PACTA Climate Alignment Report

Bell Asset Management

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▸ **Important Information & Legal Disclaimer**

1 Introduction

1.1 Background

In September 2018, the 2° Investing Initiative (2DII) introduced the Paris Agreement Capital Transition Assessment (PACTA) tool: a free software that calculates the extent to which corporate capital expenditures and industrial assets behind a given equity, bond, or lending portfolio are aligned with various climate scenarios. The first-of-its-kind software taps into a vast climate-related financial database, which covers more than 30,000 securities, 40,000 companies, and 230,000 energy-related physical assets.

Since the tool was launched on TransitionMonitor.org, more than 3,000 individuals from more than 1,800 institutions have used it to conduct over 12,000 tests, with an average of 600+ tests per month. Overall, the total assets under management of financial institutions using the tools amounts to more than USD 106 trillion.

The tool allows users to get a granular view of the alignment of their portfolios by sector and related technologies. This information can be used to help steer investment decisions in line with climate scenarios; to inform decisions around climate target-setting; and to gain insights into engagement with clients on their respective climate actions. The tool helps users identify their exposure to transition risks associated with a disruptive shift to a low-carbon economy. The tool also helps users implement the recommendations of the Task Force on Climate-Related Financial Disclosures (TCFD), as well as comply with related regulations (Article 173 of France’s Law on Energy Transition for Green Growth, upcoming EU disclosure requirements, and more).

1.2 About this report

This report aims to answer the questions identified

Climate scenario analysis for equities and corporate bonds, based on the PACTA method developed by 2DII.

The following questions are answered:

- What proportion of the portfolio is invested in climate-related sectors?
- Do the production plans of the companies in the portfolio tally with climate scenarios which comply with the Paris Agreement?
- Which companies in this portfolio significantly influence the results?
- How does my portfolio perform compared to market benchmarks?

Results of the climate stress test which is based on the PACTA method

- To what level of risk is the asset value of the portfolio exposed in various transition scenarios?

Important information about the methodology is summarised in the final chapter. The report refers to the PACTA Knowledge Hub where you can find a detailed explanation of the PACTA method and of the underlying sources of data, as well as videos which can help you to interpret the results.

1.3 Methodology in Brief

The portfolio alignment analysis is based on forward-looking asset-based company level data in the following nine key climate relevant sectors: power, oil & gas, coal mining, automotive, shipping, aviation, cement, steel, and heavy-duty vehicles. Together, these sectors account for around 75% of global CO2-emissions. This data is mapped to financial and ownership data and compared to climate scenarios that provide low-carbon energy transition roadmaps at technology-level. The core climate scenario analysis provides answers to the following questions:

1. What share of the portfolio is currently exposed to activities in sectors affected by the transition to a low carbon economy?
2. How aligned are the investment and production plans of companies in the portfolio with different climate scenarios and the Paris Agreement?
3. 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?
4. Which companies are driving the results of the portfolio's exposure and alignment?

The following table provides an overview of key components and principles underlying the PACTA methodology.

Physical asset-based company level data	The analysis is currently based on data covering 40,000+ companies and 230,000+ energy-related physical assets from third-party data providers. This alleviates the necessity to rely on companies' self-reported data that is published in a non-standardized manner and often does not account for scope 2 and 3 emissions.
Forward-Looking	PACTA provides a forward-looking analysis of the production plans financed by a portfolio that are compared to climate scenarios.
Sector-specific approach	The outputs of the analysis are metrics and indicators at sector and technology-level that allow for a detailed evaluation of a portfolio's alignment, rather than one aggregated indicator at portfolio level. For sectors in which no low-carbon technologies exist, the sectoral decarbonization approach is used to benchmark the portfolio production against climate scenarios. The SDA was developed by the Science-based Targets Initiative.
Allocating macroeconomic goals to microeconomic actors	The PACTA analysis uses a market-share approach to allocate macroeconomic climate goals to companies: all market level trends and goals are allocated to companies based on their current market-share in the sector or technology, for low- and high-carbon technologies respectively.
Mapping company-level activities to financial instruments and portfolios	A key question addressed in this methodology is how to allocate company-level activities to financial instruments. A number of different approaches exist, two of which are used in this analysis:

Portfolio Weight approach: This approach calculates the portfolios' technology exposures based on the weighting of each position within the portfolio. This approach is used for the analysis of corporate

bonds.

Ownership Weight approach: This approach assigns a share of the companies' activities to the portfolio based on the percent of outstanding shares owned by the investor. This approach comes closer to allocating "responsibility" for the companies' activities to the financial institution. This approach is used for listed equity portfolios. |

1.4 Practical tips

Interactive graphics. Most of the charts in this report are interactive. They allow you to select specific benchmark scenarios, geographical areas, sectors and methods which you can compare. In the case you would like to review multiple charts, by hovering your pointer over the chart and clicking on the plus button that appears, you can add additional charts to the report and change these parameters as you wish.

