. What share of the portfolio is currently exposed to activities in sectors by the transition to a low carbon economy?

Metric and Methodology. This metric shows the estimated share of the portfolio that is currently exposed to companies with assets in the fossil fuels, power, aviation, cement, steel, and road transport sector. It is calculated by first taking the weight of the portfolio that is exposed to companies in each of these sectors and then calculating the technology breakdown of assets owned by these companies (see figure on the right).
The portfolio's current technology exposure is compared to the market portfolio, which is calculated based on the exposure of the global universe of assets in the relevant asset class to the sectors, as well as to the peers participating in the tests.



Limitations. The sectors included in this analysis account for about 70-80% of the CO_2 emissions associated with a typical portfolio, and thus contribute significantly to a portfolio's exposure to climate risk. However, the metric does not cover sectors, such as the real estate, agriculture and forestry sectors, despite being highly relevant in terms of climate risk and impact, due to a lack of available data and scenarios.

Sample Visual. This chart shows the estimated share of the portfolio that is exposed to activities in the power, automotive and fossil fuel sectors (*Note: The analysis extends to the other sectors described above)*, in comparison to the listed equity market. A value higher than the market portfolio suggests that the portfolio is currently more exposed to these activities than the market, on average. A value lower than the market portfolio suggests that the portfolio is less exposed to these sectors, all other things being equal. The participant will also benefit from comparing results to peers. The green bars reflect the share of as low-carbon considered technologies, i.e. technologies which need to be built out to manage the future transition towards a low-carbon economy.



Use Cases.

- Manage exposure to climate-relevant sectors & technologies;
- Provide clarity to management and other stakeholders to what extent the portfolio is exposed to 'transition risk' and 'climate compatibility' issues;
- Reporting to external stakeholders.

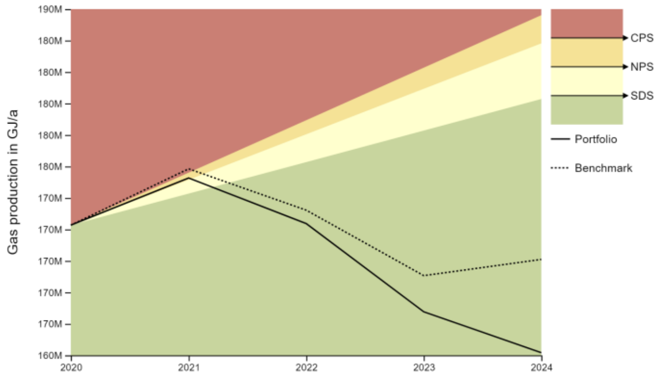
1.4. 5-Year Forward-Looking Alignment Trend

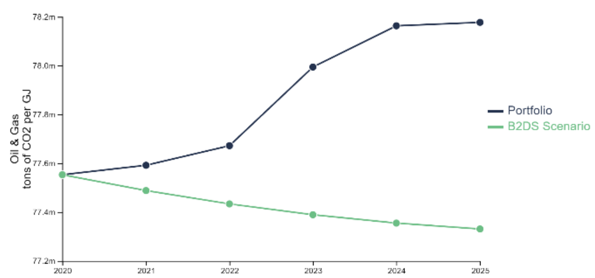
Research Question. How aligned are the investment and production plans of companies in the portfolio with different climate scenarios and the Paris Agreement?

Metric and Methodology. This metric traces the portfolio's exposure to selected climate-relevant technologies relative to various IEA and JRC transition scenarios. The trajectory of the global listed equity or corporate bond market is also shown, as well as comparison to the peers participating in the PACTA COP country project. It is forward-looking and compares the portfolio's expected production trajectories in different technologies to scenario-aligned trajectories over the next five years. The portfolio's expected trajectory is based on the underlying companies' investment plans for the next five years, while the market's trajectory is the combination of the current investment plans of all companies in the respective asset class for the same period.
The scenario-aligned trajectories represent the trajectories that would be expected if the companies in the portfolio were to develop according to the scenarios. They are calculated by applying the rates of change defined by the scenarios to the portfolio companies based on their respective market share (see next page for detail).

Limitations. The portfolio's expected trajectory is based on currently known production and capital expenditure plans from companies and is therefore subject to change. In fact, given the 5-year time horizon, it is likely that plans will change, which presents an opportunity to engage with companies on their investment plans. Similarly, participating financial institutions may alter their portfolio's composition over time.

Sample Visuals. The first visualization type are the trajectories charts. These charts trace the corporate bond portfolio's exposure to a given sector production in comparison to the IEA and JRC scenarios. The dashed line shows the expected development of the corporate bond market over the next five years based on current investment plans. The interactive report also displays the alignment of emission intensities by sector compared to the IEA's B2DS scenario (second chart). The chart uses the current emissions intensity of companies within the portfolio as a starting point and shows how this expected to develop over the next five years based on the plans of the company and what would be expected under the scenario.

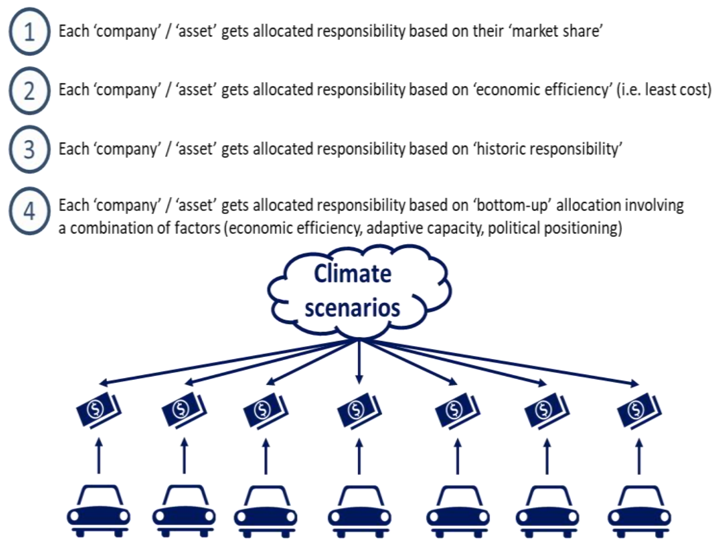




Use Cases.

- Input into target-setting approaches.
- Strategic insight into portfolio positioning relative to market, peers, and scenarios.
- Input into different climate actions (engagement, etc.).
- Indicator for climate goal alignment of financial flows from a policy perspective (implementation of Art. 2.1.c Paris Agreement).
- Reporting to external stakeholders.

Technical Deep Dive: ALLOCATING 'RESPONSIBILITY' FOR ACHIEVING (MACRO) CLIMATE GOALS TO COMPANIES / ASSETS (MICRO ACTORS)



There are 4 approaches that could be considered with regard to allocating the macro-level decarbonization requirements from the scenarios to individual companies. Of these 4, the market share approach is currently applied in PACTA.

