

Transition Finance

Managing Funding to Carbon-Intensive Firms

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Abstract

This discussion paper seeks to advance the concept of transition finance as a channel for systemic decarbonization of the global economy. We offer an updated definition of transition finance, review estimates of investment flows directed towards low-carbon activities, and highlight metrics that could be adopted by banks, asset managers, and other financial institutions to ensure integrity. Transition finance has the potential to facilitate real changes in the global economy but needs a set of mandatory standards that underpin tangible contributions towards a future energy system. As capital providers examine their options for accelerating progress on climate change mitigation, we highlight the crucial role of transparent criteria in managing continued funding to fossil-fuel producers and energy-intensive firms.

1. Introduction

How should financial institutions approach capital provision for carbon-intensive firms? Financed emissions (UNEP, 2011) are increasingly a target of regulators, shareholders, and non-governmental organizations. In response, many investors are seeking to position themselves as more environmentally friendly. Yet aspirations for transformative green finance may now be running ahead of reality. Pre-pandemic, the world was consuming nearly 100 million barrels per day of oil and more than 100 million barrels of oil equivalent (BOE) of coal. Today's global economy is still heavily reliant on fossil fuels, and green finance cannot flourish without structural changes that address these deeply embedded dependencies. There can be no green finance without an underlying green economy.

As of today, there are not enough green assets to absorb the trillions of dollars of capital required for deep decarbonization. In some sectors, it is just a matter of time. In the global power sector, for example, a universal switch from fossil fuels to renewables is widely regarded as technically and economically feasible. But in other carbon-intensive sectors, pathways towards zero carbon remain unclear and subject to future technological developments. While financial markets play a vital role in the diffusion and commercialization of new technologies (Nanda & Rhodes-Kropf, 2016) this has historically been the domain of venture capital, a relatively small asset class. In the listed equities, investor appetite for experimentation tends to be more muted. In fixed income and bank lending, it's virtually non-existent.

The "use of proceeds" logic embedded in green finance (Caldecott, 2020) was a useful starting point to catalyze the market. It may be time to move on. Concerns are growing that without more holistic standards, green finance is simply cutting the same pie into different slices. In the words of one market participant, "All you are doing by giving some bonds a green label is making the rest of your debt a little bit browner." (FT, 2020) The worry is that green bonds are creating a market for virtue without driving systemic changes in global business operations and new capital expenditure. The Climate Bonds Initiative (CBI, 2020) has recently begun advocating for the application of climate labels to the whole corporate entity to address just such issues.

As capital providers seek to position themselves as agents of change in the transition to a low-carbon economy, investment policies need to evolve. There is today a grey area associated with transition finance comprised of trillions of dollars of mainstream capital markets activity. Most of it lacks any transparency on climate impact. Yet the industrial firms on the receiving end of these financial flows will have an enormous impact on the global carbon emissions trajectory over the coming decades. These companies have the potential to meaningfully contribute to climate stabilization and the transition to a zero-carbon future. But without new regulations and incentives, they are just as likely to reinforce the status quo. It's a growing challenge for financial institutions, particularly those with a global investment footprint.

An important motivation for this paper is to contribute to the development of investment policies that will help “bend the curve” on global greenhouse gas emissions. Article 2.1c of the Paris Agreement calls for “making finance flows consistent with a pathway towards low greenhouse gas emissions and climate-resilient development” (United Nations, 2015). The IPCC estimates that just under \$3 trillion of annual investments are needed to limit warming to 2°C. The gap does not necessarily need to be filled with new money into the system. Transition finance has the potential to significantly redirect existing capital flows, thereby altering the distribution of capital within the economy.

