

Frequently Asked Questions

S&P PACT™ Indices (S&P Paris-Aligned & Climate Transition Indices)

COMPANY BACKGROUND

- 1. Who is S&P Dow Jones Indices?** S&P Dow Jones Indices (S&P DJI) is the largest global resource for essential index-based concepts, data, and research, and is home to iconic financial market indicators, such as the [S&P 500®](#) and the [Dow Jones Industrial Average®](#). More assets are invested in products based on our indices than products based on indices from any other provider in the world. Since Charles Dow invented the first index in 1884, S&P DJI has been innovating and developing indices across the spectrum of asset classes, helping to define the way investors measure and trade the markets.
- 2. Who is S&P Global Trucost?** S&P Global Trucost is a leader in carbon and environmental data and risk analysis and assesses risks relating to climate change, natural resource constraints, and broader environmental, social, and governance (ESG) factors.

S&P DJI and S&P Global Trucost have a long history of collaboration since launching the first S&P Carbon Efficient Index Series in 2009. Trucost was acquired by S&P Global in 2016.

S&P PARIS-ALIGNED & CLIMATE TRANSITION INDICES

- 3. What are the S&P PACT Indices?** The indices are designed to measure the performance of eligible equity securities from an underlying benchmark index, selected and weighted to be collectively compatible with a 1.5°C global warming climate scenario and to meet several other climate-themed objectives at the index level, as of each rebalance. PA and CT stand for the S&P Paris-Aligned Climate Indices and S&P Climate Transition Indices, respectively.
- 4. Why were the S&P PACT Indices created?** The indices aim to incorporate: (a) factors that seek to manage transition risk, physical risk, and climate change opportunities, as proposed by the Financial Stability Board's Task Force on Climate-related Financial Disclosure (TCFD);¹ (b) the minimum standards for the EU Climate Transition Benchmarks (CTBs) and EU Paris-aligned Benchmarks (PABs), as proposed by the Technical Expert Group on Sustainable Finance (TEG) in its final report² of September 2019; and (c) forward-looking scenario analysis. The final delegated acts were published on Dec. 23, 2020.
- 5. How do these indices align with the goal of achieving net zero emissions by 2050?** The Intergovernmental Panel on Climate Change (IPCC) defines net zero emissions as achieved when anthropogenic emissions of greenhouse gases to the atmosphere are balanced by anthropogenic removals over a specified period. The S&P PACT Indices follow a 7% year-on-year decarbonization trajectory, which, according to the EU Technical Expert Group on

¹ TCFD. https://ec.europa.eu/info/publications/sustainable-finance-technical-expert-group_en. See Questions 15 and 16 for more information.

² EU Technical Expert Group on Sustainable Finance. (2019). *TEG Final Report on Climate Benchmarks and Benchmarks' ESG Disclosures*, available at https://ec.europa.eu/info/files/190930-sustainable-finance-teg-final-report-climate-benchmarks-and-disclosures_en.

Sustainable Finance (EU TEG), is required to meet the IPCC "1.5°C with no or limited overshoot" emissions scenario. This scenario should meet net zero emissions around 2050. As such, this index series is labeled "Net Zero 2050".

6. What ESG datasets are used in the S&P PACT Indices Methodology? The indices use several climate, ESG, and business involvement datasets, as shown in Exhibit 1.

Exhibit 1: Datasets and Data Sources		
CATEGORY	DATASET/MODEL	DATA SOURCE
Index Eligibility	S&P Global Trucost Sector Revenues Dataset	S&P Global Trucost
	Business Involvement Dataset	Sustainalytics
	UNGC Scores	Sustainalytics
Constituent Weighting	Transition Pathway Model	S&P Global Trucost
	Physical Risk Scores	S&P Global Trucost
	GHG Emissions and Emissions Disclosure Dataset	S&P Global Trucost
	Green-to-Brown Share Dataset	S&P Global Trucost
	Fossil Fuel Reserve Dataset	S&P Global Trucost
	Power Generation Dataset	S&P Global Trucost
	S&P Global Trucost Sector Revenues Dataset	S&P Global Trucost
	Science-Based Targets Dataset	Science Based Targets initiative (SBTi)
	S&P DJI ESG Scores	S&P DJI

Source: S&P Dow Jones Indices LLC, S&P Global Trucost, Sustainalytics, SBTi. Table is provided for illustrative purposes.

7. Why are these datasets used in the S&P PACT Indices Methodology? One of the purposes of the index methodology is to minimize the deviation in constituent index weights from their benchmark weights, while satisfying multiple constraints. The datasets help achieve that purpose and help manage the constraints, which are informed by the requirements of the TEG's final report and the recommendations of the TCFD. The constraints are defined using the datasets from the data sources noted in Exhibit 1.

For more information on how the indices are calculated, see the index methodology, found at <https://www.spglobal.com/spdji/en/documents/methodologies/methodology-sp-paris-aligned-climate-transition-pact-indices.pdf>.

8. What indices are in the series? As of July 29, 2021, the indices available in this series are:

- [S&P Developed Ex-Korea LargeMidCap Net Zero 2050 Paris-Aligned ESG Index](#)
- [S&P 500 Net Zero 2050 Paris-Aligned ESG Index](#)
- [S&P 500 Net Zero 2050 Climate Transition ESG Index](#)
- [S&P Europe LargeMidCap Net Zero 2050 Paris-Aligned ESG Index](#)
- [S&P Eurozone LargeMidCap Net Zero 2050 Paris-Aligned ESG Index](#)
- [S&P Developed Ex-Korea LargeMidCap Net Zero 2050 Climate Transition ESG Index](#)
- [S&P Europe LargeMidCap Net Zero 2050 Climate Transition ESG Index](#)
- [S&P 500 Net Zero 2050 Paris-Aligned Sustainability Screened Index](#)
- [S&P Eurozone LargeMidCap Net Zero 2050 Climate Transition ESG Index](#)

- 9. How are ESG controversies dealt with in the S&P PACT Indices Methodology?** S&P Global's Media and Stakeholder Analysis (MSA) monitors ESG controversies, which include a range of issues, such as economic crime and corruption, fraud, illegal commercial practices, human rights issues, labor disputes, workplace safety, catastrophic accidents, and environmental disasters.

The Index Committee reviews constituents that have been flagged by S&P Global MSA to evaluate the potential impact of controversial company activities on the composition of the indices. In the event that the Index Committee decides to remove a company, that company would not be eligible for re-entry into the indices for one full calendar year, beginning with the subsequent rebalancing.³

- 10. When are the indices rebalanced?** The indices are rebalanced quarterly, effective after the close of the last business day of March, June, September, and December. The rebalancing reference date is the last trading day of the prior month.

As part of the rebalancing process, constituent stock weights are updated. Weights calculated as a result of the reference date data are implemented in the indices, using closing prices seven business days prior to the rebalancing effective date.

- 11. How do the indices perform relative to their benchmarks?** Index performance statistics are presented for all S&P DJI Indices on their index factsheets, found at www.spglobal.com/spdji.

- 12. If I subscribe to the S&P PACT Indices, will I also receive the underlying ESG and climate datasets used in the S&P PACT Indices Methodology?** No. Access to these datasets is available through direct licensing with the corresponding data source. Access to the S&P DJI Environmental Scores requires a separate data license. For further information, please contact your S&P DJI account representative, or visit www.spglobal.com/spdji/en/contact-us.

Access to other datasets used in the methodology require direct licensing with each vendor.

THE EU TEG & TCFD

- 13. What is the TEG, and what is its mandate?** The European Commission established a Technical Expert Group on Sustainable Finance (TEG) to assist it in developing elements of green finance policy. The TEG commenced its work in July 2018 and is composed of 35 members from civil society, academia, business, and the finance sector, as well as additional members and observers from the EU and international public bodies.⁴

- 14. What is the TEG's final report?** In September 2019, the TEG published the final version of its report on benchmarks. The final report sets out the TEG's proposals for minimum standards of criteria for selecting underlying assets, methods of weighting, and determination of a decarbonization trajectory for two new classifications of benchmarks: the EU Climate Transition Benchmarks (CTBs) and EU Paris-aligned Benchmarks (PABs). The final report serves as the

³ For more information on the approach used in S&P Global's MSA, visit: https://portal.csa.spglobal.com/survey/documents/MSA_Methodology_Guidebook.pdf.

⁴ https://ec.europa.eu/info/publications/sustainable-finance-technical-expert-group_en

basis for the drafting of delegated acts by the European Commission, as set out under Regulation (EU) 2019/2089.