Market share approach: This approach uses a simple 'market share' allocation rule where all sector-level production and capacity decarbonization requirements are proportionally distributed across companies based on market share in the technology or sector. For high carbon technology, each company should do a decarbonization effort proportional with the market share in the technology. If the scenario asks for a 20% decrease in ICE vehicles, then all car maker should diminish their ICE production by 20% in the next 5 years. It's not possible to apply this methodology for green technology because a company which would not produce renewables today will not be asked to produce renewable in the future, while we assume that all companies should have renewables capacities at the end of the transition. That's why efforts for green technology build out are shared based on their market share in the total sector. Thus, if we consider two companies that have the same capacity size, and one is already 100% renewables (100MW of renewables), while the other one hasn't started its transition yet (100MW of coal), they should both do the same absolute efforts in renewables to align with a Paris Scenario. The idea behind this approach is that the 2 companies of the same size will want to grow at the same absolute pace in renewables. This approach is actually used in the PACTA methodology.

Economic efficiency / least cost approach (under development): This approach uses sector-level output variables, such as demand and price, as a constraint interacting with the production costs of individual companies, arguing that the 'marginal' product is produced at the lowest cost. The cost approach uses the cost structure of a company's existing, planned, and potential capital stock to estimate which assets meet a sector-wide output constraint under the assumption that low-cost assets will be deployed first. This logic has been applied by the Carbon Tracker Initiative for oil, gas, and coal production and capital expenditure (CTI 2014; 2016).

Historic responsibility (not applied): This approach allocates the responsibility based on 'historic contributions'. It represents a framework in particular in the context of climate litigation analysis in terms of liabilities for climate damages but isn't considered currently in the context of alignment analysis. The logic will be applied in the litigation stress-test scenarios currently under development.

Bottom-up approach (not applied). The bottom-up approach essentially mirrors the concept of equity and credit research analysts and considers a combination of economic and political factors, as well as adaptive capacity and corporate agility. This approach was applied by the CO-Firm in the context of the 2° Investing Initiative led ET Risk project, but is not part of the PACTA model, given the complexity to apply it at scale.

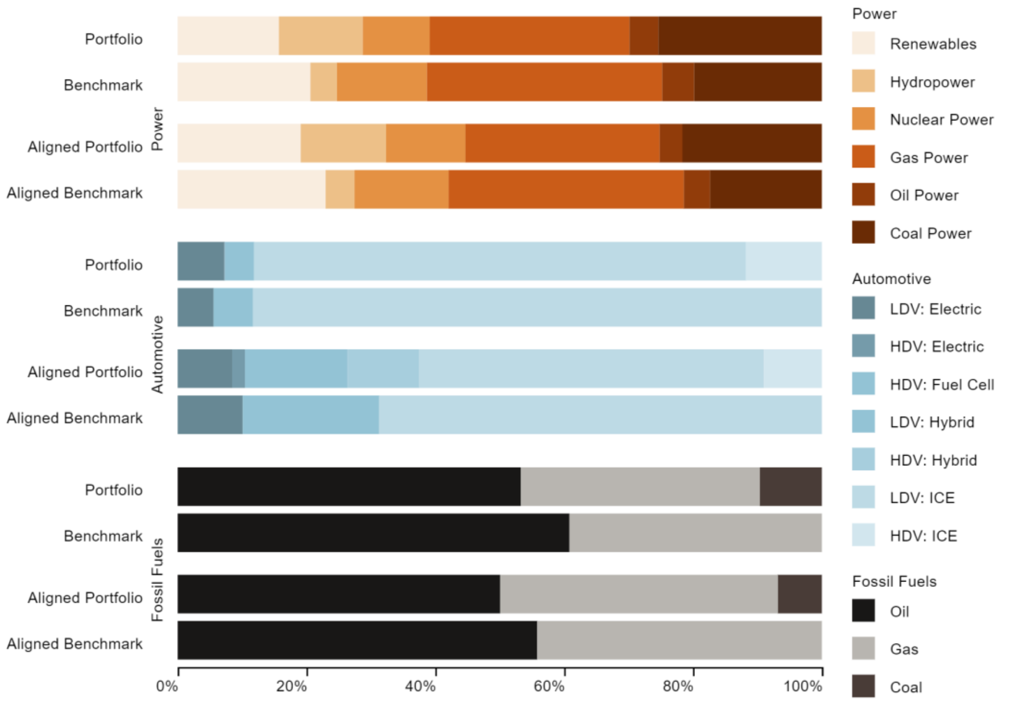
1.5. Future technology mix

Research Question. What is the portfolio's technology mix in climate-relevant sectors expected to look like in five years based on production plans of the companies in the portfolio, and how does it compare to peers, the market, and a technology mix aligned with the Paris Agreement?

Metric and Methodology. This metric illustrates the portfolio's expected technology mix in the power, automotive, oil and gas, and coal mining sectors in five years. It is calculated by taking the portfolio's current exposure to each technology and then applying the trajectory of the exposure over time based on revealed investment and production plans, calculated in the previous step. That is, it represents the next 5-years production values shown in the 5-year trend charts. The metric is compared to peers, the market, and a technology mix aligned with Paris Agreement goals (e.g.: Sustainable Development Scenario by IEA).

Limitations. The portfolio's expected trajectory is based on currently known production and capital expenditure from companies and is subject to change. In fact, given the 5-year time horizon, it is likely that plans will change, which presents an opportunity to engage with companies on their investment plans. Similarly, participating financial institutions may alter their portfolio's composition over time (which indeed, may be one of the outcomes of the test itself). Further, for simplicity's sake, it aggregates certain technologies and may not capture non-mature technologies.

Sample Visual. These charts show the portfolio's expected exposure to technologies in the power, automotive, and fossil fuels sectors in five years. The portfolio's future technology mix is compared to peers from the test, a scenario-aligned portfolio, as well as the scenario-aligned market.



Use Cases.

- Management of concentration risks and portfolio diversification considerations.
- Input into target-setting frameworks and climate action strategies.
- Reporting to external stakeholders (given that it is more intuitive to understand).

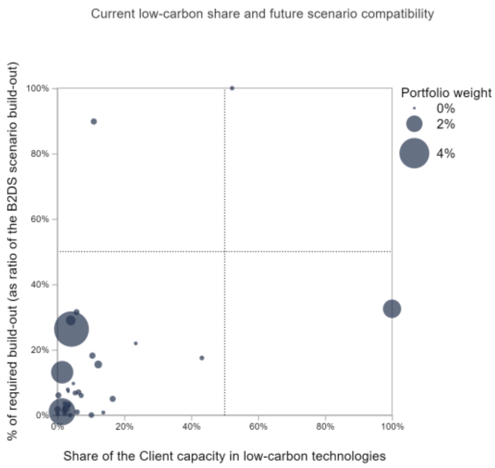
1.6. Company-level results

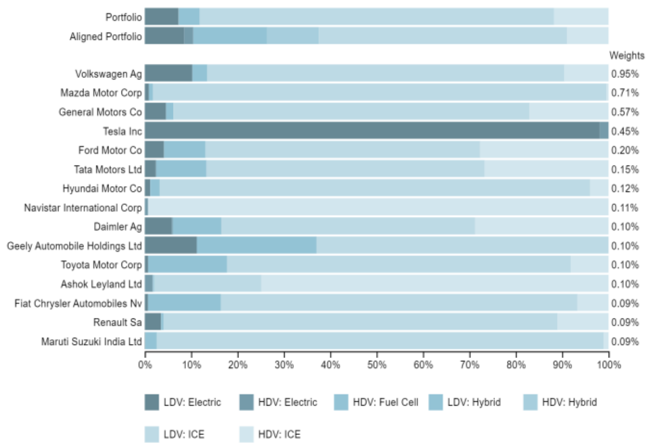
Research Questions. Which companies are driving the portfolio's alignment with climate scenarios? Which companies are the leaders and laggards with regards to shifting towards low carbon alternatives?

