Rhodium Group

The Transition Acceleration Framework: A New Approach for Private Markets

Introduction

Left unchecked, climate change has the potential to destroy trillions of dollars in invested value through increased frequency and severity of a range of extreme weather events, chronic impacts like sea level rise and water scarcity, and degradation to critical infrastructure from heat stress. Successfully mitigating these impacts requires a global reallocation of capital that is both productive for investors and effective in reducing greenhouse gas emissions.

There has been meaningful progress in this reallocation of capital over the past decade. Renewable electricity and electric vehicle technologies are being deployed at scale around the world, and newer technologies to address some of the hardest to abate sectors of the economy are ready for commercialization. The policy environment for clean energy has generally improved, and capital markets have matured to address some of the incumbent financing idiosyncrasies.

This is, however, only the beginning of the process. There is still not nearly enough capital being directed toward low-carbon assets. Progress to date has flattened global emissions but is far from delivering an absolute decline. Many motivated investors and allocators are finding it increasingly challenging to find the signal of where capital can most effectively accelerate the global energy transition within a sea of ESG and impact reporting noise.

Providing this clear signal is the goal of the Transition Acceleration Framework (TAF). The TAF is designed to provide clarity for how a particular dollar invested moves us toward or further away from a decarbonized future over the next 25 years. It allows asset owners, managers, lenders, and others to work from the same foundation and brings decarbonization objectives closer to, and makes them more relevant to, investment decision-making.

The TAF assesses the potential for individual technologies to accelerate the energy transition, and then within those technologies, identifies the ways in which individual investments can most successfully accelerate deployment of the technology overall. Acceleration attributes include reducing project costs, increasing capital availability, opening new markets, building out supply chains, or improving political economy.

In short, the TAF helps investors maximize their impact by identifying which technologies matter most, and which elements of a deal will most effectively accelerate deployment of

that technology beyond the specific investment they are considering. This is not the first attempt to create a framework—far from it—but it is the first framework explicitly designed to help investors accelerate the global energy transition.

The current risk-based framework

The current climate change target-setting and reporting ecosystem for investors has been built around the concept of risk. Climate change presents a risk to certain assets and operations through an increased frequency and severity of extreme weather events and other chronic impacts from climate change (physical risk). The response from policymakers, innovators, and consumers also presents risks for assets, operations, and business models through potentially wholesale changes in the energy system, agricultural production, the built environment (transition risk).

About a decade ago, investors began paying attention to the risk climate change presents to financial markets. The Risky Business Project, led by a number of business leaders and former US Treasury secretaries, quantified the risks to the US economy of changes in the climate for the first time in 2014, and raised awareness of those risks within the business and financial communities. In 2017, the Task Force for Climate-Related Financial Disclosures released the first framework for companies and investors to quantify and report their own physical and transition risks. Later that year, a group of global central bank governors and supervisors established the Network for Greening the Financial System to analyze and manage climate and environmental risks to the financial sector.

In the years that followed, a growing number of companies began quantifying and reporting their Scope 1-3 emissions on a voluntary basis to help investors and other stakeholders better understand their transition risk. In turn, investors have used this information to assess their transition risk at the portfolio level. Private data providers have filled the gaps in voluntary company reporting by estimating Scope 1-3 emissions for a broad universe of publicly traded companies, as well as estimating Scope 1-3 emissions for other asset classes. Many financial market regulators now require that publicly traded companies disclose their Scope 1-2, and in some cases Scope 3 emissions.

The need for a complementary approach

While Scope 1-3 emissions estimates provide useful information for assessing risk, their utility is more limited for investors seeking to accelerate the global energy transition. This is especially true in private markets, where Scope 1-3 reporting infrastructure is less well developed, and where some of the most important clean energy investments are being made.

Scope 1-3 accounting is a useful tool to assign responsibility for emissions and measure progress over time. The resulting greenhouse gas inventory provides decision-useful information on the emissions caused by an organization's operations and supply chain. This approach is less useful to understanding the impact of an investment on atmospheric emissions or on the role the investment might have in enabling emission reductions by others. For example, using a Scope 1-3 approach, an investment in a utility-scale solar power project and a pharmaceutical company might appear to have roughly the same benefit for the global energy transition, because the fossil fuel power generation the solar

project is displacing is not included in the analysis. Some investors have attempted to address this by calculating the "Scope 4" or "avoided emissions" of a project or product. While a modest improvement, this still fails to capture the extent to which an individual investment accelerates the energy transition more broadly through technology learning, supply chain and market development, improved political economy, or other factors.