15. What are the objectives of the EU CTBs and EU PABs? One of the main objectives that the EU hopes to achieve with the creation of these new benchmark classifications is to help reorient capital flows to more sustainable investments. In order to do that, the EU has laid down minimum standards for EU CTBs and EU PABs that are designed to:

- Create a common framework of requirements that promotes consistency, leading to greater comparability between benchmarks;
- Clearly label these benchmarks, helping investors recognize them and understand their objectives more easily;
- Generate greater disclosure of the methodology, which will help asset managers select a benchmark that is appropriate for their investment strategy; and
- Reduce the risk of greenwashing.

16. How do the S&P PACT Indices align with the proposals of the TEG's final report, and what other factors do they incorporate? Exhibit 2 shows the requirements outlined in the TEG's final report for EU CTBs and EU PABs, and how these have been considered in the S&P PACT Indices. Exhibit 3 illustrates the factors that are beyond the requirements of the TEG's final report and that have been incorporated to capture a more comprehensive climate risk index.

The main areas where the indices go beyond the objectives required by the TEG-proposed regulation are:

- The inclusion of physical risk mitigation to align with the TCFD model of financially material climate risks and opportunities;
- The use of transition pathway methodologies, as endorsed by the Science Based Targets initiative, to weight constituents according to their level of alignment to a 1.5°C scenario;
- Ensuring stranded asset risk is minimized by reducing the fossil fuel reserve footprint of the S&P PA Indices;
- Minimizing active share as the objective function allows the index to meet its objectives in the most efficient manner; and
- The inclusion of Scope 3 emissions data for all industries from inception.

S&P PACT Indices

Exhibit 2: S&P PACT Indices' Alignment with the Minimum Standards from the TEG's Final Report				
CRITERIA	MINIMUM STANDARDS		S&P PACT INDICES	
	EU CTBS	EU PABs	S&P CT INDEX SERIES	S&P PA INDEX SERIES
Minimum Scopes 1, 2, and 3 Carbon Intensity Reduction Compared with Benchmark	-30%	-50%	-30%	-50%
Scope 3 Phase-in Period	Up to four years		Scope 3 emissions, both upstream and downstream, are incorporated from inception	
Baseline Exclusions	Controversial weapons; Societal norms violators.		Controversial weapons; Societal norms violators (defined as Tobacco & Low UNGC Score). S&P Global's MSA is used to monitor public controversies.	
Activity Exclusions	-	<ul style="list-style-type: none"> - Coal (1%+ revenues) - Oil (10%+ revenues) - Natural gas (50%+ revenues) - Electricity producers carbon intensity of lifecycle GHG emissions higher than 100 gCO₂e/kWh (50%+ revenues) 	-	<ul style="list-style-type: none"> - Coal (1%+ revenues) - Oil (10%+ revenues) - Natural gas (50%+ revenues) - Electricity producers with carbon intensity of lifecycle GHG emissions higher than 100 gCO₂e/kWh (50%+ revenues) - Small arms, military contracting, oil sands, shale energy, gambling, and alcohol <p>Activity exclusions are identified using S&P Global Trucost sector data.</p>
Year-on-Year Self-Decarbonization of the Benchmark	At least 7% on average per year in line with or beyond the decarbonization trajectory from the IPCC's 1.5°C scenario (with no or limited overshoot).		<p>At least 7% on average per year in line with or beyond the decarbonization trajectory from the IPCC's 1.5°C scenario (with no or limited overshoot).</p> <p>Note: As the carbon intensity is assessed using average weight over the period, a 5% buffer is used in the indices to help increase confidence that the indices can meet the decarbonization trajectory of at least 7% per year. This aims to maintain a weighted average carbon intensity below the required levels, using average weights over the period. An index optimization constraint is used to ensure this.</p>	
Minimum Green Share/Brown Share Ratio Compared with Investable Universe (Voluntary)	At least equivalent	Significantly larger (factor 4)	At least equivalent	Significantly larger (factor 4)
Exposure Constraints	Minimum exposure to sectors highly exposed to climate change issues is at least equal to equity market benchmark value.		<p>At least the same exposure to high climate change impact sectors exposures as in benchmark, using sector revenues data.</p> <p>Note: To assist with comparability, S&P Global Trucost sector data has been mapped to NACE sectors. An index optimization constraint is used to ensure this, meaning the indices have no less exposure to high climate impact revenues than the underlying index at rebalance.</p>	

Source: S&P Dow Jones Indices LLC, TEG. Data as of August 2021. Table is provided for illustrative purposes.

S&P PACT Indices

Exhibit 2: S&P PACT Indices' Alignment with the Minimum Standards from the TEG's Final Report (cont.)				
CRITERIA	MINIMUM STANDARDS		S&P PACT INDICES	
	EU CTBS	EU PABs	S&P CT INDEX SERIES	S&P PA INDEX SERIES
Corporate Target Setting	Weight increase shall be considered for companies that set evidence-based targets under strict conditions to avoid greenwashing (see Article 9 in section 5.12 regarding conditions)		<p>Weight increase shall be considered for companies that set evidence-based targets under strict conditions to avoid greenwashing (see Article 9 in section 5.12 regarding conditions).</p> <p>S&P Global Trucost data on science-based targets and carbon data are used to assess historical emissions reductions and flag any disclosure concerns. To protect against greenwashing, the indices define a company as qualifying for this index weight increase if:</p> <ul style="list-style-type: none"> - A company's emission target is disclosed and aligned with 1.5°C. - A company's emissions target is sufficiently disclosed and includes Scopes 1, 2, and 3 emissions. - A company's emissions disclosure must demonstrate 7% annualized decarbonization over the past three years. - A company's decarbonization target must represent an annualized decarbonization rate of 7% when accounting for Scopes 1, 2, and 3 (upstream and downstream) emissions, assuming the company's current composition of emissions. <p>Companies that meet the above rules are overweighted at rebalance, as a group. The sum of all qualifying companies will be at least 20% higher in the indices than benchmark.</p> <p>Note: An index optimization constraint is used to ensure this.</p>	
Disqualification from Label if Two Consecutive Years of Misalignments with Trajectory	Immediate		-	-

Source: S&P Dow Jones Indices LLC, TEG. Data as of August 2021. Table is provided for illustrative purposes.

Exhibit 3: Additional Climate Factors Considered by the S&P PACT Indices

FACTOR	S&P CT INDEX SERIES	S&P PA INDEX SERIES	NOTES/COMMENTS
Physical Risk	Index-level physical risk score no more than the benchmark and a dynamic capping of the highest physical risk companies relative to the benchmark	At least a 10% reduction of physical risk score from the benchmark and a dynamic capping of highest risk companies relative to the benchmark	S&P Global Trucost's physical risk dataset is used. Physical risk reduction is added to the index to align with the TCFD's model to identify financially material risks.
Transition Pathway Model	Transition pathway data is used in constituent weighting to overweight companies that are on a 1.5°C-compatible pathway.		S&P Global Trucost's transition pathway dataset is used. The transition pathway model allows for a forward-looking view on a company's 1.5°C scenario alignment. This aims to help the index decarbonize over time, by selecting companies with the potential to decarbonize in the future, rather than only constraining the carbon intensity over time. The transition pathway model and 7% year-on-year constraint are potentially complementary approaches.
Fossil Fuel Reserve Reduction	Fossil fuel reserve exposure does not exceed that of the benchmark	Reduce fossil fuel reserve exposure by at least 80% relative to the benchmark	S&P Global Trucost's fossil fuel reserve emissions data is used. Stranded assets are a risk to investors. For this reason, reducing the exposure to companies with stranded assets, via a fossil fuel reserve reduction, is a way of mitigating this risk.
S&P DJI ESG Score	Index-level S&P DJI ESG Score	Index-level S&P DJI ESG Score to be at least 20% of the potential increase equivalent to benchmark	The S&P DJI ESG Score, supported by S&P Global's Corporate Sustainability Assessment (CSA), is also used in the index methodology. Companies with strong S&P DJI ESG Scores may have an edge when it comes to sustainability performance. For this reason, adding S&P DJI ESG Score data into the index may contribute further to the index objectives.

Source: S&P Dow Jones Indices LLC, TEG. Table is provided for illustrative purposes.