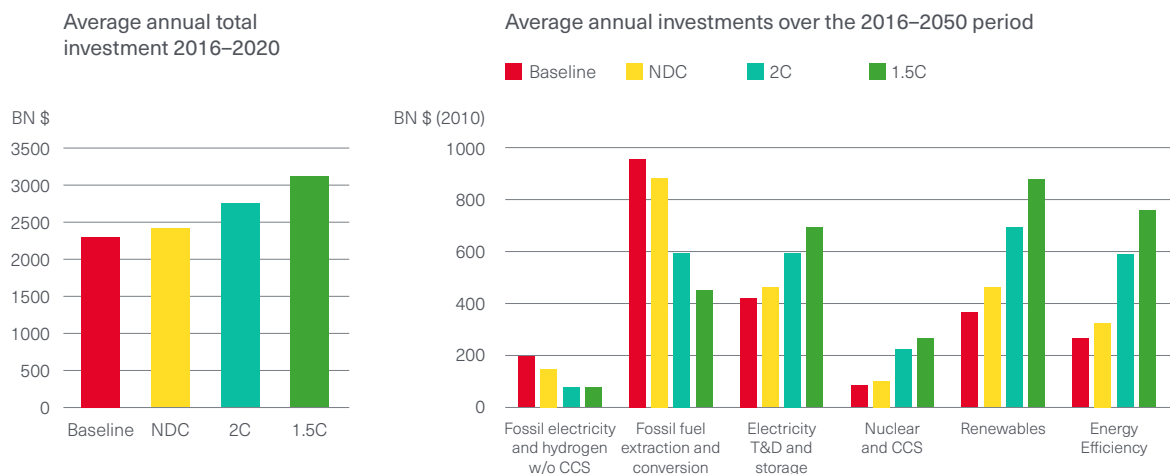


Figure 1 IPCC: Average annual investments over the 2016–2050 period total (left) and by sector (right) in the “baselines” (i.e., pathways without new climate policies beyond those in place today), scenarios which implement the NDCs (“NDC”), scenarios consistent with the Lower-2°C pathway class (“2°C”), and scenarios in line with the 1.5°C-low-OS pathway class (“1.5°C”). T&D stands for transmission & distribution.

Several initiatives are underway to monitor financial flows that deliver on the objectives of the Paris Agreement. Data disclosures and the harmonisation of data within industries is necessary to facilitate benchmarking by capital markets practitioners. The recent announcement by five standard-setting institutions to coordinate on a comprehensive framework for corporate reporting of climate impact is a welcome step in this direction.¹ The aim of this paper is to contribute to the process of harmonization by setting out a clear definition of energy transition finance, estimating the size of the market, and proposing a single standard by which companies in all industries could be evaluated.

¹ www.cdsb.net/corporate-reporting/1093/major-framework-and-standard-setting-institutions-commit-working-global

2. Defining Transition Finance

Green finance is an umbrella term that speaks to the role of financial institutions in facilitating greenhouse gas emission reductions in the real economy. In a previous report, we defined green finance as “sources of funding to new capital and operating expenditures that generate measurable progress towards the achievement of a well-recognized environmental goal” (TheCityUK & Imperial College, 2017). The green bond market, which grew to \$260 billion of primary issuance in 2019, is the most widely cited example. Yet, debates over definitions and legitimacy continue to cause controversy. For some, this controversy is proof that the market is working, by seeking to prevent greenwashing. Others see tight standards as a dead-end that will confine green finance to a niche position in the global finance industry and undercut its important role in capital allocation.

Key Terms in Sustainable Finance

Sustainable Finance

Sustainable Finance is the broadest heading. According to the European Commission (EC), it refers to the process of taking account of environmental and social considerations when making investment decisions, leading to increased investment in longer-term and more sustainable activities. The meaning of sustainability is rooted in the notion of sustainable development, as advanced by Brundtland (1987). The Global Sustainable Investment Alliance (GSIA) estimates that \$30.7trn at the start of 2018 were in “sustainable investing assets”.

Climate Finance

Climate Finance was introduced by the UN Convention on Climate Change (UNFCCC). It refers to local, national, or transnational financing that seeks to support mitigation and adaptation actions. This term has grown from a narrow focus on accounting for climate-aligned development finance to incorporating a much wider set of public and private sector investments.

Green Finance

Green Finance has been defined by the International Capital Markets Association (ICMA) as the financing or refinancing of projects with a demonstrable impact on environmental quality. The Climate Bonds Initiative was an early pioneer in developing a green finance taxonomy, which became an important resource for green definitions in the financial markets.