Scope 1-3 emissions accounting is too often treated purely as an obligatory reporting exercise conducted after an investment is made, and is not used to influence actual investment decision-making. This is the worst-case outcome since it creates additional work for already busy teams while not shaping real world outcomes. When emissions accounting is factored into investment decision-making, it is often done crudely with all types of capital assessed equally. Different asset classes with different return profiles have different roles to play in the energy transition. Capital markets do not compare the risk adjusted returns of venture capital compared to the risk adjusted returns of project finance. A useful framework for assessing energy transition impact should be differentiated by asset class as well.

Introducing the Transition Acceleration Framework

Rhodium Group, Generate Capital, and CalSTRS have partnered to develop a new framework to identify the areas where investment can have the greatest impact in accelerating the pace of global decarbonization. This Transition Acceleration Framework (TAF) is designed to be integrated into the investment decision-making process, and to provide asset owners, asset managers, lenders, and others with a shared understanding of where we are in the energy transition and how investors can most effectively accelerate progress.

Tracking and shaping the energy transition

The TAF is built off robust and independent baseline projections for the global energy transition as well as modeled estimates of the potential to accelerate the transition on a technology-by-technology basis. This helps investors identify where additional capital is most needed, from incubating new technologies to scaling those that are already mature. Both the baseline and potential projections will be updated annually, which will ensure that investors' focus evolves alongside the energy transition. Not everything that needs to be decarbonized can be economically decarbonized today, but the TAF helps ensure that those things that are not yet ready to scale have the clearest glidepath to global adoption when the time comes.

Built for, and integrated into investment decision-making

The TAF is built to be incorporated into normal capital allocation and investment decision-making processes, not just a reporting process conducted in retrospect. The TAF tracks issues that are critical to the core decisions that asset owners and managers make every day. Incorporating market dynamics, supply chain opportunities, capital availability, and innovation advances are core to the consideration of investment teams in their normal course of business. In that, the TAF can not only offer guidance on how particular investments or decisions can maximize the transitionary aspects of a deal or an allocation but can identify opportunities in the future that could be meaningful and valuable.

TAF components

The TAF contains the following key components:

- **Baseline projections:** The TAF leverages Rhodium Group's independent projections for energy system and greenhouse gas emissions trends around the world to create a baseline deployment path for individual technologies. For the current TAF prototype these baselines are deterministic, but will ultimately be fully probabilistic. These baselines capture a range of plausible demographic, macroeconomic, energy price, technology, and policy futures, and are updated annually to incorporate new developments.

- **Transition potential:** The TAF incorporates estimates of the deployment potential of all major emission-reducing technologies generated with the same suite of models Rhodium Group uses to produce the baseline estimates. As with the baseline projections, these "transition potential" estimates are deterministic in the prototype version of the TAF, but will ultimately be probabilistic and updated annually.

- **Acceleration attributes:** Within each technology, the TAF identifies the attributes of a specific investment that have the potential to accelerate deployment of that technology in the future. These "acceleration attributes" include increasing capital availability for future projects through demonstration effects, reducing the cost of future projects through technology learning, improving supply chains, opening new markets, and improving the policy environment.

- **Acceleration factor:** The combination of technology-specific transition potential and deal-specific acceleration attributes determine an investments overall impact on accelerating the energy transition. This "acceleration factor" can also be risk adjusted to tailor it to asset classes/portfolios with specific risk/return expectations.

TAF application

The TAF is designed to be used in a number of ways, all working off a shared understanding of the current state of the energy transition and what's needed for acceleration.

- **Asset owners:** Asset owners can use the TAF in asset allocation decisions within their private markets portfolios. The TAF provides insight into which areas of the energy transition are most in need of additional capital and what types of capital are most useful. Asset owners can use this in specific transactions as well as in manager selection and the evaluation of manager performance in accelerating the transition. Asset owners can use the TAF to track progress across their private market portfolio and report on that progress in alignment with investment strategy goals.

- **Asset managers:** Asset managers can use the TAF to inform cross-technology investment strategies, identifying the broad areas of highest transition impact within their risk/return objectives. Within each technology, the TAF allows investors to identify the elements of a deal that have the greatest impact.

- **Banks:** The TAF can be used by banks to assess the acceleration potential of project finance, structured finance, and tax equity investment, as well as in advising clients on transition-related projects.

Pilot implementation

CalSTRS and Generate are beginning to implement the TAF in their private markets allocation and investment activities, and are already finding it valuable. We are looking to expand the TAF pilot to include other similarly motivated asset owners and managers, as well as a few transition-focused banks to refine the framework and improve its utility before deploying it at scale.