Metric and Methodology. This metric is an extension of the conventional technology mix brought to the invested company levels for automotive and power sectors. Within the exposure to the automotive and power sectors it identifies the top invested companies (directly and indirectly through funds) and verifies the share of the portfolio that is currently exposed to these companies operating assets, and it is calculated by taking the weight of the portfolio that is exposed to companies.
In this metric, invested companies' technology mix are compared to alignment results. Within the automotive and power sector, low-carbon technologies compete with high-carbon technologies in the current market, which allows to assess how companies are split.

Limitations. Currently only available for Power and Automotive companies. Moreover, the production-plans are self-reported and may not be updated on a timely manner in data providers databases.

Sample Visuals. The first chart (left) combines current technology mix (x-axis) and alignment information (y-axis) for all invested companies in the chosen sector. Dots positioned further to the right represent companies that have a larger share of low carbon technologies. Dots positioned further up indicate that companies have more ambitious build-out plans in low carbon technologies. The size of the dots represents the weight of the company in the portfolio. The second visualization (right) shows the breakdown of each company's production capacity in each sector by technology. This is compared to the portfolio, benchmarks and this portfolio if it were to be aligned with the selected scenario. Companies that have higher exposure to a technology than the portfolio drive the exposure of the portfolio to this technology up.





Use Cases.
- Develop climate strategies such as engagement, best-in class investment, exclusion or use exercising voting rights, among others.
- Provide clarity to management and other stakeholders to what extent the portfolio is exposed to 'transition risk' and 'climate compatibility' issues.
- Reporting to external stakeholders.

1.7. Swiss Real Estate and Mortgage Module

Research Question. What are the CO_2 emissions of a building or an entire real estate or mortgage portfolio? How does it compare to peers and how aligned are the properties with the Swiss climate objectives for the real estate sector?

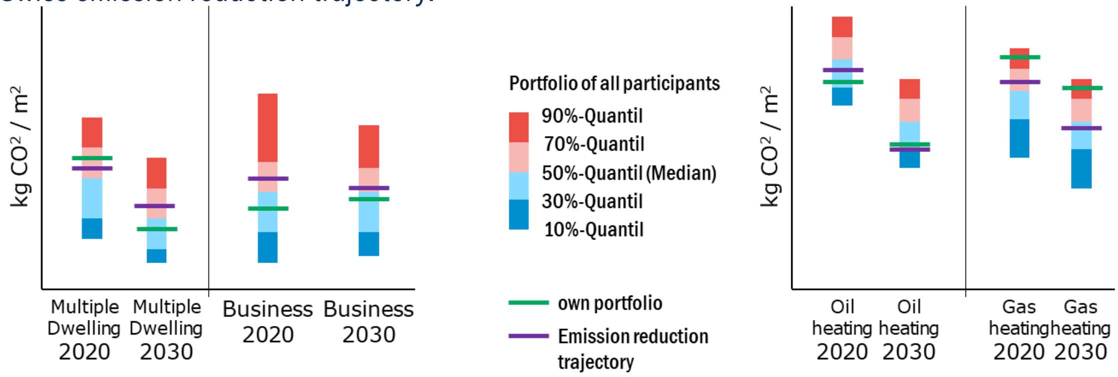
Metric and Methodology.

To calculate the direct GHG emissions (Scope 1 CO_2-emissions of a property), only a few parameters are required. The portfolio owner has to provide the location of the property in form of the EGID (Swiss Federal Building Identifier), coordinates or an address. Additionally, the heating system, construction year, energy consumption area, number of floors, refurbishment details and use type are needed. Optionally some of those additional input factors can be sourced directly from the Swiss Building and Housing Register and additional sources (e.g. Minergie, GEAK). CO_2-emissions of each building in kg/m2 per year as well as for absolute CO_2 emissions per property per year are calculated in accordance with the Swiss SIA Standard 380/1.

The emissions per property can be compared with the average emissions of the specific building type (e.g. single-family house, multiple dwelling, hotel), of peers or with the emission reduction targets for the sector until 2050.

Limitations. The automatically used input data out of the Swiss Building and Housing Register may differ in accuracy depending on the geographic region and building type. It will be improved over time and can additionally be delivered by the portfolio owner if available. Within the model, power consumption is assumed as CO_2-neutral, consistent with the Swiss-produced power-mix. Energetic aspects, the materials used for building a property as well as recycling questions cannot be considered within this model. A discussion of monetary indicators (e.g. refurbishment costs) will be provided neither.

Sample Visual. The evaluation will take place according to different criteria (e.g. type of buildings, heating systems, regions). E.g. can two dates in time be compared, whereby the owner's strategy of refurbishment can be considered for the evaluation of the alignment with the Swiss emission reduction trajectory.



Use Cases.

- Input into target-setting frameworks and climate action strategies.
- Management of refurbishment concerns and risks.
- Reporting to external stakeholders

Chapter II

Stress Test

2. Stress Test

2.1. Overview of the metrics for stress testing

The second part of the analysis is an optional stress test, which quantifies the potential financial losses to an investment portfolio under different economic transition scenarios.

Research Question. How will the value of the listed equity and corporate bonds portfolio change under different climate transition scenarios?

Metric. A discounted cash-flow model is used to estimate the development of the asset-prices under a business-as-usual scenario and a shock-scenario, that involved a late-and-sudden transition from the business-as-usual-scenario to an aligned market in 2050. Based on the difference potential losses or gains are estimated. The methodology can only be applied within the PACTA sectors.

2.2. Coverage of the Data

Asset Classes. The stress testing framework covers listed equity and corporate bonds.

Sectors. The transition risk assessment covers the PACTA sectors, which represent the key climate-relevant sectors covered in Section 1.

Data Inputs: To run the stress test, participants provide the same input file as for the climate scenario analysis. Please refer to section 1.2.2. for further information about data inputs.

Scenario Data. The underlying principle of the stress testing exercise is to apply different economic transition scenarios to an investment portfolio in order to quantify potential financial losses.

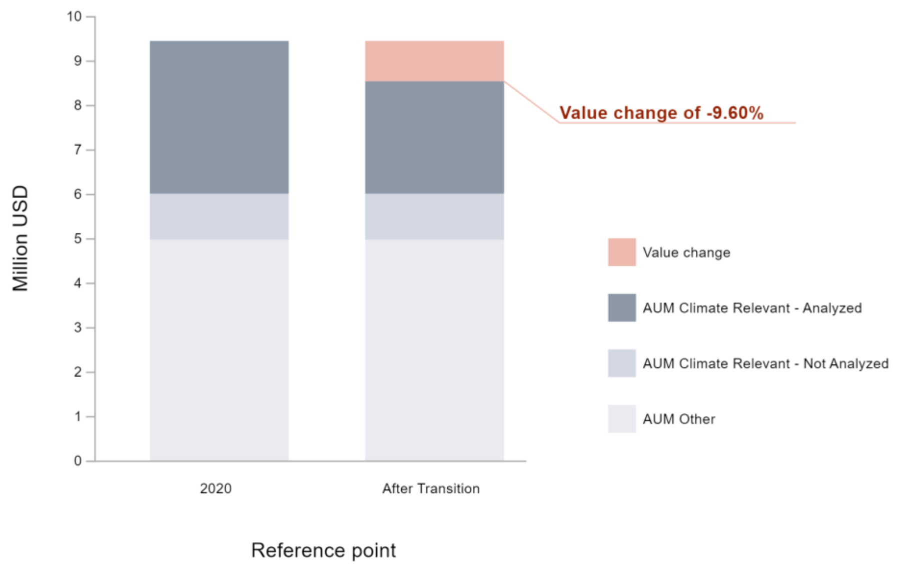
2.3. Stress Test

Research Question. How will the value of your equity and bonds portfolio change under different climate transition scenarios?