Feedback. You can if you like provide your feedback on each chart by clicking on the text bubble which appears when hovering your point over the chart. We appreciate receiving your feedback as it will form the basis for improving this report and the PACTA method.

Method and data set. Each section of the report contains basic information about the methodology and the underlying data. You can find more detailed information at the Knowledge Hub.

Downloading Graphics and Data. By hovering over the right hand corner of each chart you are able to download the underlying data and a png version of the charts. We welcome you to use this for further analysis or rebranding of the graphics and request only that you refer to 2° Investing Initiative as the source of the data.

Sharing the report and the results. This report can be shared by clicking on the button in the bar above this report. This creates a link that allows anyone with that link to access the results and contents of this report. Please note this link can be accessed online by anyone without a log in. No underlying portfolio data is made available through this process, however the aggregated results for the portfolio are still able to be downloaded.

Grouping these Results. If you have uploaded several portfolios, you can group them together to create aggregated results. This can be done on the Results page of the platform.

2 Scope and Parameters of the Analysis

This chapter outlines the scope and coverage of this PACTA analysis by answering the following four questions:

1. What are the holdings analysed in this assessment?
2. Which asset classes are covered in the analysis?
3. Which sectors are covered in the analysis?
4. How much of the portfolio's emissions are covered?

2.1 Asset classes

This analysis focuses on asset classes with the most direct and traceable impact on the real economy, and for which public data is available. These are direct investment in economic activities by investments through listed equity and corporate bonds on the secondary market. From the total market value of this portfolio, which corresponds to 187,023,140 USD, 98 %, and 0 % correspond to equity and corporate bonds, respectively.

The table below summarizes which financial instruments are included in the analysis.

Asset Class	Portfolio value invested (M USD)	Portfolio value invested (%)	Included in the analysis	Value breakout per means of investment	
Listed Equity	182.68	98%	Yes	182.68	Direct
Unclassified	4.35	2%	No	4.35	Direct
Total	187.02	100%		187.02	

2.2 Sector Coverage

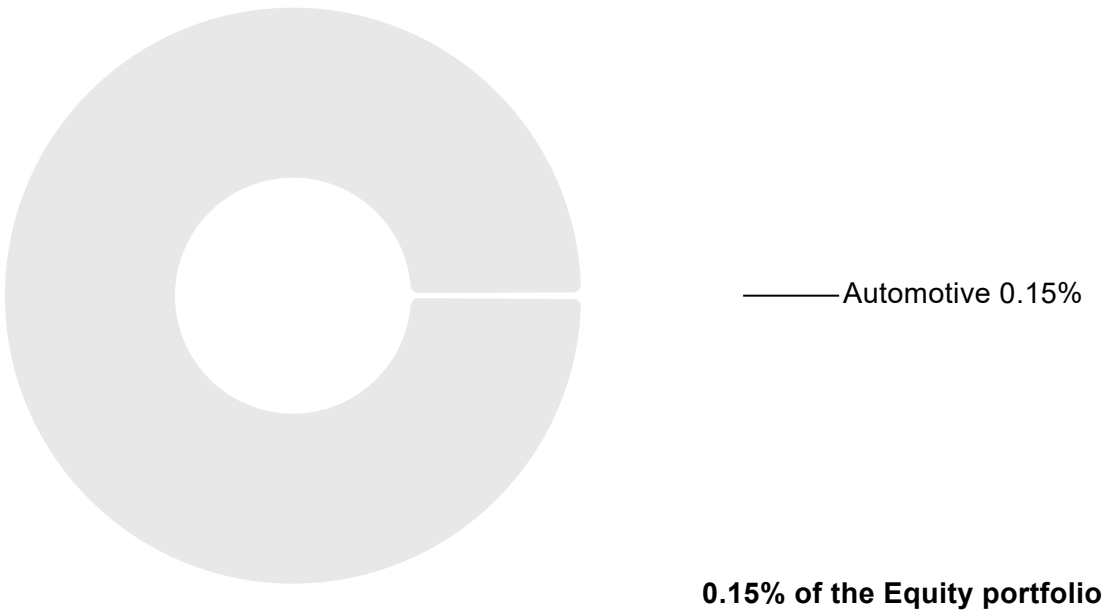
This analysis can be applied to listed equity and corporate bonds in climate-relevant sectors (automotive production including light and heavy duty vehicles, aviation, coal mining, cement production, steel production, oil and gas production, power generation and shipping).

Sectors included in the analysis fulfill the following three criteria:

1. The sectors are relevant from a climate perspective and contribute significantly to the global greenhouse gas (GHG) emissions;
2. There are scenario benchmarks available for each sector and;
3. There is sufficient data and business intelligence available.