ESG investing

ESG investing (Environmental, Social, and Governance) is a practice of accounting for non-financial factors in investment decision making, to help identify risks and opportunities. It gained a lot of popularity among financial professionals. Numerous institutions, such as the Sustainable Accounting Standards Board (SASB), the Global Reporting Initiative (GRI), and Carbon Disclosure Project (CDP) are working to form standards and define materiality to facilitate incorporation of these factors into the investment process.

Socially responsible investing

Socially responsible investing (SRI) can refer to any combination of sustainable, green, or ESG investing.

Impact investments

Impact investments are investments seeking to generate positive social and environmental impact alongside a financial return (GIIN). A trademark of impact finance is the measurement and reporting of the social and/or environmental performance and progress of underlying investments. It generally describes a for-profit activity, excluding charity and traditional philanthropy.

As noted by the UN Special Envoy on Climate Action and Finance, Mark Carney, there may end up being “50 shades of green” when it comes to financing the transition to net-zero (Carney, 2019). But rather than further diluting the definition of green, an alternative approach is to add more colors and make the boundaries between them clearer.

At one end of the spectrum, some activities make an unambiguous contribution towards the goal of net-zero emissions. A typical example is wind power. It has some environmental impacts, but from a climate perspective, it makes sense. These activities are labelled green. At the other end of the spectrum, some activities pose an unacceptable level of reputational risk (e.g. Arctic oil) and/or risk of future obsolescence from green technological developments (coal-fired power). In the evolving parlance, they have been coded brown or red.

In between the poles of green and brown/red is a great mass of economic activity that is difficult to categorize. These activities that are not unambiguously clean nor unambiguously dirty. In this grey area, context matters.

Definitional issues have become more complex as attention has turned from terms to taxonomies. Adoption of the EU Taxonomy Regulation in June of this year has accelerated discussion about global investment standards. While the EU taxonomy does not directly tackle the issues associated with non-green assets, it suggests that “by establishing ‘brown’ criteria, the Taxonomy would effectively create three performance levels within the Taxonomy structure: substantial contribution (green), significant harm (brown, or perhaps red) and a middle category of neither substantial contribution nor significant harm” (EU, 2020).

While the EU taxonomy does not specifically define transition finance, it identifies transitional activities as those “making a substantial contribution to climate change mitigation.” The Taxonomy Regulation identifies three conditions for an activity to be included as a transitional activity: that it (i) has greenhouse gas emission levels that correspond to the best performance in the sector or industry; (ii) does not hamper the development and deployment of low-carbon alternatives; and (iii) does not lead to a lock-in of carbon-intensive assets, considering the economic life of those assets.

The Organization for Economic Cooperation and Development (OECD) published a report on transition finance in 2017. The focus then, however, was tracking public and private capital flows towards development in low and middle-income countries. (Piemonte, Cattaneo, Morris, Pincet, & Poensgen, 2019). The transition was defined in the context of a journey towards the 2030 Agenda for Sustainable Development, including the 17 Sustainable Development Goals and 169 targets (General Assembly UN, 2015). Caldecott (2020) completes that vein of thinking by defining transition finance as “the provision and use of financial products and services to support counterparties, such as companies, sovereigns, and individuals, realize alignment with environmental and social sustainability” (Caldecott, 2020).

We propose a further refinement to these approaches to move away from sustainability as the objective function of transition finance. We recognize that our focus on climate change mitigation may be viewed as too narrow. At this stage in the concept’s development, we believe there’s more to be gained than lost from specificity.

As in Figure 2, we see transition finance as a function of two characteristics. The first reflects the existing level of harm; in this case, absolute greenhouse gas emissions. The second axis describes the rate at which the firm is improving its emissions performance. In other words, it's not just the stock of emissions that matter – so too does the flow towards the desired end state.