Metric and Methodology. The equity value shocks quantify potential changes in the value of the listed equity portfolio for each sector under different economic transition scenarios. The shocks are derived from existing climate stress-test scenarios co-developed by 2° Investing Initiative[3], including the Bank of England climate insurance stress-test[4] and the EIOPA climate sensitivity analysis, as well as stress-tests developed by third parties.

Limitations. The application will only be able to apply sub-sectoral, granular shocks for those sectors for which asset-level data is available

Sample Visual. The figure highlights the potential output of this analysis, showing losses for bond and equity portfolios, as well as potential 'positive' financial shocks related to low-carbon technologies (e.g. renewables). The results can be expressed in monetary units or % of portfolio losses and can be calibrated based on adjusting input assumptions, notably that of the 'start date' of the shock. In this particular visual for example, the start date is set to 2025.



Use Cases.

- Climate-related reporting under the TCFD recommendations.
- Analysis of resilience of capital & liquidity under extreme climate outcomes.
- Basis of dialogue between financial institutions and financial supervisors, both at national level, and in context of the work of the Network for Greening the Financial System (NGFS)

[3] https://2degrees-investing.org/wp-content/uploads/2019/02/Stress-test-report_V2.pdf
[4] https://www.bankofengland.co.uk/prudential-regulation/letter/2019/insurance-stress-test-2019

Chapter III

Impact Analysis

3. Impact Analysis

3.1. Overview of metrics for impact analysis

The third part of the analysis is an impact analysis, which highlights climate actions taken by financial institutions to support emissions reductions in the real economy. It provides answers to a single question, corresponding to a metric included in the results of the analysis:

Research Question. What are the climate actions taken by financial institutions to support GHG emissions reduction in the real economy?

Metric. The qualitative analysis will involve providing results of survey data collected together with the portfolio data.

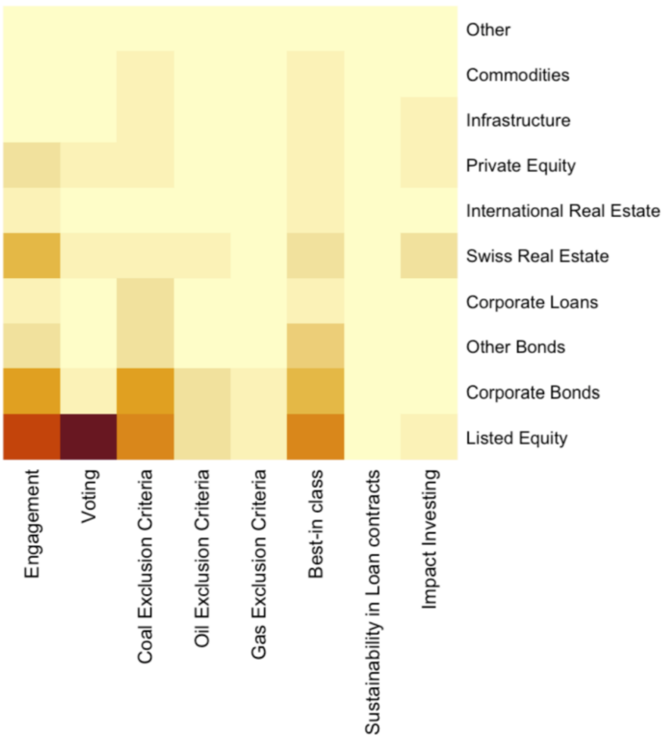
3.2. Climate action survey

Research Question. What are the climate actions taken by financial institutions to support GHG emissions reduction in and foster a climate-aligned transition of the real economy?

Metric and Methodology. The qualitative analysis will involve providing results of survey data collected together with the portfolio data. In addition, the survey helps to make the quantitative assessments more plausible and to gain a comprehensive picture of the climate-impacting activities of Swiss financial institutions. You can download the questions in a PDF format at www.transitionmonitor.com/pacta-ch-2022. Once registered, you can enter the answers in the corresponding online tool.

Limitations. The goal is, to combine the two analytical components to show the potential impact of the actions on the targeted companies quantitatively. 2DII is currently developing methodologies and metrics to allow intertemporal comparison and comparison between quantitative and qualitative information in the future. For the PACTA Climate Test 2022 in Switzerland, however, statements on this will only be possible for the aggregated analysis (meta report).

Sample Visual. The following provides a sample visual of a survey of participants as to the climate actions they have taken and compare to its peers.

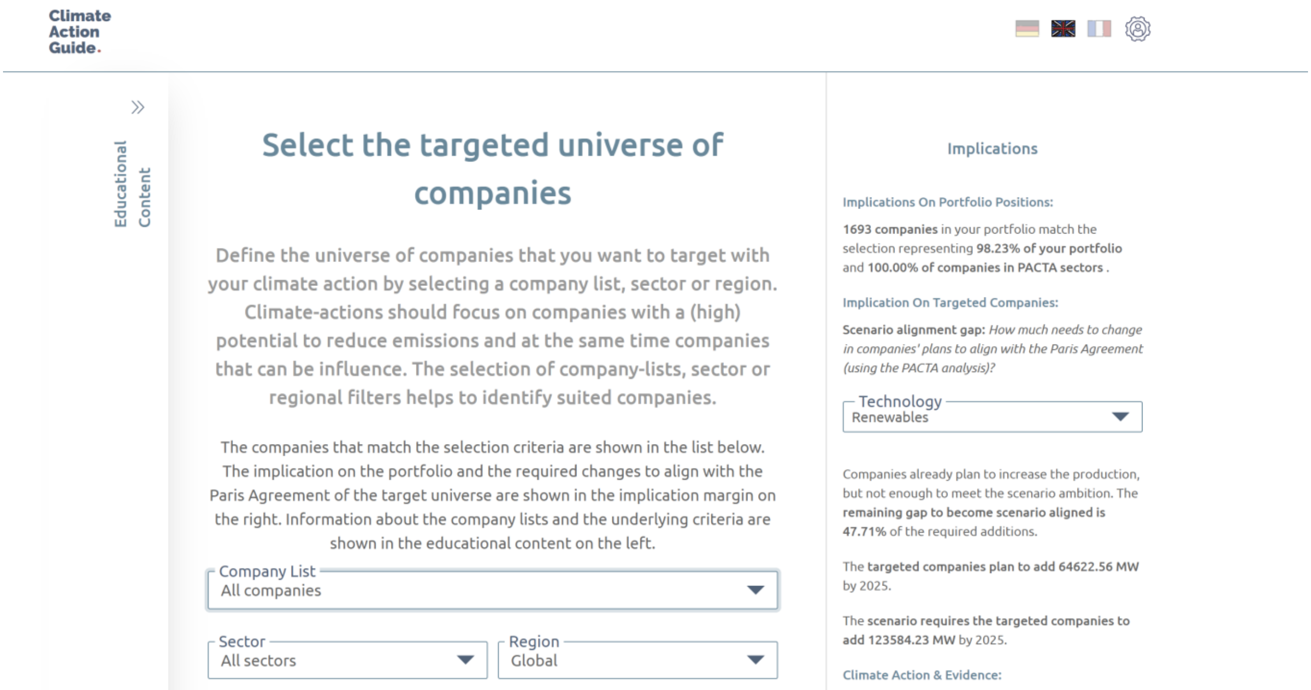


Use Cases.