While other sectors like agriculture, forestry, aluminium, paper and glass are also climate relevant, there is a lack of asset or scenario level data and they are therefore not included in the analysis.

Listed Equity: Financial exposure to climate relevant sectors



0.15% of the Equity portfolio covered by PACTA

This portfolio does not contain holdings relevant to this section of the report, therefore no graph could be produced. An example graph can be viewed here.

▸ Understanding the Graph

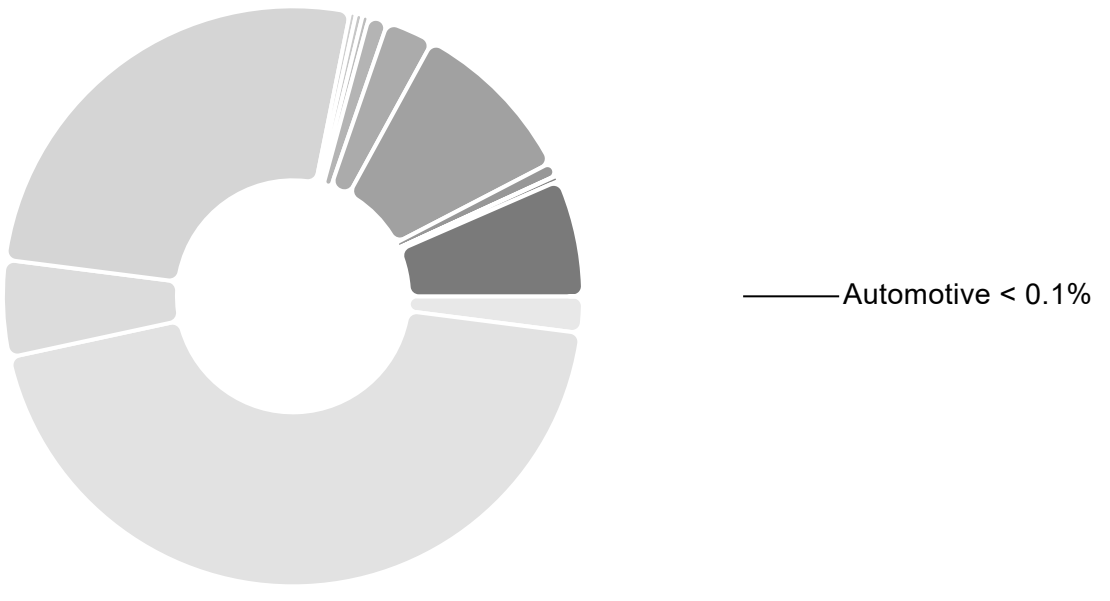
For more information on asset class and sector coverage of PACTA analysis, please visit the Knowledge Hub.

2.3 CO2 emissions

As PACTA is a granular and forward looking climate alignment tool, it does not work based on “financed emissions” due to the lack of meaningful scenarios as well as data limitations in measuring these emissions. Nevertheless, estimating current CO2 emissions associated with a portfolio can be useful to inform about the relevance of each sector in the decarbonisation of the portfolio.

The following charts indicate the contribution of each of the sectors to the total emissions assigned to the equity and bond portfolio. Comparing these graphs to the graphs from the previous section emphasizes the importance of the analysed sectors in terms of climate relevance. While making up 98% of the portfolio value, by emissions the climate relevant sectors are responsible for the following share of the portfolios estimated CO2 emissions.

Listed Equity: Emissions exposure from climate relevant sectors



< 0.1% of the Equity portfolio covered by PACTA

This portfolio does not contain holdings relevant to this section of the report, therefore no graph could be produced. An example graph can be viewed here.

▸ Understanding the Graph

3 Climate Scenario Analysis

This chapter presents the results of the PACTA climate scenario analysis of the holdings in equity and bond portfolios.

The first three sections show the exposure of the portfolio to climate relevant sectors as well as the

alignment of production plans of companies in this portfolio with different climate scenarios. To understand these results better, the next section highlights how the company level production plans are driving these results. The performance of this portfolio is then compared to the benchmark.

To better understand the methodology underlying these charts, please refer to the Knowledge Hub.

3.1 Exposure to climate relevant sectors

In this section, the exposure of the portfolio to different sectors, technologies and geographies is shown. This analysis is based on an aggregation of the weight of the companies mapped to the climate relevant sectors in the portfolio. This section addresses the following questions:

1. What is the current exposure of the portfolio to climate relevant technologies?
2. How much of the portfolio is invested in low- and high- carbon technologies?
3. How is the exposure of the portfolio regionally distributed?