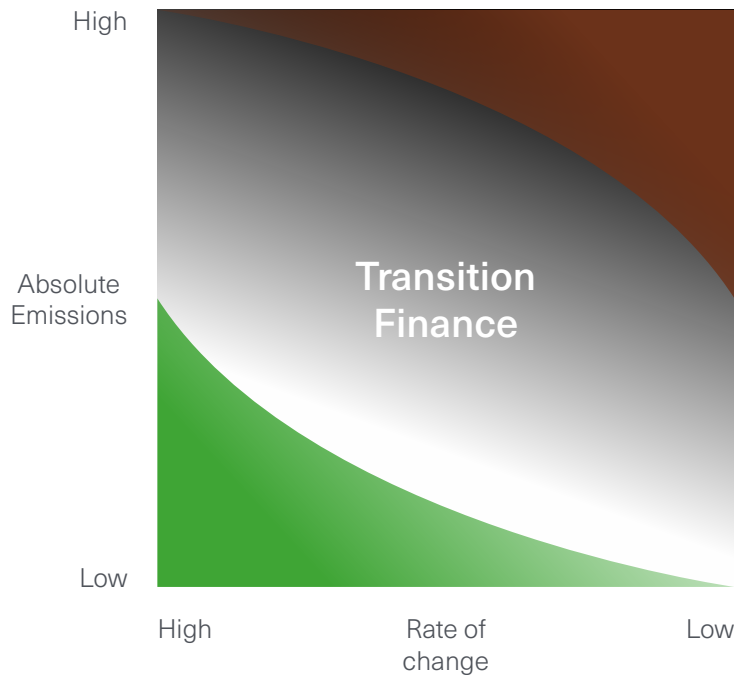


Figure 2 Transition Finance. Source: Authors

Our definition is as follows:

Transition finance is capital provided to economic agents to achieve a minimum rate of carbon emissions reduction.

Our proposal agrees with a recent call by the Climate Bonds Initiative for the application of a “transition label” at the entity level (CBI, 2020). In contrast, however, we do not prescribe a date-certain emissions target. Our definition contains a standard (a minimum rate of carbon emissions reduction), but it is silent on its prescribed value. The omission is intentional. We believe this is a decision that financial institutions must make for themselves, considering geographical and sectoral characteristics. We maintain that is an appropriate placement of responsibility, recognizing the counterfactual uncertainty embedded in climate investment policies.

Bradley & Drechsler (2013) describe counterfactual uncertainty as “uncertainty about non-actual worlds; about the way things could or would be if things were other than the way they are.” Meeting the aims of the UNFCCC Paris Agreement is one such counterfactual. By 2017, the world had already gone through 84% of its carbon budget for a 1.5 degrees target (IPCC, 2018). Even a more generous allowance to meet 2°C has been famously described as a “fantasy” (Tollefson, 2015). The UNEP Emissions Gap Report 2019 finds that even if all Nationally Determined Contributions (NDCs) under the Paris Agreement is implemented, the world remains on course for at least a 3.2°C temperature rise (UNEP, 2019). Transition finance is set against this backdrop of the uncertainty of what climate goal is feasible, and what pathway would deliver it.

While Chenet, Ryan-Collins, & Lerven (2019) argue that climate uncertainty should prompt government policymakers to adopt a precautionary approach, the same cannot be said for the financial institutions they regulate. In the absence of robust market structures that support profitable decarbonization, most private sector investors will be unwilling to adopt this principle unilaterally. Their reluctance for action arises from not just whether the world will meet its net-zero aims, but also how it will do so. Even if an investor were to adopt the Paris Agreement as their target, the job is hardly done. As shown in Figure 3, scenarios published by the Network for Greening the Financial System (NGFS) provide two macro-scenarios for hitting the 2-degree target (NGFS, 2020). They imply radically different changes in the global economy and very different risks to firms.