- Complement quantitative analysis to create transparency on climate actions and the actions impact in the real economy on mitigation.
- Over time, monitor the efficacy of climate actions.

3.3. What actions can I take?

For financial institutions interested in actively contributing to climate change mitigation as a next step to the PACTA alignment analysis, we developed a “Climate Action Guide” available in the individual, interactive report. The Climate Action Guide is an interactive guide summarizing currently available knowledge regarding actions that financial institutions can deploy to contribute to emission reductions in the real world. It allows financial institutions to explore all actions applicable to their financial institution type and asset of interest and maps each action to “levels of evidence”, reflecting the current proofs of effectiveness associated to the action in the academic literature. A variety of additional information is also provided for each action, such as relevant initiatives or articles, name of professionals that can help in action implementation, etc.



You can learn more about our Impact-related work at this link: https://2degrees-investing.org/resource/impact-measurement-target-setting/

Chapter IV

Technical & Administrative Advice

4. Technical & Administrative Advice

This chapter provides technical and administrative advice. The first section of this chapter provides insights into the technical considerations when formatting and uploading your portfolio data as well as accessing your results. In the second section, a more detailed overview of the registration process and the Non-Disclosure Agreements (NDA) with 2DII and WP will be presented.

4.1. Technical Advice

4.1.1. Formatting Data

Formatting data for the listed equities and corporate bonds module. A sample csv file is available at the Transition Monitor Platform and on the website for the Swiss test. The file is composed of 5 columns, in this specific order:

1. "Investor.Name": Name of your institution. It should be the same for all lines of this file.
2. "Portfolio.Name": You can report as many portfolios as you wish and name them as per your convenience. The results will be grouped by portfolio (each different name disclosed in this column is characterized as one single portfolio). This means that if you report 20 different portfolios, you will receive in the Transition Monitor Platform 20 different interactive reports. You will be able to group these results on the platform.
3. "ISIN": each line of this file will correspond to one asset ISIN. ISIN stands for International Securities Identification Number and is a code that uniquely identifies a specific security issue.
4. "MarketValue": amount allocated on that specific ISIN as per the defined time stamp (e.g. 31.12.2020 for 2020Q4);
5. "Currency": currency associated with the market value.

The final file should resemble the figure below. Please do not change the columns organization or change their names. Check the formatting of the numbers, the software will read only comma/period as decimal separators. Make sure you are working in a .csv file; the software will not read .xls or .xlsx files. Before uploading your portfolio, we kindly ask for you to perform basic consistency checks like, i) total amount reported in USD and, ii) number of portfolios. Once the upload period in over, you will not be able to change the information reported.

Investor.Name: Name of your institution. It should be the same for all lines of this file. It is the highest level of aggregation of your file.

Investor.Name	Portfolio.Name	ISIN	MarketValue	Currency
Investor	Portfolio1	US0378331005	53794517	USD
Investor	Portfolio1	US00817Y1082	83155043	USD
Investor	Portfolio1	US02005N1000	100202237	USD
Investor	Portfolio1	US00507V1098	8719987	USD
Investor	Portfolio1	GB0009895292	76649702	GBp
Investor	Portfolio1	US01609W1027	21667182	USD
Investor	Portfolio1	GB0002875804	84233849	GBP
Investor	Portfolio1	US09247X1019	40768353	USD
Investor	Portfolio2	FR0000120644	51069902	EUR
Investor	Portfolio2	US1729674242	33427656	USD
Investor	Portfolio2	US15135B1017	99650442	USD
Investor	Portfolio2	US20825C1045	60731838	USD
Investor	Portfolio2	US1924461023	63405909	USD
Investor	Portfolio2	US1266501006	91174916	USD
Investor	Portfolio2	SE0007691613	21885993	SEK
Investor	Portfolio2	US2786421030	72524784	USD
Investor	Portfolio3	US30303M1027	69994609	USD
Investor	Portfolio3	IE0000669501	22106098	EUR
Investor	Portfolio3	FR0000130809	20050361	EUR
Investor	Portfolio3	US02079K1079	111886410	USD
Investor	Portfolio3	US02079K3059	18340234	USD
Investor	Portfolio3	US4370761029	45214250	USD

Currency: currency associated to the market value. PACTA will use this information to convert the MarketValue into USD.

Portfolio.Name: Name of the portfolio containing the assets disclosed. You can disclose as many portfolios as you whish in the same csv file (no need for multiple files). Bear in mind that the number of portfolios disclosed will be the number of reports received.

ISIN: each line of this file will correspond to one asset ISIN – it is the lowest level of aggregation. Make sure your ISINs are compatible with the international standard of 12 digits. You can report ISINs for all your assets, however, only listed equities, corporate bonds and funds will be considered in the analysis.

MarketValue: amount allocated on that specific ISIN as per the defined time stamp (e.g. 31.12.2020 for 2020Q4). Please report the full number (not in millions or thousands). You can report this amount in any currency – there is no need to convert the amount. PACTA will automatically convert this value in USD.

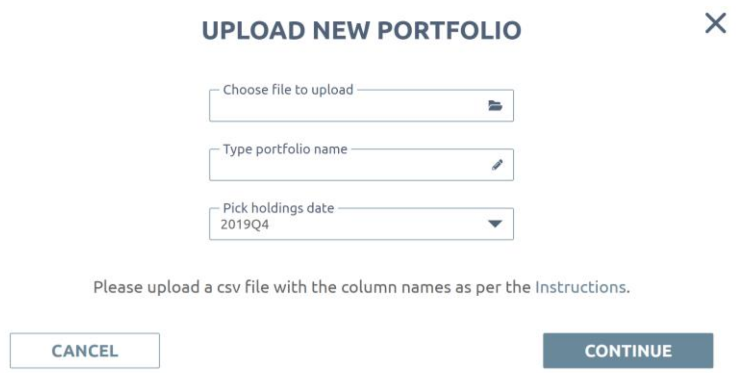
4.1.2. Data Upload – real estate and mortgage module

The portfolios of Swiss real estate and mortgage can be transferred via a link on the Transition Monitor Platform. This link will direct you automatically to a Swiss server, managed by Wüest Partner AG. Here, you can upload the data files. Otherwise, you can also send the files directly to Wüest Partner via email (pacta@wuestpartner.com).
The template for real estate and mortgage portfolios will be available on the PACTA Climate Test 2022 website. Please obey, that the template is an excel file which consists of three sheets. In the file it is explained which data must be submitted and which information is optional, to increase the robustness of the results.
We kindly ask you to adhere to the form specifications of the portfolio templates for all portfolio data records submitted. For mortgage portfolios, please use the Excel file designated accordingly.