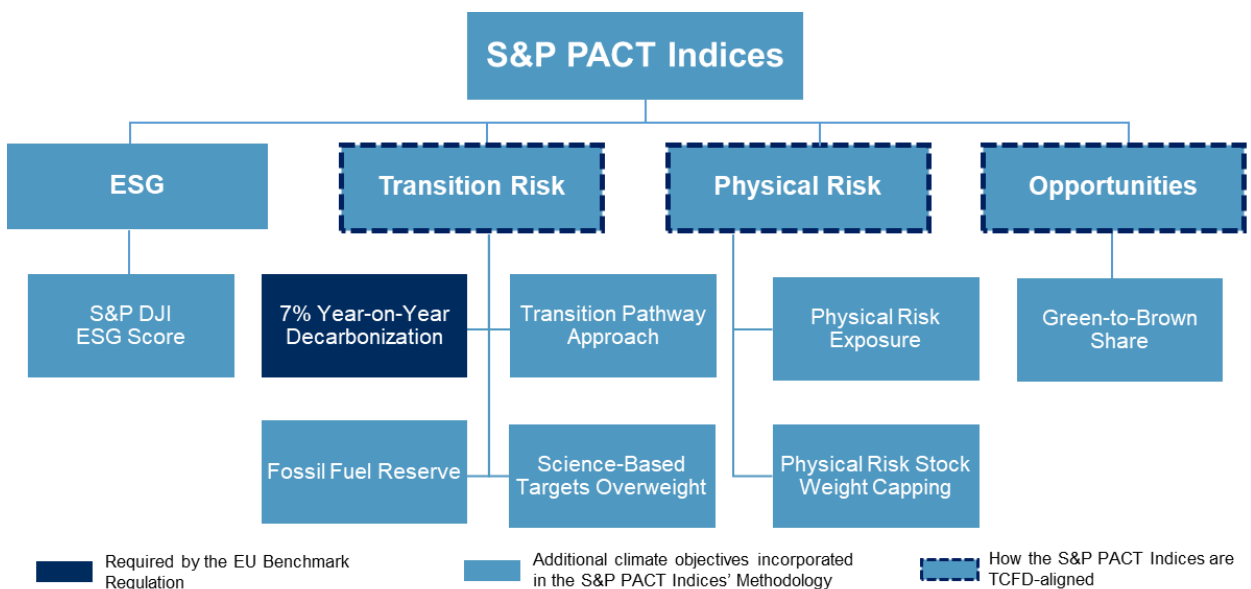
17. What is the TCFD, and why do the indices capture its recommendations? The Financial Stability Board (FSB) Task Force on Climate-related Financial Disclosures (TCFD) is a coalition of financial market and corporate professionals established in 2015. In June 2017, the TCFD published its final report with recommendations for voluntary and consistent climate-related financial (physical, liability, and transition) risk disclosures for use by companies in providing information to investors, lenders, insurers, and other stakeholders.

Its work and recommendations aim to help companies understand what financial market disclosures are required to measure and respond to climate change risks and to encourage firms to align their disclosures with investors’ needs.

Incorporating the recommendations of the TCFD within the indices allows for a more holistic approach to climate risk mitigation, while taking advantage of climate opportunities. This alignment with the TCFD is an example of how the S&P PACT Indices go beyond meeting minimum requirements from the TEG.

18. How do the S&P PACT Indices align with the TCFD? The S&P PACT Indices seek to align with the Recommendations of the Task Force on Climate-related Financial Disclosures (TCFD, 2017) by aiming to mitigate transition risk and physical risk, while benefiting from climate opportunities. The specific datasets related to transition risk, physical risk, and opportunities are shown in Exhibit 3.

Exhibit 4: S&P PACT Indices’ Alignment with the TCFD Framework



Source: S&P Dow Jones Indices LLC. Chart is provided for illustrative purposes.

The TCFD also recommends the use of scenario analysis, which is incorporated into the physical risk dataset, transition pathway approach, and science-based targets overweight.

EU CTB AND EU PAB MINIMUM STANDARDS

19. What are the minimum standards for EU CTBs and EU PABs? In order to label a benchmark as EU CTB or EU PAB, the TEG has proposed that these indices achieve specific outcomes, both directly and relative to their benchmarks, over time. These include:

- A reduced index-level carbon intensity compared with the benchmark (a 30% reduction for a CTB and a 50% reduction for a PAB at each measuring period);
- A reduced year-on-year index-level carbon intensity of at least 7% on average per year (self-decarbonization);
- The screening of companies involved in specific business activities to the appropriate thresholds (as defined by the TEG);
- The retention of exposure to sectors highly exposed to climate change issues to levels that are at least equal to benchmark levels; and
- Where relevant, the rewarding of companies meeting defined criteria (as defined by the TEG) regarding any evidence-based climate targets set.

Should these criteria not be met for a consecutive period of two years, the indices will no longer be permitted to be labeled EU CTB or EU PAB.

20. How is the index-level carbon intensity measured? The index-level carbon intensity is calculated as the annual weighted average of the individual company's carbon intensities (operational and first-tier supply chain emissions over revenues), weighted by the proportion of each constituent in the index, where a constituent's carbon intensity is calculated as the sum of Scopes 1, 2, and 3 emissions, divided by its enterprise value plus cash (see Equation 1).

Equation 1: Index-Level Carbon Intensity

$$\sum w_i \times \frac{(GHG1_i + GHG2_i + GHG3_i)}{EVIC_i}$$

where:

w_i = weight of the company i in the index

$GHG1_i$ = Scope 1 GHG emissions in tCO₂e for the company i

$GHG2_i$ = Scope 2 GHG emissions in tCO₂e for the company i

$GHG3_i$ = Scope 3 (upstream and downstream) GHG emissions in tCO₂e for the company i

$EVIC_i$ = enterprise value including cash of the company i

This metric is calculated for the S&P PACT Indices and their benchmarks in order to determine if the indices meet their index-level carbon intensity relative to the benchmark and self-decarbonization requirements. These calculations use the greenhouse gas (GHG) emissions dataset provided by S&P Global Trucost.

For more information on the S&P Global Trucost GHG emissions dataset, please complete the contact form [here](#).

21. How do the S&P PACT Indices adjust the carbon intensity for inflation when measuring the 7% year-on-year decarbonization? The denominator of the carbon intensity (EVIC) is divided by the EVIC growth of the benchmark index since the index launch date. This allows for the decarbonization to be driven by falling carbon emissions rather than rising EVIC.

22. Why is EVIC used in the calculation of the index-level carbon intensity and not enterprise value (EV)? The *TEG Handbook*⁵ (EU Technical Expert Group on Sustainable Finance, 2019) suggests the use of EVIC rather than EV:

In the report of September 30th 2019,⁶ we use the classic definition of “Enterprise Value ... [being] defined as the sum of the market capitalization of common stock at fiscal year end, the market capitalization of preferred equity at fiscal year-end, and the book values of total debt and minorities’ interests minus the cash and cash equivalents held by the enterprise” (p. 41). This definition relies *inter alia* on companies accounting the concept of ‘cash equivalents’ with high levels of integrity. In practice, rare exceptions can occur in which firms report cash equivalents but the financial market does not consider these truly as equivalent to cash and hence discounts their value, potentially leading to negative enterprise values.

If a benchmark administrator is concerned about this rare phenomenon, then the subgroup recommends excluding cash and especially cash equivalents from the computation of Enterprise Value. Such an exclusion would result in the concept of Enterprise Value Including Cash (EVIC).

‘Enterprise Value Including Cash (EVIC)’ is defined as the sum of the market capitalization of ordinary shares at fiscal year end, the market capitalization of preferred shares at fiscal year-end, and the book values of total debt and minorities’ interests. No deductions of cash or cash equivalents are made to avoid the possibility of negative enterprise values. (p. 11)

23. How do the indices ensure the index-level carbon intensity reduction relative to the benchmark and self-decarbonization targets are met? At each quarterly rebalance, the indices are optimized subject to several methodologically defined constraints. The two carbon intensity reduction targets required by the TEG are constrained to achieve these annual targets.

24. Are there any other mechanisms employed to provide additional confidence that the decarbonization targets will be met using average weights, as outlined in the TEG’s final report? Yes, quarterly rebalancing reduces the likelihood that weights will drift intra-rebalance and therefore creates less opportunity for large swings in the index’s carbon intensity. Also, a buffer of 5% below the target trajectory is employed. These two measures increase confidence that the trajectory line will not be broken on an average weight basis.

⁵ The EU Technical Expert Group on Sustainable Finance. (2019:11). *Handbook on Climate Benchmarks and Benchmarks’ ESG Disclosures*, available at https://ec.europa.eu/info/files/192020-sustainable-finance-teg-benchmarks-handbook_en.

⁶ The EU Technical Expert Group on Sustainable Finance. (2019). *TEG Final Report on Climate Benchmarks and Benchmarks’ ESG Disclosures*, available at https://ec.europa.eu/info/files/190930-sustainable-finance-teg-final-report-climate-benchmarks-and-disclosures_en.

