

Transition Disruption Metric

The [PACTA](#) portfolio alignment tool now features a **Transition Disruption Metric (TDM)**, helping investors prepare for potential portfolio disruption stemming from risks associated with a disorderly transition to a low-carbon economy. Developed by the independent, non-profit think tank [2° Investing Initiative](#) (2DII) with backing from the Principles for Responsible Investment and in collaboration with the IPR consortium, PACTA now provides the TDM alongside its flagship portfolio alignment model. It indicates the degree of potential portfolio disruption under the Inevitable Policy Response’s (IPR) new [Forecast Policy Scenario](#) (FPS), going out to 2030.

Overview of the TDM metric and the PACTA analysis

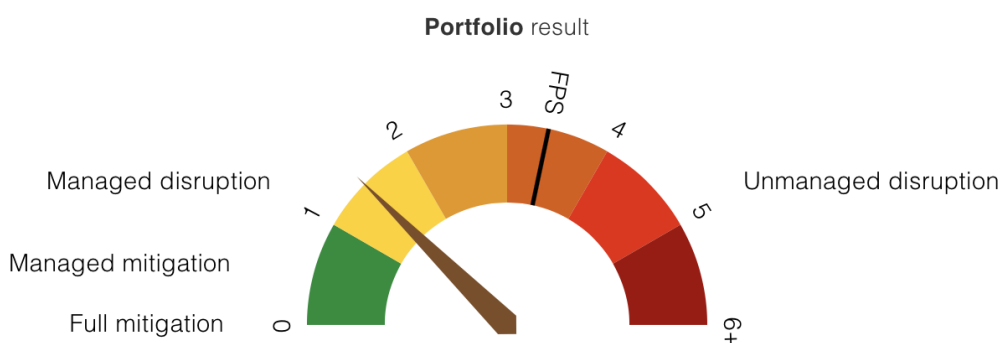
The PACTA methodology measures the alignment of investments in 7 economic sectors. The methodology is based on comparing what needs to happen in these sectors in terms of decarbonization to what the companies in your portfolio are planning to do in the coming 5 years. The methodology consolidates and aggregates global forward-looking asset-based company data (i.e. what are the production plans of a specific manufacturing plant or power plant over the coming five years), based on third-party business intelligence providers up to the level of an ultimate parent company. The PACTA for Investors approach allows investors to assess the overall alignment of their portfolios with climate scenarios and the Paris Agreement. More about the PACTA methodology can be found at transitionmonitor.com.

The TDM metric complements the PACTA’s alignment model of PACTA, in the sense that the investors who want to mitigate the policy risk would need to move ahead of the IPR scenario. If investors want a smooth transition to the scenario, they should start adjusting or engaging with companies at a faster or slower pace according to their results.

The TDM compares the portfolio’s transition pace from 2021-2026 based on the production forecasts of the companies in your portfolio, against what will be needed from the companies in the subsequent four years from 2026 in order to align with the FPS scenario by the end of 2030. In other words, it provides a quantitative score of potential disruption based on how far the portfolio lags / leads the FPS scenario in the first five years.

The indicator will be available at technology and portfolio level, subject to scenario and data availability. The higher the score, the higher the chance of portfolio disruption in the medium-term. If investors want to mitigate policy risk and transition more smoothly, they would need to move ahead of the FPS. This means they should begin adjusting exposure or engaging with companies at a faster or slower pace, according to their results under the TDM.

Visual representation



How to interpret the TDM results

- **Full mitigation (0):** The portfolio is ahead of the FPS scenario pathway.
- **Managed mitigation (from 0 to 1):** A score within this range suggests that if the companies of the portfolio maintain the trend and pace of their first five-year capital stock evolution for the remaining time of the analysis, the portfolio won't be disrupted.
- **Managed disruption (1 to 1.5):** While the portfolio is in line with the trend of the FPS scenario, the portfolio companies need to accelerate the pace of their capital stock evolution from the 5th year onwards and over the remaining time of the analysis to reach the level of the FPS scenario.
- **Unmanaged or high disruption (over 1.5):** A score over 1.5 suggest an increased unmanaged disruption. The acceleration of the pace of the capital stock evolution must be much higher than in the first five-years for the remaining time of the analysis to reach the level of the FPS scenario. A score higher than 2 may indicate that the portfolio is even going in the opposite direction of the long-term scenario trend.

Here is how it works using the example of having to write a one-page letter in one hour, where we track progress disruption:

- If you wrote the letter in 30 minutes, your TDM is 0. Your work is done ahead of time.
- If you wrote half the letter in 30 minutes, your TDM is 1. You are on track to finish the letter within the hour.
- If you wrote only a quarter of a page in 30 minutes, your disruption is 1.5. You are significantly behind finishing the letter and need to accelerate, but it is probably manageable still.
- Anything above 1.5 (anything less than the quarter of the work done after half the time spent) involves significant disruption

Metric Definition

We define the Transition Disruption Metric, TDM, for some technology, i , as:

$$TDM_i = \max\left(0, \frac{S_i(t_f) - P_i(t_x)}{S_i(t_f) - S_i(t_0)} * \frac{t_f - t_0}{t_f - t_x}\right)$$

Where:

$S_i(t)$: Expected production according to the FPS scenario

$P_i(t)$: Planned production of the company according to our Asset Based Company Data.

t_0 : Timestamp of the analysis

t_x : The year for which disruption is calculated

t_f : Final year of the analysis

Edge case:

- Change of direction after the 10-year window, or a non-monotonic function during the 10 year window.
 - To address this case, we should take into account the long-term trend of the scenario.

IF:

$$S_i(t_f) > S_i(t_0) \text{ AND } S_i(t_x) < S_i(t_0)$$

OR

$$S_i(t_f) < S_i(t_0) \text{ AND } S_i(t_x) > S_i(t_0)$$

Multiply for -1 as follows:

$$TDM_i = \max\left(0, \frac{S_i(t_f) - P_i(t_x)}{S_i(t_f) - S_i(t_0)} * \frac{t_f - t_0}{t_f - t_x} * (-1)\right)$$

The TDM_i can be aggregated across technologies, to calculate the portfolio-level metric, as:

$$TDM = \frac{\sum (TDM_i * w_i)}{\sum w_i}$$

Where w_i is the weight of technology i , capital stock, in the portfolio at the start year of the analysis.