4.1.3. Data Upload – equity and corporate bond module

After signing the NDAs, gathering, cleaning and preparing your portfolio data, the csv file for equity and corporate bonds is now ready to be uploaded into the website. To guarantee your file will be correctly inserted into the website and analyzed, follow the steps below:

1 **Insert the file for the listed equities and corporate bonds module.** On the tab 'Portfolio' of the Transition Monitor Platform, click on 'Upload New Portfolio', choose the file and type the file name. The "portfolio name" required is a method for us to differentiate in case you upload more than one file. The final interactive reports are generated according to the *Portfolio.Name* column of the csv file, not the "portfolio name" inserted here.



2 **Audit your file for the listed equities and corporate bonds module.** This is the most important step to guarantee your analysis will be performed accurately. After you uploaded your file, click on "View Portfolio Audit" to conduct the automated audit. For further information on the audit, please refer to section 4.1.4.

3 **Submit your data for the listed equities and corporate bonds module.** After the auditing, you are ready to submit your portfolio data.

5 **Answer the Survey.** To complement the quantitative analysis with qualitative insights, a survey will be conducted (see section 3.2.). You will find a link to the survey on Transition Monitor

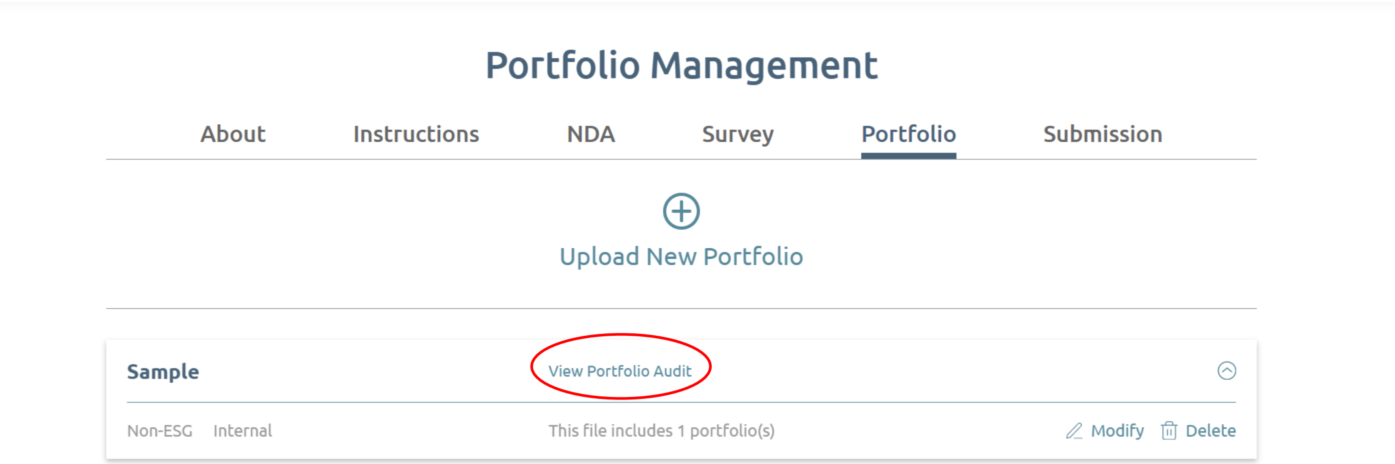
Platform. Please take your time to go through the survey carefully. After having answered all questions to the best of your knowledge, you can upload the results on the platform.

4.1.4. Audit – equity and corporate bond module

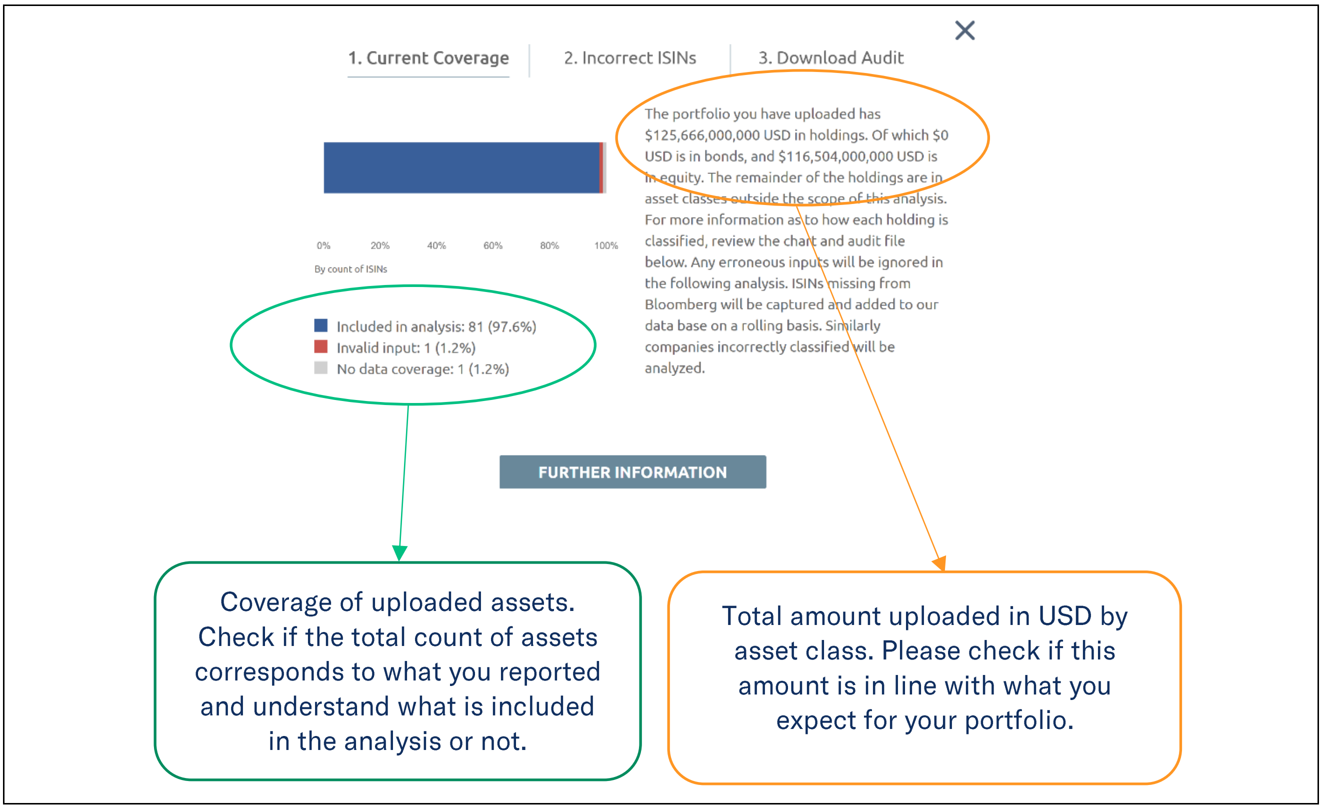
You can audit the files you are uploading in the listed equities and corporate bonds module through the so called “audit function”. In this step you will have more clarity on the coverage of the test regarding your total assets, as well as spot errors in your input such as negative numbers and invalid ISINs. This step is very important as it guarantees that your portfolio is accurate and can be included in the country’s meta-analysis.