25. Why do the S&P PA Indices have a different approach than the S&P CT Indices? The S&P PA Indices encompass all the elements of the S&P CT Indices, but are differentiated by more ambitious decarbonization targets and additional restrictions, as seen in their additional constraints and eligibility requirements. This includes a greater minimum carbon intensity reduction, stronger green-to-brown share, and further fossil fuel exposure related exclusions for the S&P PA Indices. These approaches may provide options for investors who have differing opinions as to issues such as tracking error constraints and divestment versus engagement.

S&P PACT INDICES METHODOLOGY AND SPECIFIC CONCEPTS

Index Eligibility

26. What exclusions affect the indices? The TEG's final report requires EU CTBs and EU PABs to make some baseline exclusions, as well as a further set of activity exclusions for PABs. Tobacco exclusions are also applied. Therefore, the S&P PACT Indices are aligned in that they employ the recommended exclusions.

27. What are included in the baseline exclusions? The baseline exclusions required for EU CTBs and EU PABs are controversial weapons and societal norms violators.

The S&P PACT Indices exclude companies from their eligible universes that, either directly or via an ownership stake of 25% or more of another company, are involved in:

- Cluster weapons;
- Landmines (anti-personnel mines);
- Biological or chemical weapons;
- Depleted uranium weapons;
- White phosphorus weapons; or
- Nuclear weapons.

To address the societal norms violators requirements, the S&P PACT Indices also make exclusions from their eligible universes based on global norm violations.

- Companies that are deemed by Sustainalytics to be non-compliant from a Global Standards Screening perspective are ineligible.
- The indices also exclude companies from their eligible universes that, either directly or via an ownership stake of 25% or more of another company, that:
 - Produce tobacco;
 - Have tobacco sales accounting for greater than 10% of their revenue; or
 - Have tobacco-related products and services accounting for greater than 10% of their revenue.

Tobacco is a widely used ESG exclusion that is commonly applied to other S&P DJI ESG Indices.

28. What is included in the activity exclusions applied to the S&P PACT Indices? The activity-based exclusions required for the EU PABs relate to fossil fuel extraction and power generation activities.

- Companies involved in coal exploration or processing are not eligible for EU PABs if these activities comprise 1% or more of company revenues.
- Companies involved in oil exploration or processing are not eligible for EU PABs if these activities comprise 10% or more of company revenues.
- Companies involved in natural gas exploration or processing are not eligible for eligible for EU PABs if these activities comprise 50% or more of company revenues.
- For companies involved in power generation where these activities comprise 50% or more of company revenues, companies whose Scopes 1, 2, and 3 emissions intensity exceed 100 gCO₂e/kWh generated are not eligible for EU PABs.

The S&P Paris-Aligned Indices also exclude stocks involved in the following business activities:

- Controversial weapons
- Tobacco
- Small arms
- Military contracting
- Thermal coal
- Oil sands
- Shale energy
- Gambling
- Alcohol

For more information on index eligibility criteria, see the S&P PACT Indices Methodology, found at <http://www.spglobal.com/spdji/en/documents/methodologies/methodology-sp-paris-aligned-climate-transition-pact-indices.pdf>.

Index Optimization and Constraints

29. Why is optimization used to determine constituent weighting? The S&P PACT Indices target the achievement of many specific outcomes as part of the overall index objective. Optimization is used to ensure objectives are met simultaneously and in the most efficient manner possible. The indices weight eligible constituents in a manner that minimizes active risk, while fulfilling objectives related to the following.

- Use of the S&P Global Trucost transition pathway approach
- Index-level carbon intensity reduction relative to the benchmark
- 7% self-decarbonization year-on-year
- Overweight companies setting science-based targets (subject to eligibility criteria)
- More holistic ESG performance through inclusion of S&P DJI ESG Score
- Index-level high climate impact sector exposure
- Use of a cap on companies insufficiently disclosing GHG emissions
- Reduced index-level fossil fuel reserves
- Reduced index-level physical risk
- Use of a cap on companies with the highest physical risk
- Improved green-to-brown share
- Ensuring diversification of active stock bets
- Ensuring a level of absolute diversification

- Liquidity control
- Minimum stock threshold to ensure tradability

For more information on the specifics of these index constraints, see the S&P PACT Indices Methodology, found at

<http://www.spglobal.com/spdji/en/documents/methodologies/methodology-sp-paris-aligned-climate-transition-pact-indices.pdf>.

30. What is the S&P Global Trucost transition pathway approach? The S&P Global Trucost transition pathway approach assigns each company a carbon budget that will make it compatible with a 1.5°C climate change scenario. When the budgets of all companies are aggregated, this will be the budget for 1.5°C climate change scenario compatibility. This incorporates forward-looking projections of carbon emissions and companies' targets for decarbonization and judges companies' projected emissions against their carbon budget to assess compatibility with a 1.5°C climate change scenario.

The S&P Global Trucost transition pathway approach is based on two models: the Sectoral Decarbonization Approach (SDA) (Krabbe, et al., 2015) and the GHG emissions per value added (GEVA) approach (Randers, 2012), which are both recommended by the Science Based Targets initiative (SBTi) (Science Based Targets Initiative, 2019) as ways to model macroeconomic transition in line with reduced climate change scenarios. The S&P Global Trucost transition pathway approach prefers the use of the SDA, but when this is not available, uses the GEVA approach for other sectors.

For more information on the S&P Global Trucost transition pathway approach dataset, please complete the contact form [here](#).

31. How do the SDA and GEVA approach differ? The approaches differ in how their budgets are constructed. The SDA is sector-specific and used for high-emitting sectors, using carbon intensities based on specific measures of output. For example, the unit of output for iron and steel companies is tCO₂ per metric ton of crude steel. This allows for an understanding of how carbon efficient companies are per unit of output. For GEVA, the unit of output used for all industries is gross profit.

The SDA also sets carbon budgets for specific sectors, allowing some sectors to decarbonize more slowly where the opportunities for decarbonization are far lower. This is allowed by setting more aggressive targets for sectors with greater scope for decarbonization.

The GEVA approach is applied to lower-emitting or heterogeneous business activities. Many companies have diverse business activities, most of which do not have distinct transition pathways defined in climate scenarios.

32. How is the transition pathway approach used in the S&P PACT Indices Methodology to influence constituent weighting? To set the carbon budget targets for companies in the S&P PACT Indices, the indices use the S&P Global Trucost transition pathway approach. These budgets are calculated using a mixture of historical data and forward-looking projections. To make the index compatible with a 1.5°C scenario on a forward-looking basis, the methodology assures that overall, the index is aligned with the budget on a weighted average basis at each quarterly rebalance.

The weights of companies in the indices are constrained to ensure they are collectively within the desired budgets for such a scenario. The index's budget is defined as the sum of all constituent budgets (as calculated using either the SDA or GEVA models) for the period stretching back five years and forward six, including the current year. Using forward- and backward-looking data enables the approach to encompass evidence of company emissions in the past and what they are expected to emit in the future.

33. Why do the S&P PACT Indices have carbon budget targets, in addition to the carbon intensity improvement (relative to the benchmark) and index decarbonization targets? In addition to the carbon intensity improvement and decarbonization targets in the S&P PACT Indices Methodology, as requirements for any EU CTBs and EU PABs as outlined in the TEG's Final Report, the S&P PACT Indices also adopt carbon budget targets that are not explicitly required by the TEG.

The adoption of carbon budget targets allows the indices to increase weight in companies on a trajectory compatible with a 1.5°C climate change scenario on a forward-looking basis, in addition to the hard constraint set out by the TEG to decarbonize by 7% year-on-year. Its inclusion in the methodology adds value by allowing the index to overweight companies that are more likely to decarbonize, thus reducing transition risk and potentially turnover of the index.

34. What is the transition pathway budget alignment (TPBA), and how is it used in the indices? The TPBA is the output metric from the use of the transition pathway model in the S&P PACT Indices methodology. This metric allows an understanding of whether a company is over or under its 1.5°C compatible budget and to what magnitude.

35. What does it mean to winsorize, and why is this performed for the TPBA in the S&P PACT Index Methodology? Winsorization is used to reduce the impact of outliers in the optimization process. This means the index cannot be 1.5°C aligned purely because a small number of companies are highly aligned and make up for others. The winsorization means a larger number of aligned companies will have to be overweighted in the index to achieve 1.5°C alignment at the index level.