3.1.1 Current exposure

Within the climate relevant sectors, each technology differs in its role in the low-carbon transition of this sector. Understanding the exposure of the portfolio on a technology level provides the basis to understand transition risks as well as potential climate investment strategies applicable to this sector. The following chart shows the exposure of the analysed portfolio data to the different technologies within each sector.

Listed Equity : Technology mix **as % of assets under management**
compared to **iShares MSCI World ETF**

Equity market: **Global Market**

► Understanding the Graph

3.1.2 Geographic exposure

The map below provides information on the regional exposure of this portfolio. It includes two basic insights: it gives a geographical dimension to the exposure per sector or technology as well as a sectoral view with regards to individual countries. This is of importance for understanding regional diversification and potential exposure to risks specific to specific countries.

► Understanding the Graph

3.2 Alignment with climate scenarios

This section assesses the forward-looking alignment of the companies in this portfolio with different climate scenarios. The results presented in this chapter provide answers to the following questions:

1. Which climate scenarios are the production trajectories of this portfolio aligned with?
2. What is the current exposure of this portfolio to technologies and how does this change over the

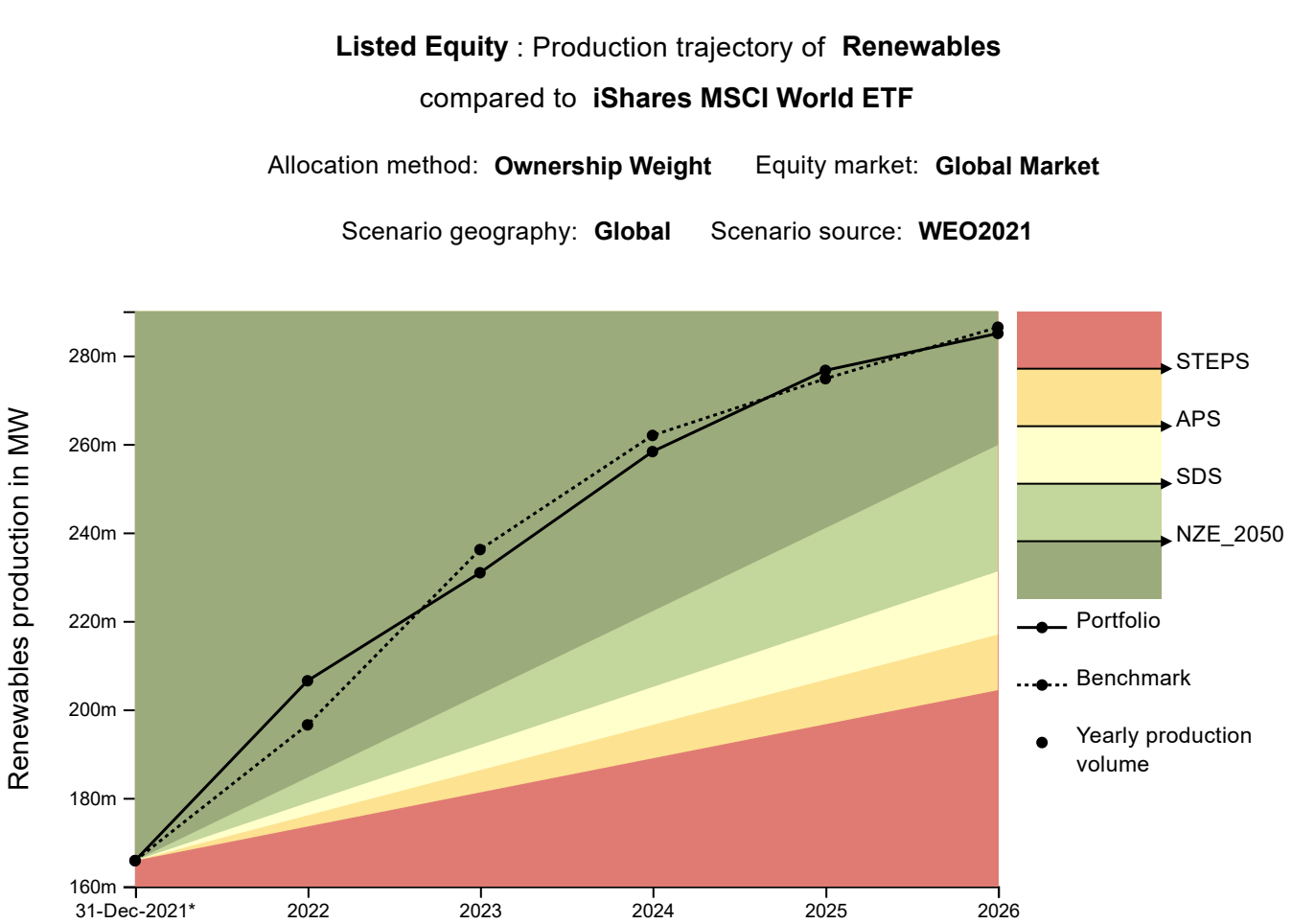
course of five years?