To audit your file upload a portfolio and click “View Portfolio Audit”. A window will pop, and the function will be triggered. The process can take up to 30 minutes to be concluded, therefore we advise you not to close the browser window while it is loading. The test will show which assets were identified in your portfolio, which will be included in the analysis and the total amount uploaded in USD. You will be able to download the audit file and check each asset included or not in the analysis. We strongly advise you to check this file thoroughly and, in case you find any inconsistencies, please correct your data, re-upload the portfolio and repeat this step until you are comfortable with the status of your file, the coverage, and the correctness of total amount.

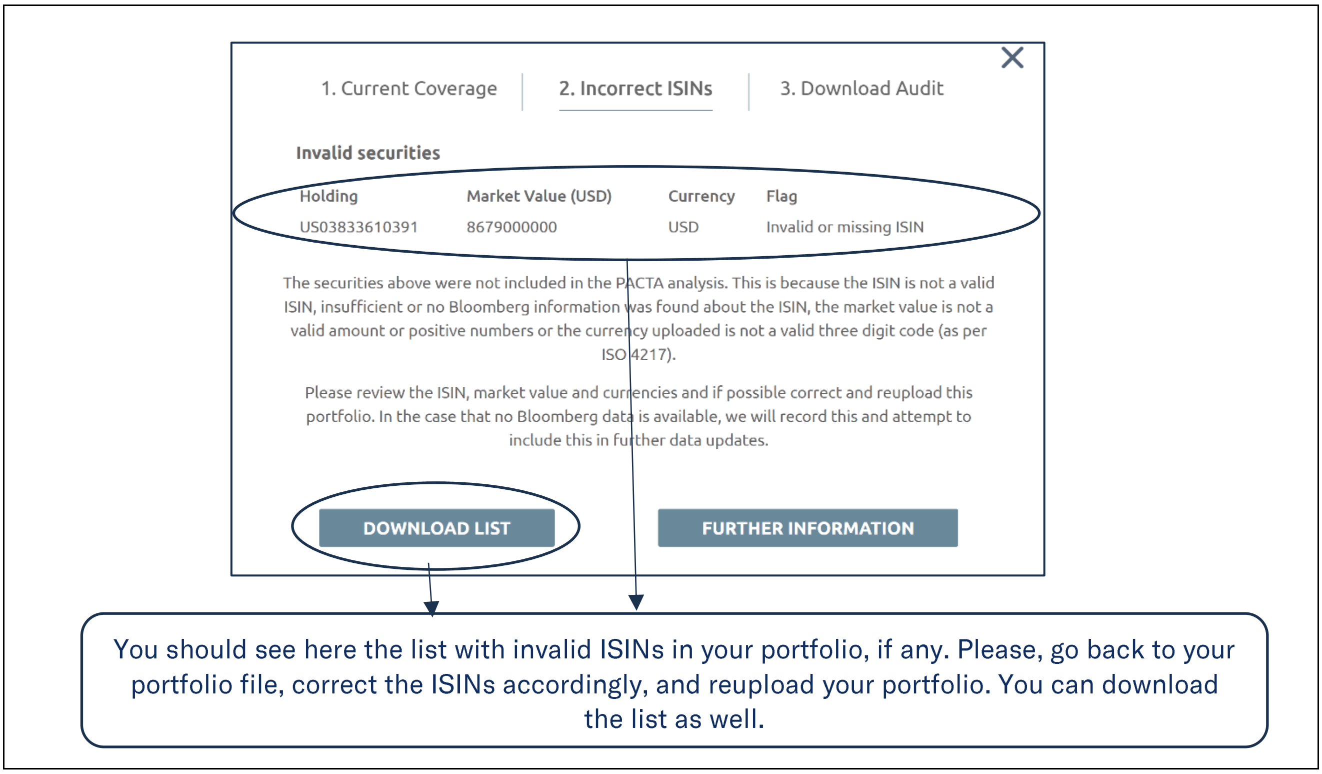
2DII is not able to perform further data alterations in your portfolio once the platform is closed and is not responsible for any inaccurate data uploaded to our platform. Your results will be calculated based on your self-reported data.



The first audit tab is called **“Current coverage”**. In this tab you will have a full picture of the assets identified by the tool and the total amount uploaded in USD by asset class. The chart is a visual representation of the assets covered. The blue area are the assets identified in our database but note that not all these assets will be part of the final analysis as assets can be identified but might not be part of the sectors in scope. The red area corresponds to invalid ISIN or, in other words, ISINs that do not follow the standard and therefore needs to be corrected. The gray area corresponds to assets identified but not covered in our database.



The next tab to be analyzed in your audit, is the “**Incorrect ISINs**” tab. In case PACTA reads through an invalid ISIN or an ISIN not found in Bloomberg, then it will be listed here. Please check the ISINs and correct it accordingly.



In the last tab, “**Download Audit**”, you can download a full csv file with an overview of your portfolio audit. Below you will find a description of columns available in this file.

- investor_name: Input by the user in the portfolio CSV
- portfolio_name: Input by the user in the portfolio CSV
- holding_id: Unique, sequential ID given to each holding in your portfolio
- isin: ISIN provided by the user in the portfolio CSV
- value_usd: market value reported by user converted to USD
- company_name: company name determined from the user provided ISIN
- asset_type: asset type determined from the user provided ISIN:
    - Equity: refers to listed equity, this asset type is read through PACTA and included in the final analysis;
    - Bonds: refers to corporate bonds, this asset type is read through PACTA and included in the final analysis;
    - Funds: refers to ISINs attributed to funds, this asset type will be looked-through and PACTA will identify the equities and corporate bonds components of the funds and attribute it to your portfolio as indirect ownership of assets. Fund’s coverage relies on Lipper data, and is subject to change across the project period;
    - Others: refers to assets identified but not covered in PACTA (sovereign bonds, derivatives, commodities, etc.);
    - Unclassifiable: assets not identified and not covered by PACTA.
- valid_input: logical TRUE or FALSE flag.
    - FALSE: the “Flag” variable (see description below) is classified as “Holding not in Bloomberg database”, or “Invalid or missing ISIN”, or “Negative or missing input value”;
    - TRUE: the “Flag” variable is classified as “Included in analysis.
- direct_holding: logical TRUE or FALSE flag:
    - TRUE: asset owned directly in your portfolio;
    - FALSE: asset owned indirectly through a fund or fund of funds.
- financial_sector: Determined PACTA (climate-relevant) sector as the primary activity of the company:
    - Oil&Gas;
    - Shipping;
    - Automotive;
    - Power;
    - Aviation;
    - Steel;
    - Coal;
    - Cement;
    - Other (sector identified but not a PACTA sector);
    - Unclassifiable (sector not identified).
- bics_sector: BICS broad level sector classification
- sectors_with_assets: "+" separated list of PACTA sectors that the company has assets in (this often
- includes more PACTA sectors than the company's primary sector/activity)
- has_ald_in_fin_sector: logical TRUE or FALSE flag:
    - TRUE: PACTA have data for assets of the company that are active in the company's primary sector (linked to financial_sector)
    - FALSE: PACTA do not have data for assets of the company that are active in the company's primary sector (linked to financial_sector)
- flag: identifies whether the asset is included in the analysis or not
    - Included in the analysis: asset could be identified and market value assigned is valid (please note that this doesn’t mean that this asset will be included in the final analysis. The asset can

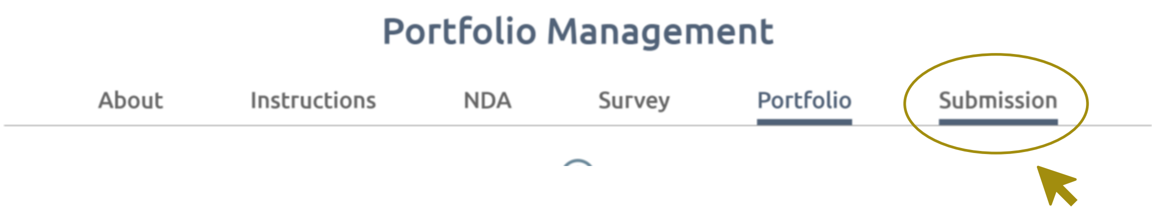
be identified but not belong to a PACTA sector – which ultimately means it will be out of the final results);

- Holding not in Bloomberg database;
- Invalid or missing ISIN: please check the ISIN and correct it accordingly;
- Negative or missing input value: please check the market to check whether it is negative or missing, correctly it accordingly.