36. What is a 1.5°C scenario, and why does the S&P PACT Indices Methodology use this scenario instead of a 2°C scenario? A 1.5°C scenario refers to a climate trajectory that will limit the world to no more than 1.5°C of warming above pre-industrial levels. This will increase confidence in a stable global climate, according to the prevailing leading climate science research.⁷ The S&P PACT Indices align with a 1.5°C climate change scenario by using the S&P Global Trucost transition pathway approach and the 7% year-on-year decarbonization.

37. What are physical risks, and how relevant are they to investors? Physical risks can be chronic or acute in nature. Acute risks encompass the increased severity of extreme weather events, such as hurricanes, floods, droughts, etc. Chronic risks include persistent changes in precipitation patterns, rising global temperatures, and rising sea levels. Both chronic and acute physical risks can cause asset write-offs, reduced revenue, and higher costs due to

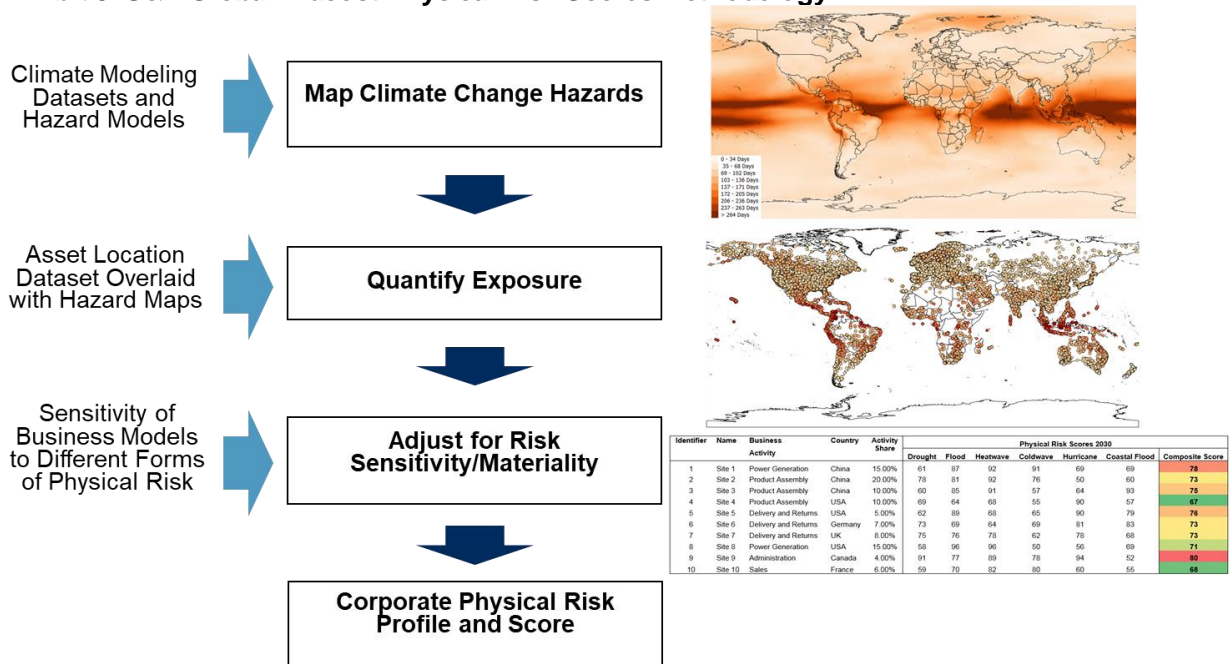
⁷ Masson-Delmotte, V., Zhai, P., Pörtner, H. O., Roberts, D., Skea, J., Shukla, P. R., . . . Waterfield, T. (2018). *Global warming of 1.5°C*. IPCC.

transportation issues and problems in supply chains, alongside increased insurance premiums for high-risk locations.

38. What is S&P Global Trucost’s physical risk dataset? Physical risks resulting from climate change can be acute (driven by an event such as a flood or storm) or chronic (arising from longer-term shifts in climate patterns) and may have financial implications for organizations, such as damage to assets, interruption of operations, and disruption to supply chains.

S&P Global Trucost’s physical risk dataset overlays climate modeling datasets and hazard models (based on the risks of water stress, flood, heatwave, cold wave, hurricane, wildfire, and sea level rise) on company’s asset locations (such as offices and factories) and adjusts for the company’s sensitivity to each specific physical risk. Each company receives a sensitivity-adjusted risk score based on the risk and sensitivity of the company’s various assets for each climate hazard indicator. The sensitivity-adjusted risk score for each climate hazard indicator is aggregated into a composite physical risk score for each company, which is used in the S&P PACT Indices Methodology (see Exhibit 5).

Exhibit 5: S&P Global Trucost Physical Risk Scores Methodology



Source: S&P Global Trucost. Chart is provided for illustrative purposes.

For more information on the S&P Global Trucost physical risk dataset, please complete the contact form [here](#).

39. How are physical risks and transition risks related? Physical and transition risks are not a priori connected. S&P Global Trucost’s physical risk scores and 1.5°C-aligned transition pathway data have an 18% correlation.⁸ Therefore, companies that are more aligned to a 1.5°C scenario do not necessarily see lower physical risks, and physical climate risks do not target the

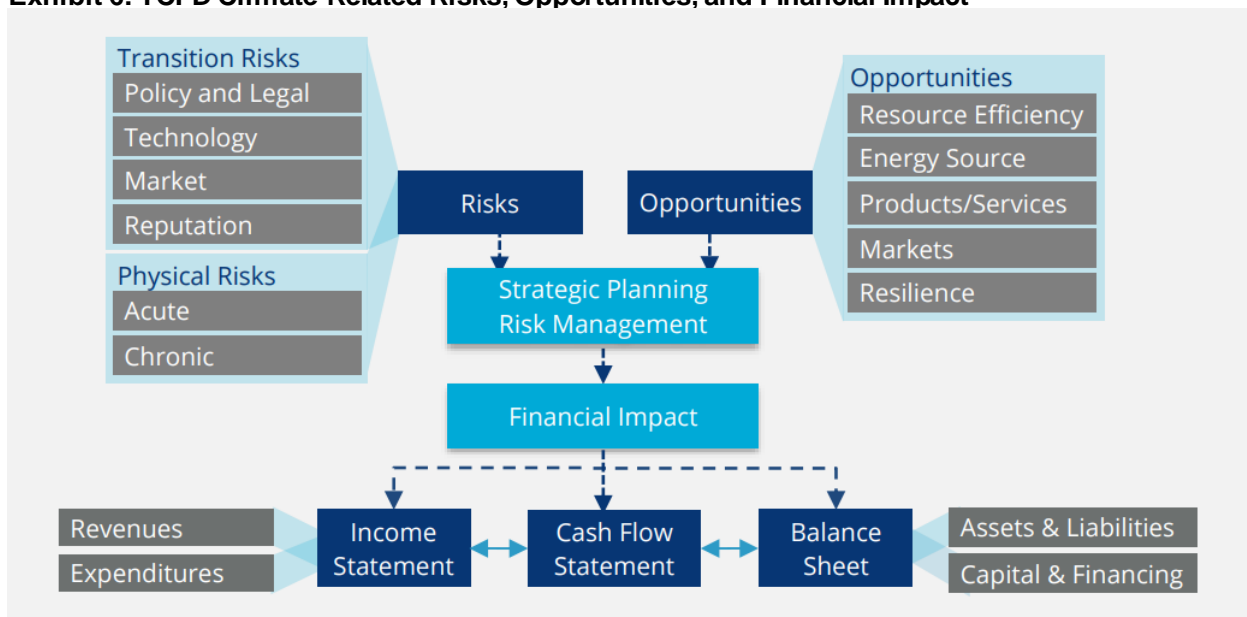
⁸ Source: S&P Dow Jones Indices LLC, S&P Global Trucost (2020). Analysis conducted with data from the S&P Eurozone LargeMidCap universe. Data as of December 2019.

worst emitters; they are based on the locations of company’s assets and a company’s operational sensitivity to the specific physical risks.

40. Why have physical risks been incorporated into the S&P PACT Indices Methodology? To fully address climate risks, it is essential to reduce both transition and physical risks. If transition risk is mitigated to a large extent, but the world does not decarbonize sufficiently, physical risks will occur more frequently and to a greater extent than currently. A failure to include physical risk in a climate strategy could possibly result in an index with no more climate risk mitigation than a standard market-cap index or even the potential for higher risk. Even if the world does transition to a 1.5°C scenario, the occurrence of physical climate events will likely be more frequent than they are currently.

This rationale is also echoed in the Recommendations of the TCFD (TCFD, 2017), which outlines why the physical risks of climate change should be taken into account by investors and companies alike (see Exhibit 7). Therefore, despite not being within the EU CTB and EU PAB requirements as defined in the TEG’s final report, the indices consider the physical risk exposures of constituents.