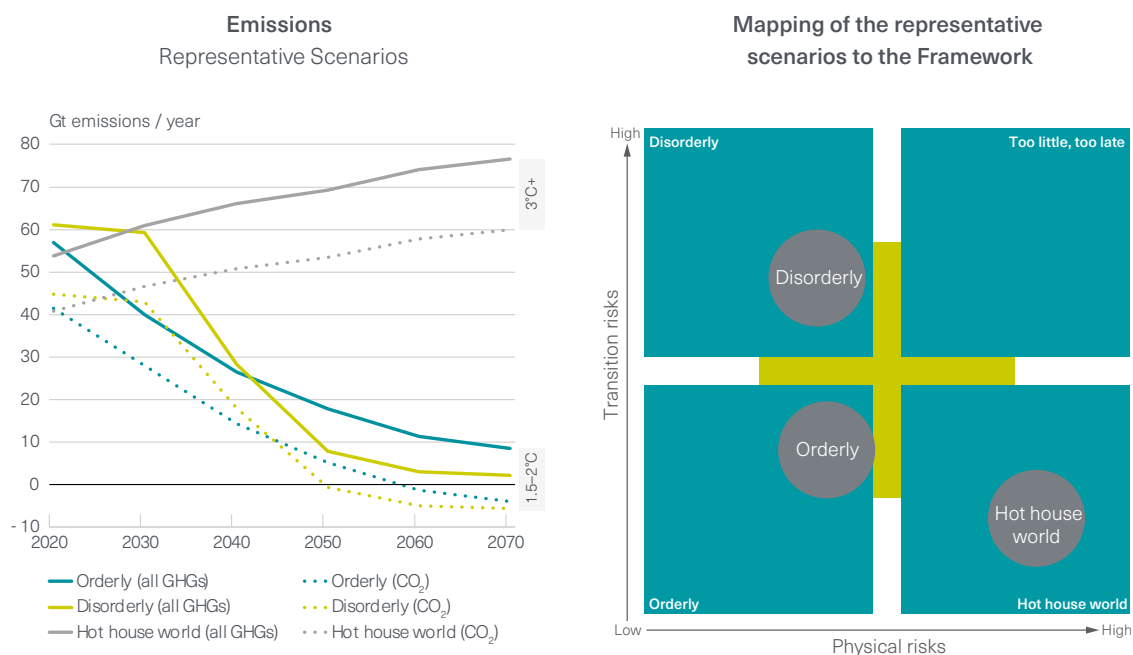


Figure 3 The Orderly and Disorderly scenarios explore a transition which is consistent with limiting global warming below 2°C. The Hothouse world scenario leads to 3°C+ of warming and severe physical risks. Source: NGFS

Mapping climate scenarios into investment policies requires that investors consider differences regarding the carbon intensities of different regions and sectors around the world. The carbon reduction potential of natural-gas-fired power, for example, is very different in South East Asia than in it is in Europe. The UNFCCC process has sought to establish principles of fairness that will act as a basis for what national governments should do (Ringius, Frederiksen, & Birr-Pedersen, 2002). But the logic of burden-sharing between countries and amongst sectors remains both inherently subjective and highly political. That process will continue to evolve in ways that are antithetical to the practice of risk quantification in most large financial institutions. As recently highlighted by researchers at ETH Zurich, no model has solved the puzzle of how to deal with all of the inherent social, political, and technological uncertainties that will shape societal responses to global climate change (Bingler & Senni, 2020).

For investors to make use of our definition, the crucial question they will need to ask themselves is: *Considering this uncertainty, what is the minimum rate of carbon reduction that should be demonstrated by our counterparties?* Without such a threshold, any definition of transition finance is rendered meaningless. With a threshold, firms then fall within a regime of monitoring. Those unable to deliver on their minimum rate of change over a pre-specified period must eventually fall into a red category, with appropriate adjustments in risk premia and capital allocation.

3. Counting Transition Finance

Having defined transition finance, the inevitable next question is, what's the size of the prize? We know that aggregate funding to high-carbon firms is today many times greater than funding to low-carbon firms. What we don't know is what percentage of high-carbon firms are willing and able to embark on the changes that decarbonization will require.

The Transitions Pathways Initiative (TPI) sheds useful light on decarbonization efforts at the firm/sector level. Out of a sample of 238 companies with carbon performance assessment, they find only 13% of companies' carbon performance is aligned with the "below 2 degrees C" target, with an additional 5% "at 2 degrees C". That leaves 82% of the companies missing the cut-off. The two industries with the lowest alignment are oil & gas and airlines (Dietz et al., 2020).