After you went through all the audit and corrected all the inconsistencies, you can now reupload your portfolio and go through the audit process again. Retake the audit process until you are comfortable with the accuracy of the data you are uploading.

2DII relies on your data to generate your results and to complete the country analysis. The PACTA team has no means to check whether your data is accurate or to change your uploaded data once is submitted, therefore, please keep in mind that the auditing process and the reliability of your data is key for the entire PACTA Switzerland 2022 project.

Once you are comfortable with your portfolio data, you are ready to submit it. This is the last step you need to take in the project: after this step you just have to wait until your results are available.



After the uploading data phase of the project, 2DII and Wüest Partner AG starts the analysis period, where meta-results are produced, and individual interact reports for each participating institution is generated.

4.1.5. Accessing your results

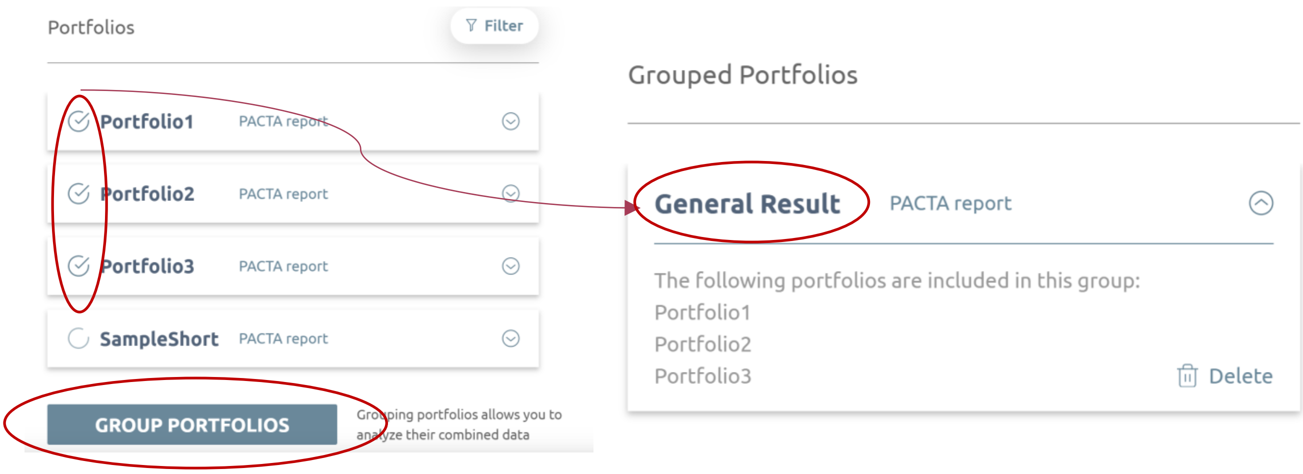
Expected in September/October 2022, you will be informed to the registered e-mail address once your results are ready. To access your results simply log-in in the Transition Monitor Platform with the same credentials you used to upload your portfolio and click in "Results".

Your results consist of a number of different documents:(. As part of your individual results, you will receive an **Interactive Report** and a static **Executive Summary**, as in the 2020 exercise. However, since then 2DII constantly tried to improve the structure of both documents. To adapt the Executive Summary as good as we can to the Swiss case, FOEN and 2DII presented the updated concept to the Swiss associations in November 2021 and received detailed feedback.2DII and FOEN strive to incorporate the many valuable contributions from the associations as good as possible.

Grouping your results

As mentioned previously, you can submit as many portfolios as you wish. You will receive one interactive report for each portfolio disclosed. If you wish to group your equity and corporate bond portfolios and see your general results you can do this by

1. Selecting the portfolios you want to group
2. Click in "Group Portfolios"
3. Give a name for this group
4. Analyze your aggregated results on the report generated under "Grouped Portfolios"



4.2. Administrative Advice

4.2.1. Registration Process

To register for participation in the Swiss climate test, please register on the Transition Monitor Platform from 01 March 2022 until 31 May 2022 with the Initiative Code **PA2022CH**. The following things should be considered:

- **A registration via Transition Monitor Platform is required, no matter whether you only want to upload equity and bond portfolio data, real estate and mortgage data, or both.** However, for the real estate and mortgage module, you will be redirected to WP after registration.
- Please note that only one person per financial institution can register. If more people want to take part in this exercise, you need to share the access internally.
- If you have already registered yourself in the 2020 exercise, you can use the same account for the new initiative.
- During the registration process, you need to indicate to which peer group (sector) you belong (insurance, pension fund, asset manager, bank). This information will be used for peer group comparisons in the Meta Report, the Sectoral Reports but also in the individual, Interactive Report.

4.2.2. Non-disclosure Agreement (NDA)

Some institutions may require a Non-disclosure Agreement (NDA) before the transfer of the data. The usual steps of signing the NDA and portfolio data preparation will be presented in the following.

Portfolio allocation data is sensitive for many financial institutions, and therefore internal policies are developed to avoid leakage and misuse of such data. 2° Investing Initiative and the designated persons for the project at Wüest Partner AG guarantee that all data provided or downloaded in the process of using the transition monitor platform is kept confidential and will not be distributed or used for purposes other than running the analysis and providing results, as well as anonymized use for meta-studies and peer comparison. 2° Investing Initiative uses a stand-alone server, i.e., no other website or information is stored on the server, which increases the security significantly. The server is set up in compliance with the security standards of the German Federal Data Protection Act (BDSG, "Bundesdatenschutzgesetz"), Tele Media Act (TMG, "Telemediengesetz"), and is built on infrastructure that is DIN ISO/IEC 27001 certified.

NDA for the data transfer of the equity and bond portfolios, as well as real estate portfolios:

To guarantee that your data is safe, a pre-signed NDA with 2dii (for equity and bond portfolio) and WP (for real estate portfolio) as well as a separate NDA just with the dedicated persons from Wüest Partner AG for the analysis of the Swiss mortgage portfolios are made available for financial institution in the Transition Monitor Platform in German and French. 2° Investing Initiative does not require participants to sign this NDA in order to perform the test. However, this may be required by internal financial institutions policies.

If your institution requires an NDA, you can download the pre-filled and -signed NDA on the Transition Monitor Platform. After gathering the signatures, you can send the document back via regular post mail or electronically via email. Please send the NDA for 2DII to pactacop@2degrees-investing.org and the NDA for WP to pacta@wuestpartner.com.