Exhibit 6: TCFD Climate-Related Risks, Opportunities, and Financial Impact



Source: TCFD (2017:8). Chart is provided for illustrative purposes.

41. Why do the indices have two constraints related to physical risk? Physical risks are divided in two categories by the TCFD: acute or chronic. Acute physical risk refers to event-based, tail risks. Therefore, ensuring companies with high physical risk cannot have large weights in the index is an appropriate way to mitigate acute physical risks of climate change—a dynamic capping approach is used to address this.

Chronic physical risk refers to risks that build and persist over time, such as risks faced as a result of sea level rise. Reducing the weight on an average basis will decrease the overall exposure to chronic risks, hence the application of both physical risk index constraints.

42. What are Scope 3 emissions, and why are they classified into downstream or upstream?

Scope 1 emissions are from directly emitting sources that are owned or controlled by a company. For example, Scope 1 includes the emissions produced by the internal combustion engines of a trucking company’s fleet.

Scope 2 emissions are from the consumption of purchased electricity, steam, or other sources of energy generated upstream from a company’s direct operations.

Scope 3 encompasses all other emissions associated with a company’s operations that are not directly owned or controlled by the company. Therefore, Scope 3 emissions include several sources of indirect emissions in the company’s supply chain (upstream) and downstream from the company’s owned or controlled operations (e.g., the emissions from the in-use phase of a company’s products or services, such as the driving of a truck produced by an automobile manufacturer). By this definition, Scope 3 emissions typically attribute to the largest quantity of a company’s emissions footprint. Scope 3 emissions are classified into 15 distinct reporting categories (Greenhouse Gas Protocol, 2013), as seen in Exhibit 7.

Exhibit 7: Upstream and Downstream Scope 3 Emissions Categories	
UPSTREAM	DOWNSTREAM
Purchased Goods and Services	Transportation and Distribution
Capital Goods	Processing of Sold Products
Fuel and Energy Related Activities	Use of Sold Products
Transportation and Distribution	End-of-Life Treatment of Sold Products
Waste Generated in Operations	Leased Assets
Business Travel	Franchises
Employee Commuting	Investments
Leased Assets	

Source: S&P Dow Jones Indices LLC, Greenhouse Gas Protocol. Table is provided for illustrative purposes.

43. How are Scope 3 emissions used in the S&P PACT Indices Methodology? The S&P PACT Indices use Scope 3 emissions data in the assessment of the index-level carbon intensity relative to the benchmark and self-decarbonization against the required targets for attainment of relevant benchmark labeling.

44. What is S&P Global Trucost’s Scope 3 dataset? The S&P PACT Indices Methodology uses S&P Global Trucost’s Scope 3 emissions dataset, which includes upstream and downstream emissions. Upstream Scope 3 emissions are calculated using S&P Global Trucost’s environmentally extended input-output (EEI-O) model that estimates corporate environmental impacts across company operations and supply chain tiers. Downstream emissions are used as reported by companies, modeled by S&P Global Trucost, or a mix of both if not all relevant downstream Scope 3 categories are disclosed.

Reported downstream Scope 3 data are used if verified, as stated in the company’s CDP disclosures. Otherwise, relevant and undisclosed Scope 3 category emissions data are modeled by S&P Global Trucost using top-down or bottom-up approaches.

The top-down downstream Scope 3 emissions modeling approach uses Scope 3 category and GICS sub-industry-specific emissions intensity factors and the company’s revenues in

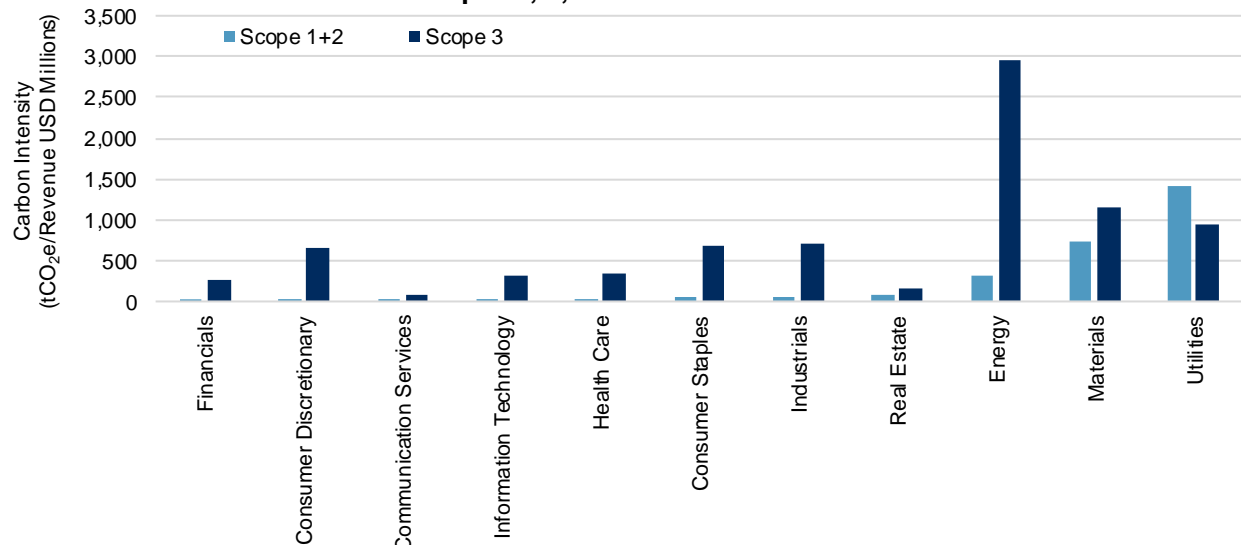
estimates. The bottom-up approach is a more sophisticated approach that leverages production data for emissions estimates in key sectors. For oil & gas, coal extraction and automotive (passenger) sectors, downstream transportation and distribution and use of sold products categories are particularly material, so S&P Global Trucost uses production-based modeling approaches to estimate the downstream Scope 3 emissions of relevant companies when possible.

For more information on the S&P Global Trucost Scope 3 emissions dataset, please complete the contact form [here](#).

45. Why are Scope 3 emissions incorporated into the S&P PACT Indices Methodology from inception, instead of being phased in? The TEG’s final report requires the use of Scope 3 emissions from inception for oil & gas and mining companies but recommends a Scope 3 data phase-in for all other industries over a four-year period. However, the S&P PACT Indices use both upstream and downstream Scope 3 emissions data in the index design from inception for all sectors for three reasons.

- 1. To allow for the difference in sector ratios of carbon emissions between using Scopes 1 and 2 only and incorporating Scope 3 emissions:** For example, it can be seen in Exhibit 8 that the Energy sector has one-third of the carbon intensity of the Utilities sector when looking at only Scopes 1 and 2, but when Scope 3 is included, it is the highest emitting sector. As also stated in the TEG’s final report, the inclusion of Scope 3 emissions allows investors to better proxy for company carbon risks.

Exhibit 8: Sector Breakdown of Scopes 1, 2, and 3 Emissions



Source: S&P Dow Jones Indices LLC, S&P Global Trucost. Analysis conducted with data from the S&P Eurozone LargeMidCap universe. Data as of December 2019. Chart is provided for illustrative purposes.

- 2. To allow for more direct comparability between companies:** If Scope 3 was included for only some sectors, these sectors would appear far worse from a climate perspective, due to the selective incorporation of Scope 3 emissions.

3. To ensure the consistency in the scope of measurement of the index

decarbonization over time: Decarbonization efforts would be affected by the inclusion of Scope 3 emissions for some sectors at a later date, or the carbon intensity calculations would have to make adjustments for the sudden inclusion of additional Scope 3 emissions data.

46. What are science-based targets? Science-based targets are defined as targets adopted by companies to reduce GHG emissions that are in line with what the latest climate science says is necessary to meet the goals of the Paris Agreement—to limit global warming to well below 2°C above pre-industrial levels and pursue efforts to limit warming to 1.5°C.⁹ The intention of using science-based targets is to help those external to companies track the progress of companies transitioning to a low carbon economy.

47. How are science-based targets treated in the indices? The TEG's final report requires labeled indices to consider an additional weighting allocation for companies that set evidence-based targets under strict conditions to avoid greenwashing. In the S&P PACT Indices Methodology, companies adhering to specific standards and setting science-based targets receive at least a 20% increase over their weight in the benchmark index, as a collective.