We contend that transition finance should include companies that are not currently aligned with the goals of the Paris Agreement. The key criteria for the capital provider would be compliance with a minimum rate of carbon emissions reduction (or carbon-equivalent emissions reduction). As described previously, the threshold would be established by the capital provider and be specific to the company and its industry.

3.1 What's the size of this prospective investment universe?

As a nascent field, there are currently no estimates of the size of the transition finance market. Our starting point is, therefore, to build up from active work on sizing climate finance.

Several institutions currently collect data related to climate-sensitive financing worldwide. The common focus is on the primary investment flows to assets and activities. The methodologies vary, as do the instruments tracked and funding sources being counted. The starting point for many surveys is capital flows to renewable energies, which is tracked by the International Energy Agency (IEA), the Climate Policy Initiative (CPI), and Bloomberg New Energy Finance (BNEF), among others.

Energy efficiency has received increasing attention in the climate debate. Counting it is not straightforward and methodologies for tracking it differ. Of relevance to transition finance will be how to categorize best-in-class efficiency investments by worst-in-class polluting firms. Securities issuances of this nature have generally been rejected by the green finance market (NatWest, 2019).

In its latest biennial report (2018), the UNFCCC puts many pieces of the mosaic together. They arrived at USD 681 billion as an estimate of climate finance flows in 2016. An increase of 17% between 2014 and 2016 was mostly attributable to an increase in private sector funding in energy efficiency and renewable energy. In Table 1, we have compiled these estimates for the past 5 years. As an example of the limitations of historical measures, there have been rapid changes in the low-carbon transport market (e.g. electric vehicles) over the past two years. The figures below, therefore, significantly understate the present situation.

	2015	2016	2017	2018	2019
	USD billion				
UNFCCC/climate finance	680	681			
CPI/climate finance	472	455	612	546	
UNFCCC/renewable	321	270			
IEA/renewables	317	321	319	317	319
BNEF/renewables	333	307	352	323	334
CPI/renewables	321	269	350	322	
UNFCCC/energy efficiency	234	258			
IEA/energy efficiency	239	265	251	252	249
CPI/energy efficiency	26	33	36	32	
UNFCCC/low-carbon transport	78	106			
CPI/low-carbon transport	78	106	159	122	

Table 1 Estimates of climate finance and components

UNFCCC biennial assessment report is not yet available for 2017-2018 (expected publication date late 2020). Based on our review of the component data, we would expect the current number to come in at around **USD 800 billion**. The figure includes investments in renewables, energy efficiency, sustainable transport, as well as development finance. While capturing a broad set of investment activities, it is most likely still a vast underestimate of the broader universe for transition finance.

3.2 How Could These Numbers Be Improved?

There's been significant progress in both directing funds towards climate change solutions and accounting for the sources and uses of such funds. However, there remains an unmet objective of measuring all sources of finance contributing to Article 2.1c of the Paris Agreement. What activities might be included in transition finance that are not included in climate finance? Candidates include:

- “Mild” energy efficiency (i.e. less than best available technology)
- Gas pipelines, particularly those suitable as carriers for synthetic methane and blended hydrogen
- Land-use changes, including improved agricultural practices and biotic conservation
- Low-carbon food supply, such as plant/insect-based proteins
- Some information and communications technologies (ICT)
- Fossil fuel infrastructure decommissioning costs

Recent studies have hinted at the scale of investment opportunities that lie beyond the conventional domains of renewables, energy efficiency, and low-carbon transport. Technologies such as 3D printing, nanotechnology, and autonomous vehicles gain little attention in the climate debate but are amongst a set of breakthrough technologies that could knock oil demand by a third in the next two decades (2DII, 2018). Redirecting existing funding in global food supply towards regenerative agriculture, reducing waste, and healthier diets are multi-trillion-dollar investment opportunities that would have significant climate benefits (FOLU, 2019). Transition finance must find a way to accommodate the incorporation of new technologies that may not appear green themselves but become part of a systemic innovation process within firms that lead to decarbonization. We synthesize our view on the numbers in Figure 4, below.