3. What is the relative exposure between technologies in each sector in five years?
4. How do emission intensity reductions in relevant sectors in this portfolio compare to climate scenarios?

3.2.1 Alignment of production trajectories

This section assesses the alignment of a portfolio to a range of climate transition scenarios based on the production plans of the companies in the portfolio. This analysis is only possible for sectors with sufficiently granular technology decarbonisation road maps, namely the power, coal and oil and gas, automotive (light duty vehicle and heavy-duty vehicles) sectors. From this, the future alignment (at 5 years) can be inferred, and this is also benchmarked against indices. This can be used to inform risk management, target setting and climate strategies. A section on interpreting the results in provided at the bottom.

Remember you can investigate different options here by clicking on the boldened text and changing the parameters behind these results. You can add additional charts by clicking on the Plus button that appears when you hover over the upper right of the chart.



* Start date of the analysis.

▸ Understanding the Graph

3.2.2 Future technology breakdown

For sectors with low carbon alternatives such as the power and automotive sectors, it can be useful to compare how the split between technologies looks in five years in comparison to what is expected under scenarios and with what the benchmark is doing in this regard.

This chart shows the split of each sector within the portfolio by technology, both what is currently planned and what is expected under the specified scenario. This chart does not include assumptions around changes in portfolio composition rather how the company changes in production impact the overall portfolio composition.

This portfolio does not contain holdings relevant to this section of the report, therefore no graph could be produced. An example graph can be viewed here.

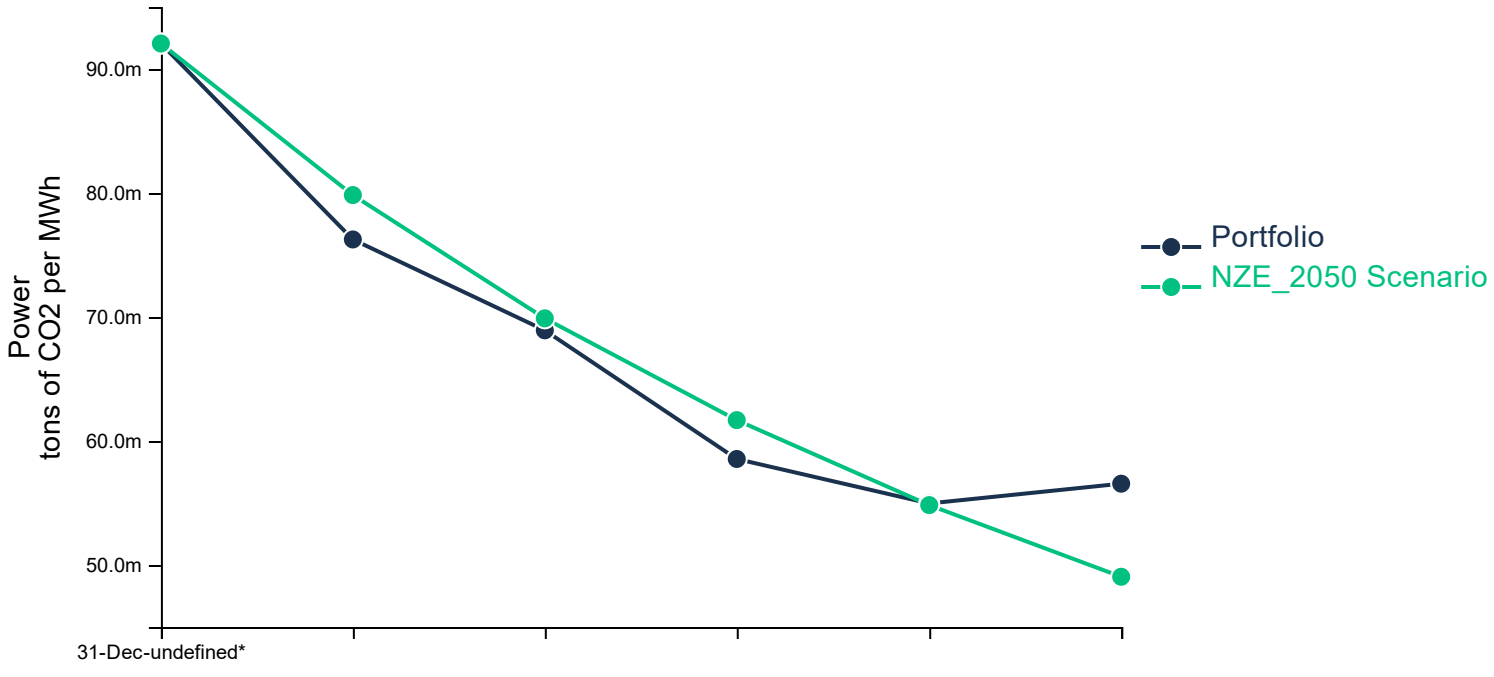
► Understanding the Graph

3.3 Alignment of emission intensities

For sectors in which there is no low carbon alternative, or even where there is, decarbonisation efforts via increasing efficiency in production and use, as well as investment in research and development in the short term, is necessary in order to bring CO2-neutral alternatives to market maturity. This analysis presents the changes in CO2 intensity in comparison with the scenario.