To adhere to these TEG requirements and protect against greenwashing, the indices define a company as qualifying for this index weight increase if:

- A company's science-based emission target is aligned with a 1.5°C climate change scenario;
- A company's emissions target is sufficiently disclosed and includes Scopes 1, 2, and 3 emissions;
- A company demonstrates 7% annualized decarbonization in prior performance over the past three years; and
- A company's target represents an annualized decarbonization rate of 7% when accounting for Scopes 1, 2, and 3 (upstream and downstream) emissions, assuming the company's current composition of emissions.

Companies that meet these criteria are overweighted as a group at each quarterly rebalance. Assessment of each company's targets relies on company-disclosed science-based targets, S&P Global Trucost's GHG emissions, and emissions disclosure datasets.

48. How do the S&P PACT Indices capture climate opportunities? The indices use a green-to-brown share metric as a proxy of relative climate-change-related opportunity. In this case, the green-to-brown share metric reflects the ratio of company revenues derived from green and brown power generation sectors, as defined in Exhibit 9.

⁹ <https://sciencebasedtargets.org/what-is-a-science-based-target/>

Exhibit 9: Green and Brown Power Generation Sectors	
GREEN POWER GENERATION SECTORS	BROWN POWER GENERATION SECTORS
Biomass Power Generation	Coal Power Generation
Geothermal Power Generation	Petroleum Power Generation
Hydroelectric Power Generation	Natural Gas Power Generation
Solar Power Generation	
Wave and Tidal Power Generation	
Wind Power Generation	
Nuclear Electric Power Generation	

Source: S&P Dow Jones Indices LLC. Table is provided for illustrative purposes.

This metric is defined using the sectors in S&P Global Trucost's sector revenues dataset. Companies that have a higher green-to-brown share have higher exposure to renewable and low-emitting energy sources relative to fossil fuel sources compared with other companies.

The S&P CT Indices ensure their green-to-brown share is at least as high as in their respective benchmark index, while in the S&P PA Indices, the green-to-brown share is at least four times that of their benchmarks. This is verified at each quarterly rebalance.

The TCFD's final report (TCFD, 2017) estimates there to be a USD 1 trillion investment required per year for the transition to a lower-carbon economy for the foreseeable future. This could likely generate new investment opportunities, and the green-to-brown share is how the index is designed to capture these opportunities.

49. Why is nuclear energy classified as a green sector? Nuclear power generation is assigned as a green sector in the S&P PACT Indices Methodology, since it is considered part of the solution by the IPCC (Masson-Delmotte, et al., 2018), as referenced in the TEG's final report.

50. How does the index methodology define high climate impact sectors, and what is the methodology trying to achieve by using them? High climate impact sectors are a designation made in the S&P PACT Indices Methodology. The TEG's final report defines high climate impact sectors as those that are key to the low-carbon transition. The TEG final report defines these as the following 9 (of 21) NACE sections:

- A. Agriculture, Forestry and Fishing
- B. Mining and Quarrying
- C. Manufacturing
- D. Electricity, Gas, Steam and Air Conditioning
- E. Water Supply, Sewerage, Waste Management and Remediation Activities
- F. Construction
- G. Wholesale and Retail Trade; Repair of Motor Vehicles and Motorcycles
- H. Transportation and Storage
- L. Real Estate Activities

S&P DJI classifies sectoral allocations at the revenue level rather than at the company level to minimize any unintentional greenwashing—further reasoning and interpretation of this can be found [here](#). The S&P PACT Indices must have at least the same revenues coming from high climate impact sectors, per dollar invested, as the benchmark index has. The index-level

carbon intensity reductions required by the TEG would be simple to achieve if the indices underweighted the most carbon-intensive sectors. However, the indices are required to not be underweight in the sectors in which there is the most potential for decarbonization.

51. What are NACE sections, and how are they used in the S&P PACT Indices? NACE sections are a classification of economic activities used within the European Community, which imposes the use of the classification uniformly within all the Member States, and is the subject of legislation at the EU level.¹⁰ They are used to define high and low climate impact sectors in the economy, with the share of high climate impact sectors to remain at least that of the EU CTBs and EU PABs.

NACE sections are mapped to the 464 S&P Global Trucost revenues sectors, which are then used in the S&P PACT Indices Methodology.¹¹ For more information on the S&P Global Trucost sector revenues dataset, please complete the contact form [here](#).

52. What are the differences between NACE sections and S&P Global Trucost sectors? NACE sections and S&P Global Trucost sectors are both approaches to define revenue streams. There are 464 S&P Global Trucost sectors, which are closely aligned with the North American Industry Classification System (NAICS). The 21 NACE sections are the first and most aggregated classification level. The most granular level of 4 NACE classes have 615 different classifications.

53. Why do the S&P PACT Indices use a revenue-based sector classification rather than company-level sector classifications? The S&P PACT Indices ensure their exposure to high climate impact companies is at least benchmark neutral by using the percentage of high climate impact revenues at the index level, rather than the index weights of companies assigned to high climate impact NACE sections. This is to appreciate that companies can be involved in a variety of different business activities that the use of a company-level classification system would fail to appreciate. Similarly, companies can derive revenues from several business segments, as seen in the use of S&P Global Trucost sectors in the index methodology, and by extension, exposure to high and low climate impact sectors, as defined by the TEG.

The S&P PACT Indices Methodology's consideration of index-level revenues from high climate impact sectors and the index constraint ensuring at least the same revenues per dollar invested as the underlying index allows this TEG requirement to be met in a more sophisticated way. This objective would not be achievable if only a company-level sector classification were used. This helps to minimize any unintentional greenwashing that may result from index design within the TEG-proposed high climate impact sector framework should company-level classifications be applied rather than revenue classifications.

Also, constructing the indices using NACE section (level 1) classifications means the index design has enough flexibility in constituent weighting, compared with use of a more granular level.

¹⁰ Eurostat (2008). *NACE Rev.2; Statistical classification of economic activities in the European Community*. Available at <https://ec.europa.eu/eurostat/documents/3859598/5902521/KS-RA-07-015-EN.PDF>.

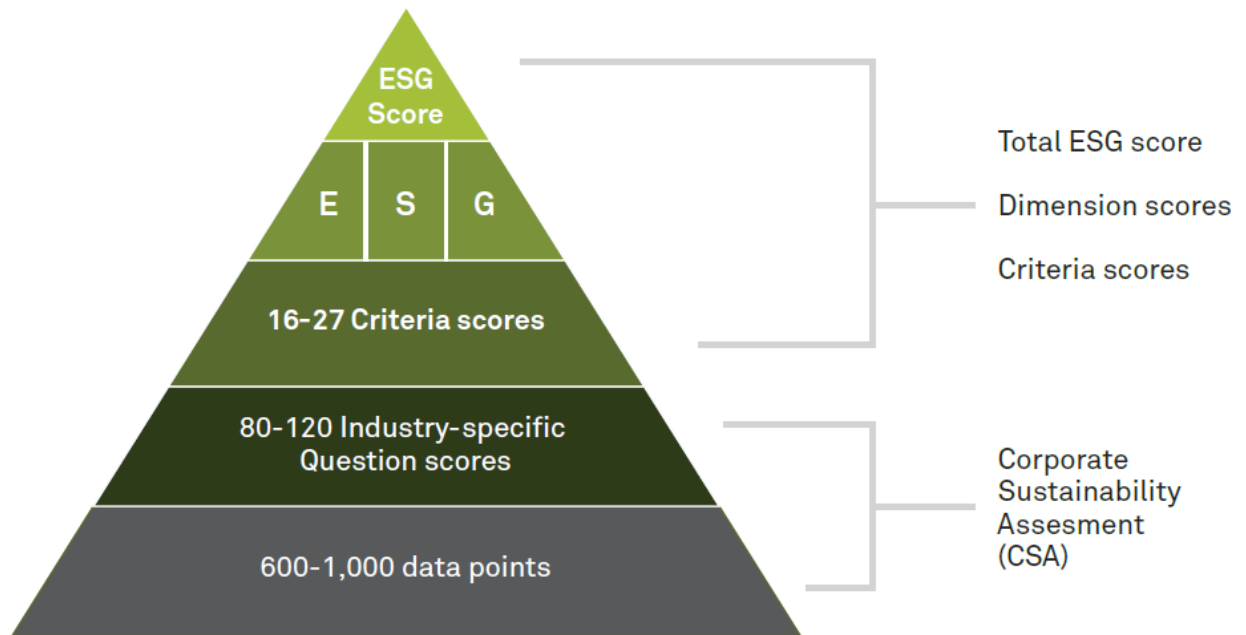
¹¹ For more information on high climate impact sectors, including the classification of S&P Global Trucost revenue sectors as either high or low climate impact sectors, please refer to the [Trucost 'Climate Impact Sectors' Classification](#).