Figure 4 Sizing Transition Finance

There is a huge gap between the financing flowing to green assets today and the capital that is required for climate stabilization. This gap, of roughly \$2.7 trillion per annum, will not be closed anytime soon. We see transition finance as an immediate opportunity to bridge the divide that results from a binary view on what's good or bad from a climate perspective.

Transition finance could play an important role in engaging more companies in the climate challenge. By explicitly welcoming the decarbonization effort of the heavy carbon emitters – even where those gains may initially seem paltry – there is the potential to create broad-based awareness of the need for deeper cuts into our carbon-based energy system. By fostering inclusion rather than exclusion, it could lay the groundwork for a global financial system that is as responsive to changes in greenhouse gas emissions as it is to changes in profit. Not all firms can go green, but they can all get engaged in transition.

Many firms, both in developed and emerging markets, have little impetus for action on greenhouse gas emissions. Financial institutions have a role to play in providing these companies with financial tools for achieving their climate and environmental objectives. But they do not have the power to change the prevailing logic of business, which remains tethered to profit maximization as an objective function and massively dependent on fossil fuels. Banks, asset managers, and other actors in the financial system can signal, prod, and poke. But ultimately it will be up to governments to push. In cases where they do not, it would be naïve to think that financial institutions will take up that responsibility unilaterally.

4. Recommendations to Move the Market Forward

There is no shortage of work required to realize the potential of transition finance to initiate global decarbonization efforts. First and foremost, there is a need for more education about the urgency of our planetary problem and possible transition pathways. Moving on from basic awareness towards action, the often-cited roadblock concerns data. Without accurate, timely and verifiable data, it is impossible for market practitioners to go about their job of assessing and pricing risk and funnelling capital to its optimal use.

The recommendation of the Task Force on Climate-Related Financial Disclosure (TCFD) served as a tipping point in the debate about climate risks and firm-level disclosures. Although still voluntary in most jurisdictions, the debate is quickly shifting from whether to report to how to report on climate-related financial risks. Mandatory TCFD reporting will prove disappointing if financial metrics do not quickly emerge that provide reliable, rule-of-thumb indicators to investors. It's not the volume of data that matters, but the right kind of data.

Many initiatives are rightly focused on a more accurate accounting of Scope 1, 2, and 3 emissions data. But there may be even greater mileage to be gained from improving ordinary financial statements. Clear segment reporting and asset-level breakdown of new capital expenditures would provide investors with better leading indicators of company intentions: how much Capex is spent on green solution, GHG intensive technologies or energy efficiency. It's a challenge for ordinary accountants as much as climate specialists. The first generation of voluntary TCFD reports can stretch to 100 pages or more. As the adage goes, I would have written you a shorter letter, but I didn't have the time.

Disclosure initiatives

CDP	Carbon Disclosure Project (CDP) works to provide a climate disclosure system and building blocks for the TCFD. CDP gathers information on climate risks and low carbon opportunities from the largest companies on behalf of institutional investors. They provide self-reported and estimated Scope 1, 2, and 3 emissions for over 5000 companies. Bottom-up modelled estimation is based on the combining of physical activity indicators (tons, barrels, kilometers, etc.) and their associated emission factors.
GRI	GRI is an international independent standards organization that helps businesses, governments, and other organizations understand and communicate their impact on issues such as climate change, human rights, and corruption (GRI, 2020). The GRI Sustainability Reporting Standards were created in 1997, making them the first and widely adopted global standards for sustainability reporting. For example, 93% of the world's largest 250 corporations report on their sustainability performance.
PCAF	PCAF is a global partnership of financial institutions that work together to develop and implement a harmonized approach to assess and disclose the greenhouse gas (GHG) emissions associated with their loans and investments.
SASB	Sustainability Accounting Standards Board (SASB, 2017) is an independent, non-profit organization. SASB's mission is to develop and disseminate sustainability accounting standards that help public corporations disclose material and useful information to investors. They employ evidence-based research and stakeholder participation.
TPI	TPI is a global, asset-owner led initiative which assesses companies' preparedness for the energy transition. TPI assesses companies in two ways. First, it looks at the management quality, i.e. companies' governance and management of their carbon emissions and risks and opportunities related to the low-carbon transition. Second, the carbon performance is evaluated, i.e. quantitative benchmarking of companies' emissions pathways against the 2015 Paris Agreement goals. TPI incorporated TCFD recommendations and it currently covers 332 corporations worldwide.
PRI	An UN-supported investor network of investors working to implement its six principles related to environmental, social, and corporate governance issues into investment practices across asset classes.