Listed Equity : 5-year emission intensity trend of **Power**

Allocation method: **Ownership Weight** Equity market: **Global Market**



* Start date of the analysis.

► Understanding the Graph

3.4 Company-level results

The following section is dedicated to the identification of the companies in the portfolio that have the strongest impact on the results in this report. The analysis in this section can serve as the basis for climate strategies such as engagement, best-in class investment, exclusion or use exercising voting rights, among others. The analysis of this section allows to answer the following question:

1. Which companies are driving the portfolio’s alignment with climate scenarios?
2. Which companies are the leaders and laggards with regards to shifting towards low carbon alternatives?

3.4.1 Company Low- and High- carbon split

The first chart visualizes the technology exposure and the alignment of companies in the power and

automotive sector. Within these sectors, low-carbon technologies compete with high-carbon technologies in the current market, which allows to assess how companies are split.

Companies that are positioned rather left on this graph, own more high-carbon technology, while company on the right side, own more low-carbon technologies. Furthermore, the announced build-out of low-carbon-technologies for each company is compared to the required build-out based on the selected scenario. Companies that are positioned in the lower part build-out less than companies in the upper part. The importance of each company can be measured by the size of the data point. The radius is determined by the weight of the company in the portfolio. Thus, larger dots represent companies that drive the portfolio results.

▸ Understanding the Graph

3.4.2 Company Technology Exposure

The most important power and automotive companies in the portfolio according to their weight in the portfolio are shown with their technology mix in the production. The companies' technology mix is then compared to the portfolio's future exposure and its aligned exposure.

▸ Understanding the Graph

3.5 Interpreting the results

Exposure versus Alignment? How to read these results?

The charts shown in this chapter reflect one of two concepts – exposure and alignment. It is important to consider both when assessing the scenario analysis of the portfolio. The first shows the relative importance of the sector and technology in the portfolio. Where a sector has a relatively low presence in the portfolio, the question of alignment of this sector is relatively less important than in sectors that are more heavily weighted. Similarly, the alignment metrics and graphics do not make comment to how relevant the sector is in the portfolio. Depending on the intentions behind conducting scenario analysis of this financial portfolio, influences which metric is more relevant. If you are looking to make an impact in terms of a reduction of real-world emissions, it could be relevant to focus on the companies that are most misaligned and engage them based on these results. If, however you are looking to minimise exposure to potential transition risks, then focussing on the exposure of your portfolio to different technologies or geographies may have more relevance.

Does this analysis indicate a temperature alignment of my portfolio?

This analysis shows whether the technology specific build out plans of companies in my portfolio are in line with technology roadmaps outlined in energy transition scenarios. This analysis however does not provide a single temperature warming indicator for the entire portfolio. If a portfolio is aligned with the Paris Agreement in the Power sector, but not in the automotive sector, how should one sum these up to an overall portfolio level result? While there is obviously a myriad of ways to "score" climate alignment, there are major challenges related to the interconnectedness and 'offsetting' across sectors, uncertainties surrounding data and assumptions, as well as the fact that some technologies and sectors necessary to reach certain temperature targets are not represented in this analysis. Therefore, our research concludes that currently the temperature alignment of a portfolio cannot be represented as a single indicator in a scientifically appropriate way.

4 Climate Actions and Next Steps

Upon reading this report, one can understand that PACTA is a tool that informs two objectives. First, it

informs financial institutions on defining climate actions and setting aspirations related to the alignment of their portfolio with climate goals. While it does not measure the contribution that financial institutions make in terms of real-world emissions reduction, it represents a first step on that journey. A related project (Evidence for Impact) is currently under way to help design methods and approaches to better understand the real-world impact of climate actions by financial market actors.

Second, PACTA can also be considered a mechanism to understand the evolution of transition risk. By measuring portfolio alignment, it informs on the extent to which companies are adapting their business plans to climate scenarios. Misalignment can then speak to potential higher future risk. A number of financial supervisors are currently using the PACTA model for this purpose. However, while PACTA can be an input into risk frameworks, it does not model actual financial losses.

4.1 Climate Action Guide

The information in this report serves as a starting point for better understanding the possible climate actions and strategies that can be implemented. To assist in planning the next steps, 2DII have developed a Climate Action Guide that serves to breakdown the avenues to achieving impact in the real economy.