54. When is a company deemed to have disclosed GHG emissions? A disclosed GHG emissions data status is achieved when S&P Global Trucost identifies companies as having full or partial disclosure in its largest carbon emissions category (Scopes 1 or 2). For example, if a company’s Scope 2 emissions are larger in absolute terms, the disclosure status of its Scope 2 emissions is used to define the disclosure status for the company overall. Scope 3 is not currently included in this determination, since so few companies sufficiently comply with Scope 3 disclosure rules.

55. What are the S&P DJI ESG Scores, and how are they used in the S&P PACT Indices? The S&P DJI ESG Scores are environmental, social, and governance scores that robustly measure ESG risk and performance factors for corporations, with a focus on financial materiality. They are a second set of ESG scores calculated by S&P Global, in addition to the S&P Global ESG Scores that are used to define the Dow Jones Sustainability Indices constituents.

The S&P DJI ESG Scores are the result of further scoring methodology refinements to the S&P Global ESG Scores that are the result of S&P Global’s annual Corporate Sustainability Assessment (CSA), a bottom-up research process that aggregates underlying company ESG data to score levels. The scores contain a total company-level ESG score for a financial year, comprising individual environmental (E), social (S), and governance (G) dimension scores, beneath which there are on average 21 industry-specific criteria scores that can be used as specific ESG signals (see Exhibit 10).¹²

Exhibit 10: S&P DJI ESG Score Aspect Levels



Source: S&P Global. Chart is provided for illustrative purposes.

The S&P PACT Indices use the S&P DJI ESG Score dimension scores as a proxy for a company’s ESG performance. The S&P CT Indices ensure that the index-level weighted average S&P DJI ESG Score is at least as high as in its benchmark index, while in the S&P PA Indices, the index-level weighted average S&P DJI ESG Score is at least 20% of the potential

¹² The number of criteria a company can be assigned to depends on how many are material to the company, ranging from 16 to 27.

improvement in index-level weighted average S&P DJI ESG Score higher than that of its benchmarks. The potential improvement is defined as the difference between the benchmark's index-level weighted average S&P DJI ESG Score and the highest S&P DJI ESG Score among all companies in the benchmark index. This is one of the S&P PA Indices' optimization constraints that are ensured at each quarterly rebalance.

S&P DJI ESG Scores range from 0 to 100, with 100 representing the best performance.

For more information on the S&P DJI ESG Scores, please see the [S&P DJI ESG Scores Frequently Asked Questions](#).

56. How are fossil fuel reserves treated in the S&P PACT Indices? This metric considers the quantities of GHG emissions associated with the proven (1P) and probable (2P) fossil fuel reserves owned by index constituents. It is calculated as the weighted average of annual average index constituent weights and fossil fuel reserve emissions intensities, where the fossil fuel reserve emissions intensity is defined as the sum of all company-owned reserve emissions, divided by its enterprise value plus cash (see Equation 2).

Equation 2: Index-Level Fossil Fuel Reserve Emissions Intensity

$$\sum w_i \times \frac{\text{Fossil Fuel Reserve Emissions}_i}{\text{EVIC}_i}$$

where:

w_i = weight of the company i in the index

Fossil Fuel Reserve Emissions $_i$ = the embedded emissions in the fossil fuel reserves owned by company i

EVIC $_i$ = enterprise value including cash of the company i

Fossil fuel reserve embedded emissions are used to control for the different emissions intensities of the same weight of coal, petroleum, and natural gas fossil fuels. For example, the emissions that would be emitted from the burning of a metric ton of coal is different than a metric ton-equivalent of petroleum (and to account for the different units each fossil fuel type are typically measured in).

The S&P CT Indices ensure that index-level weighted average fossil fuel reserve emissions exposure does not exceed that of the benchmark, while the S&P PA Indices have a reduced fossil fuel reserve emissions exposure of at least 80% relative to the benchmark. Index optimization constraints are used to ensure these outcomes at each quarterly rebalance.

57. What are hard and soft constraints in the S&P PACT Indices Methodology, and why is such a distinction made? The index constraints used to ensure the various specific index outcomes required by the methodology are met are classified as either hard or soft (see Exhibit 12). In the case that the index optimization does not solve at a quarterly rebalance, soft index constraints set can be partially relaxed to facilitate the solving of the optimization's objective function. However, hard constraints are non-negotiable, and those variables are required for EU climate benchmark labeling.

Exhibit 12: Hard and Soft Index Constraints	
Hard Constraints	Soft Constraints
Weighted Average Carbon Intensity (WACI) Target	Weighted Average S&P DJI Environmental Score
7% Decarbonization Trajectory WACI Target	Weighted Average Physical Risk Score
High Climate Impact Sectors Revenue Proportion	Weight of Non-Disclosing Carbon Companies
Weight of Eligible Science-Based Targets Companies	Diversification Absolute Maximum Stock Weight
	Diversification Relative Stock Weight
	Liquidity Maximum Stock Weight
	Fossil Fuel Reserves
	Physical Risk Maximum Stock Weight
	Green-to-Brown Revenue Share
	1.5°C Climate Scenario Transition Pathway Budget Index Alignment

Source: S&P Dow Jones Indices LLC. Table is provided for illustrative purposes.

INDEX DATA & LICENSING

- 58. How much index history data is available?** The S&P Eurozone LargeMidCap Net Zero 2050 Paris-Aligned ESG Index and S&P Eurozone LargeMidCap Net Zero 2050 Climate Transition ESG Index were launched on April 20, 2020. The first value date for the indices is Dec. 31, 2016. Data is available for the index back to this date, while live performance data is available for each index from its launch date.
- 59. How can I access the data for the S&P PACT Indices?** S&P PACT Index data are calculated and delivered daily and available on S&P DJI's SPICE® platform or daily Secured File Transfer Protocol (SFTP) scheduled data feeds, delivered using S&P DJI's Enterprise Data Xchange (EDX) platform.
- 60. What is SPICE, and how can I access it?** SPICE is S&P DJI's web-based index and constituent data-delivery platform. SPICE provides subscribers with access to timely, comprehensive data, corporate action alerts, and developments that affect index composition and weighting. Subscribers can customize and schedule reports to suit their respective investment criteria. For more information on SPICE, please see <https://www.spice-indices.com/idp/#/>.
- 61. What does SFTP mean?** Secured File Transfer Protocol (SFTP) is a secured means of transferring data files on a Secure Shell (SSH) data stream. SFTP is a secure version of File Transfer Protocol (FTP) and is part of the SSH Protocol. This term is also known as SSH FTP.
- 62. Do I need a license from S&P DJI in order to use the indices and their data?** Yes, in order to access, receive, use, or distribute all index data or any related information, a subscription or license agreement with S&P DJI is required.
- 63. Do I need a license from S&P DJI to use the indices in connection with financial products?** Yes, in order to use the indices in connection with a financial product or transaction, a license agreement with S&P DJI is required.

64. How can I find out the constituents of these indices? For information on the index constituents, please contact your S&P DJI account representative or visit www.spglobal.com/spdji/en/contact-us/.

65. Where can I find more information about these indices? More information on all available indices in this series can be found at www.spglobal.com/spdji/en/index-family/esg/esg-climate.

The following collateral is also available to support the S&P ESG Index Series.

- [S&P Paris-Aligned & Climate Transition Indices Methodology](#)
- [Trucost Climate Impact Sector Classification](#)
- [Climate Change Investment Theme Page](#)
- S&P DJI Education: [Conceptualizing a Paris-Aligned Climate Index for the Eurozone](#)
- S&P DJI Education: [The Journey to Net Zero](#)
- S&P DJI Education: [Transition to a 1.5°C World with the S&P PACT Indices](#)
- S&P DJI IndexTV: [Navigating Climate Risk with Indices](#)
- Indexology® Blog: [The EU Climate Transition and Paris-Aligned Benchmarks: A New Paradigm](#)
- Indexology Blog: [Two Birds, One Stone: How the S&P Paris-Aligned Climate Index Concept Meets the Proposed EU Climate Benchmark Regulation and the Recommendations of the TCFD](#)
- Indexology Blog: [The S&P Eurozone Paris-Aligned Climate Index Concept Sensitivity Analysis: Decarbonization over Time](#)
- Indexology Blog: [The S&P Eurozone Paris-Aligned Climate Index Concept: Implementing the Proposed EU Climate Benchmark Regulation](#)
- Indexology Blog: [The S&P Eurozone Paris-Aligned Climate Index Concept: A Greenwashing Minimization Approach to High Climate Impact Sector Neutrality](#)

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