Better disclosure and consistency of data focused on the items that matter from a financial risk perspective will unlock the application of a new set of analytical tools. Methods for machine learning (ML) and artificial intelligence (AI) promise new insights, but models require high-quality labelled data to learn. Efforts are ongoing to apply natural language processing to both structured (e.g. TCFD & SASB) and unstructured datasets (e.g. press releases & social media).

Finance practitioners would benefit from better knowledge of the potential for machine learning (ML) to shape investment criteria. For example, the OECD (Pincet, Okabe, & Pawelczyk, 2019) provides an example of how to implement a supervised ML approach to perform “Multi-label Short Text Classification” to track financial flows towards specific Sustainable Development Goals (SDGs). The same could be applied to climate. There are many ways for sustainable finance practitioners to collaborate with AI/ML experts to streamline the process of tracking transition finance.

Prompted in part by their regulators, many investors are now asking for more climate-related financial data from the companies they invest in. As technological and policy developments crystalize, this information will not just help manage risks, it will help catalyze a broader energy transition. Where investor questions go, one’s corporate strategy tends to follow.

Investors can be constructive partners with governments and civil society by setting annual transition targets for industries, particularly for those with a poor starting point. Some may initially see these thresholds as too lenient. But at this stage, it would be far better to bring more firms into the fold than continue to see a “use of proceeds” model for green finance to create islands of virtue amidst a great sea of more ambiguous economic activity.

5. Summary

This report has defined transition finance as the capital required to move firms towards improved carbon efficiency. We have not sought to define the minimum rate of change needed to delineate transition finance from those capital flows which will be stranded in the world ahead. The task we set out for financial institutions of all sizes is to intelligently apply realistic scenarios to evaluate the future performance and exposures of their clients in a global economy increasingly shaped by climate-related risks.

Since the signing of the Paris Agreement, green finance has gained substantial traction. While new initiatives take root in financial centres around the world, the urgency of climate action requires that ambition moves up a gear. Transition finance has the potential to bring the highest greenhouse gas emitters in from the cold. At the lower bound, the transition finance market today is worth some USD 800 billion. It might be many times that size in the years ahead if a broader set of actors and activities are included.

Deep decarbonization of the global economy will not occur without the highest emitters (both companies and countries) getting on board. As of today, most are not welcome to shelter under the green umbrella. But while inclusiveness has its merits, so do standards. Adoption of transition finance principles within banks and other financial institutions must be accompanied by investment policies that answer the following key questions:

- 1. What is the minimum rate of reduction in carbon (or carbon-equivalent) emissions that will be adopted for individual client names?**
- 2. Are clients' capital expenditures sufficient to support the prescribed rate of emissions reduction?**
- 3. What will be the consequence for counterparties not meeting our minimum thresholds?**

While the need for more data from clients, it's better disclosure that will move the needle. Accurate accounting of a firm-level Scope 1, 2, and 3 emissions accompanied by well-categorized capital expenditure plans and clear segment reporting would be enough for most financial analysts to make their assessments. Like other forms of financial analysis, climate-related financial risks can be inferred from just a few items: revenues, capital expenditures, and operating expenditures. Better reporting by clients to their capital providers on financial data is possible.

We may soon reach the limit of the "use of proceeds" model to drive change in the financial system. Evaluating green activities separately from the performance of the entire firm (or even, the entire country) cannot continue indefinitely. With the right set of standards, transition finance can help fill the gaps in emerging investment taxonomies and leading to more precise boundaries between good, bad, and everything in-between.

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