The Climate Action Guide provides information on climate actions that can be taken and summarises the current evidence that links these climate actions with CO2 reductions. It also can be used to simulate the implementation of climate actions and what effect these would have on your portfolio. This guide can be accessed here through the website where you have received these results.

5 Methodology

This section provides details about the PACTA methodology.

5.1 PACTA Methodology

This chapter covers the core concepts of the methodology allowing a reader to understand the results being presented here whilst interpreting them correctly. Key assumptions and limitation are pointed out. This is not a detailed description of the methodology. The finer details of the methodology can be found in the knowledge hub on the transition monitor website along with answers to frequently asked questions.

5.1.1 Scenarios and Data

5.1.1.1 Asset-Based Company Level Data

The PACTA methodology measures the alignment of a financial portfolio to decarbonisation pathways set out in climate change scenarios. It does this by attributing physical assets in the real economy to the financial asset that finance them. The physical asset-based company level data used in this report is provided by Asset Resolution.

The production values of the physical assets of each company in the dataset provided by Asset Resolution, measured as an economic unit of output, is known. For example, the number of cars produced or barrels of oil for automotive and oil assets respectively. The asset’s production values are allocated to the companies owning them based on the “equity share approach”. Whereby, if company A owns x% of Asset 1, company A is attributed x% of Asset 1’s production. When ownership data is missing, the remaining shares are distributed equally to the companies to which no data is known (for example, if company A owns 50%, company B owns an unknown %, and company C owns an unknown %, then company B and company C both get 25%). In the case where ownership data only exists for one company then 100% ownership is assumed.

The production values are then aggregated up the corporate structure chain following the “equity ownership approach”. (e.g. subsidiary > parent company > group). The equity ownership approach allocates production as follows: Assuming Group α is the parent of Company A. Group α is attributed Company A’s production multiplied by the ratio of Group α’s owned shares in Company A to Company A’s total outstanding shares (or 1, if Company A has no shares). If Company A is a joint venture then the same principle is applied to each parent entity. This modelling choice was chosen to reflect methodologies commonly used in the financial industry. The PACTA methodology is open to other modelling choices.

5.1.1.2 Scenarios

The PACTA Methodology is agnostic to any climate scenario that lays out targets in production capacity at the technology level or, for the relevant sectors, emission-intensity units. Scenarios typically differ as follows:

- They lay out decarbonization paths that occur at different speeds (rapid ramp-up or long-term adjustment)
- They make different assumptions around innovation and thus around technologies’ availability, scalability, and cost
- As a result, they favor or rule out different technologies (e.g. phase-out of nuclear in the Energy Revolution scenario (GPER) (Greenpeace), prominent use of carbon capture and storage (CCS) in the IEA’s Beyond 2 degrees scenario (B2DS) scenario)
- They implement decarbonization paths of different levels of ambition
- They offer varying levels of granularity, e.g. they are expressed at different times and geographic scales

Given that the targets laid out in climate scenarios can vary by region depending the sector’s value-chain and geographic constraints (e.g., power distribution), alignment is measured at the geographical level in which the sector tends to operate. For example, for the power sector, markets tend to be regional or national, and as such alignment should be measured at that level. However, the oil, gas, coal and automotive sectors operate in a global market and in such a case a global scenario target is used.

A few different sets of scenarios are used in this report, responding to requests for a more ambitious 1.5°C scenario.

The World Energy Outlook scenarios from 2019 and 2020 are included which include a Current Policy Scenario (2019 only), Stated Policy Scenario, and Sustainable Development Scenario. Scenarios developed in the Prospective Outlook on Long-term Energy System (POLES) model by the Joint Research Centre (JRC) have been included in the analysis. Three scenarios have been selected from this model and include a 1.5°, 2° and a reference scenario.

Source	Scenario	Description
	Current Policies Scenario	Government policies that had been enacted or adopted by mid-2019 continue unchanged.
WEO	Stated Policies Scenario	Considers the policies and implementing measures affecting energy markets that had been adopted as of mid-2019, together with relevant policy proposals, even though specific measures needed to put them into effect have yet to be fully developed. It assumes only cautious implementation of current commitments and plans by reviewing the many institutional, political and economic obstacles which exist, as well as, in some cases, the lack of detail in announced intentions and about how they will be implemented.
	Sustainable Development Scenario	An integrated scenario specifying a pathway aiming at: ensuring universal access to affordable, reliable, sustainable and modern energy services by 2030 (SDG 7); substantially reducing air pollution (SDG 3.9); and taking effective action to combat climate change (SDG 13).
	Reference Scenario	Corresponds to a world where currently existing policies for GHG emissions, renewables deployment and energy efficiency are carried out and where no additional policies are implemented compared to what had been legislated as of June 2019. It covers worldwide policies.
POLES	1.5°C Scenario	Assumes a global GHG trajectory consistent with a likely chance of meeting the long-term goal of a temperature rise over pre-industrial times below 1.5°C for 2100. It was designed with a probability not to exceed their temperature change at the end of the century of 66%.
	2°C Scenario	Assumes a global GHG trajectory consistent with a likely chance of meeting the long-term goal of a temperature rise over pre-industrial times below 2°C for 2100. It was designed with a probability not to exceed their temperature change at the end of the century of 75%.

5.1.1.3 Time horizons

Results given in this report are shown for the present and up to 5 years in the future. This is based on the capital expenditure (CAPEX) plans reported by the company's present in the asset-based company data. No reliable estimate beyond 5 years can be made due to a lack of adequate CAPEX forecasts beyond 5 years.

5.1.2 Accounting Principles

5.1.2.1 Distributing macro carbon budgets to micro-economic actors

Various approaches could be considered when it comes to allocating macro decarbonization effots to micro-economic actors.

A market share approach has been adopted in PACTA. This approach uses a 'market share' allocation rule, wherein all sector-level production and capacity trends are proportionally distributed across companies such that by contracting/expanding their production in each technology at the same rate, they retain their initial market share. Put differently, each actor in the sector need to decarbonize as what their current market share would dictate.

Other options include: - A least-cost approach, which considers the economic efficiency of an asset. Here the actor that is most economically efficient in decarbonizing is expected to do the bulk of the decarbonization needed. - A historic responsibility approach, which weights the decarbonisation efforts

towards those that have previously contributed the most to climate change. - A bottom-up approach, which would include economic efficiency considerations, political factors (e.g. regulatory frameworks), adaptive capacity and corporate agility (none of which are considered here)

5.1.2.2 Allocating economic assets to financial activity

Another important element is how to allocate the economic assets to the financial asset and then the overall portfolio. Here too there are various approaches that could be considered. This analysis reflects two of these.

1. “Ownership approach” (or balance sheet approach). This approach allocates the economic assets to financial assets as a function of the ownership share that the financial asset represents. Thus, if one owns 1 share of a coal-mining company and there are 100 free-floating shares on the market, one would get 1% of the production of the mining company allocated to the portfolio. This ownership approach can only be applied for equity stakes – it is not transposable to debt.

2. “Portfolio-weight approach”. This approach allocates economic assets based on the weight of the financial asset in a specific sector in the portfolio. Thus, if a bond of Power Company A represents 10% of your total Power-bond portfolio, you are allocated 10% of Company A’s production. In debt values, it represents a proxy for capital allocation decisions. For equity, this logic does not apply.

5.1.3 Limitations

Some of the limitations to the model are outlined.

As is a central caveat of modern portfolio theory, in PACTA’s attempt at adapting the modelling of financial markets to include feedback loops with climate risks, a truly diversified market portfolio cannot be accurately observed nor replicated. Not all relevant assets can be satisfactorily mapped and their main variables measured. While a limitation, the modelling work provided here still arguably goes some way in offering a clearer view of climate-related risk as channelled from economic assets to financial institutions, its first purpose and what drove its design is climate alignment rather than risk mitigation.

Companies’ relative extents of climate alignment are approximated using production capacity-based figures, and do not encapsulate R&D investment, historical record, lobbying expenditures, etc. Particularly R&D investments would be an important element to look at. Perhaps a company does not yet have very green capital expenditure plans, but it may invest heavily in R&D.

Another limitation in the approach resides in the necessary choice of climate scenarios: while there exists an endless number of combinations of technology-specific pathways, the model relies on a small number of scenarios and accepts their uncertainty and margins of error.

Beyond the model’s reliance on the quality of climate-scenario data, it also relies on that of the asset-based company level data, financial data and on that of the financial data fed into it. While efforts are made to check the quality of the company level and financial data, these subsets aim to reflect the real economy which are difficult to capture correctly.

Last, while PACTA alignment outputs can be used as input into existing risk models to calculate sectoral or company-specific financial risks, their aim is not to comprehensively map all sources of financial risk (e.g. pipelines, distribution networks, upstream supply chain, etc. are not covered), the PACTA alignment approach does not itself model potential financial losses. However, section 4 shows an add-on module that is complementary to the PACTA methodology approach. Whereas PACTA aims to measure portfolio alignment with climate scenarios, the climate transition risk stress test developed by 2DII provides potential financial losses to the portfolio based on sudden policy action that forces companies to adjust their production plans (thereby impacting their future profits) so that they comply with a target scenario further in the future.. Those results can be augmented with inputs given by PACTA for increased granularity. As mentioned before, this is not part of the PACTA approach, but has to be viewed as a separate add on.