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## EVALUATING THE POTENTIAL INFLUENCE OF SUSTAINABLE FINANCE ON CORPORATE VALUE CHAIN AND INDIRECT EMISSIONS

### Introduction

Corporate sustainability targets are typically set by a number of considerations. These include alignment with the Paris Agreement, materiality assessments, the company's track record, and the feasibility of improvement measures, including economic constraints or cost-benefit analyses, competition achievements, proven good business practices and technologies that deliver the anticipated improvements. These targets, once set, very often require external financing.

Depending on a business's structure, its environmental and social impacts may lie mainly in its operations or its corporate value chain. Naturally, it is the first step for many companies to target direct impacts in their operations. It is also acknowledged that developing a methodology to calculate indirect greenhouse gas emissions (Scope 3 emissions) or management system of indirect impacts associated with industry sections is still underway.

As sustainability is becoming more important in almost every boardroom, it is seemingly followed by companies taking action: building renewable energy sources, contracting power purchase agreements, minimizing packaging and waste, or reducing water and chemicals consumption. However, it is very often related only to their operational impact, and it is up to their upstream and downstream activities where the biggest impact occurs.

The financial industry is a great example of that: the impact of a financial institution is in its investments.

### Addressing indirect impacts of finance

In investments and finance, the notion of impact originally occurs in development finance (Kölbl J. et al., 2019). When evaluating impact, the World Bank suggests looking for "...causal effects of a program on an outcome of interest" (Gertler P. et al., 2011). A comprehensive approach in this area that considers both direct and indirect impacts and equitable action in mitigating and adapting to climate

change allows firms to achieve synergies with sustainable development goals.

According to the report by Capgemini and CDP "Scope 3 emissions in the Financial sector are estimated to be up to 700 times higher than scopes 1 & 2 combined" (Snodin J. & Vasconcelos B., 2023). A German study conducted by Jungmichel et al. (2017) analysed the environmental impacts of several businesses and found that most impacts can be found upstream. For example, in the electronics sector, 93% of land use, 60% of GHG emissions and 46% of the water consumption occurred outside the production plants.

Collecting all the data is challenging, especially if the supply chain is complex. Often new data sets and information are found during the process (Busch T. et al., 2022). This makes it difficult to assess company emission reduction targets and progress consistently and comparably. The most commonly used method to calculate Scope 3 emissions is spend-based assessment (CDP, 2023), but it is also the least accurate.

Kaplan, R. S., & Ramanna, K. in their article "Accounting for Climate Change (2021) argue that Scope 3 emissions are the fatal flaw in GHG reporting" as the difficulty of tracking emissions from multiple suppliers makes it impossible for a multinational company to estimate its Scope 3 numbers reliably. However, regardless of criticism of the accounting format, it will prevail as a growing number of companies estimate and report on Scope 3 emissions according to the GHG Protocol.

The lack of a common framework for direct and indirect impacts leads to contradictions: the pressure for a company to lower its direct carbon emissions and, for example, switch to electric vehicles, which would result in

a lower carbon footprint. But what about the sourcing of battery supply for the vehicle? Wouldn't it be, in fact, more sustainable to use the resources already bought by the company, as long as it is possible? These domino effects will remain unaccounted for without accounting for the indirect impacts.

In 2021 we could observe a rapid growth in financial sector commitments under the Glasgow Financial Alliance for Net Zero (GFANZ), established ahead of COP26. For example, GFANZ members now represent 87 percent of the balance sheet of the top 50 banks in Europe. (CDP, 2022) Independently from the private sector, central banks launched their Network for Greening the Financial System (NGFS). Development banks are also changing their investment policies: European Investment Bank, for instance, of making 50% of loans by 2025 to sustainable activities and mobilizing more capital for green investments. (Bolton P., Kacperczyk M., and Samama F., 2022)

However, if we define investor impact as the change that investor activities achieve in the company impact, we can see that it is only in its initial phase (Kölbel J., et al. 2019.) Portfolio managers can use two main methods of capital allocation to reduce the carbon footprint of their portfolios: exclude carbon emitters or invest in companies with low carbon emissions. This is a passive approach that does not take into account that impact is fundamentally about change. Even though we can observe a very dynamic change in the sustainable finance area, a limited amount of literature links finance and sustainability transition. Thus far, according to the research done by Alankar A. and Scholes M. (2022), the successes of their efforts are hard to measure.

## Capital allocation

The carbon footprint of an investor's portfolio is simply calculated as companies' emissions multiplied by the corresponding shares of stocks in the portfolio. (Bolton P., Kacperczyk M., and Samama F., 2022) Investors wanting to improve their carbon score may invest in companies with a lower environmental footprint or positive impact by providing them with capital on concessionary terms.

Indirectly, investors can alter financing conditions and affect the prices of a company's financial assets for the entire market. In this way, capital allocation not only creates managerial stimulus but also changes the cost at which companies raise funds. (Kölbel et al., 2019) However, there is only little empirical evidence that capital

In "Too Risky – The Role of Finance as a Driver of Sustainability Transition" (2022) Nykvist B. and Maltais A. predict that this may be due to the largely sector-agnostic nature of finance – meaning that the focus is on capital, risks and return on investment, not on the side effects of investments done. The same basic financing sources and private and public capital mechanisms are applied no matter what sectors or activities are financed. One example of that is specifically low carbon innovation: it requires a changing financing mix due to the natural progression in risk profile. According to the authors, sustainable finance happens naturally because this type of energy source becomes a bigger part of the total energy mix, hence total investment opportunities. To put it simply, to reduce risk associated with the energy sector, your portfolio should include diversified sources of energy.

The subject of investors' impact on the sustainability actions of companies touches upon a quite universal question: to what extent do investors' decisions influence the course of the real economy in general? In the article "Can Sustainable Investing Save the World? Reviewing the Mechanisms of Investor Impact" Julian F. Kölbel, Florian Heeb, Falko Paetzold and Timo Busch give an example of a company that manufactures solar panels. If one solar panel produced by this company avoids 3 tons of emissions, then investor activity can be measured in increased production of these solar panels. If, as a result of the investment, a company produces 10 additional solar panels, then the investors impact is 30 tons of avoided emissions – investors' capital allocation achieves this influence. Alternatively, investors can convince the company to improve the quality of company activity by, let's say, an R&D project that results in increasing the carbon emissions avoided per panel by X%. This influence will be achieved by stakeholder intervention.

allocation can enhance the growth of sustainable companies. According to Kölbel et al. (2019), "*capital allocation is more likely to affect growth for young, small firms in immature markets than for large, established firms in mature financial markets.*" A good illustration of that case in point is the February 2023 announcement by BP. BP announced it would delay its near-term commitment to reduce oil and gas. The target of 40% by 2030 was changed to 25%. Despite the criticism and some reputational damage (although as an oil and gas company, there is only so much to lose in this aspect), BP has suffered no negative financial effects from this decision (Aldy J.E., et al. 2023).

## Carbon reduction trajectories: net-zero carbon portfolio alignment

The most important category connected to financial institutions is Category 15: Investments. It is available for investors and companies that provide financial services. This category is designed primarily for financial institutions and is accompanied by Financial Sector Science-Based Targets Guidance. (SBTi, 2022b)

Emissions are like overlapping circles: Scope 3 emissions of one company are made of their suppliers' 1 & 2 emissions. In the case of financial institutions, the rule is very similar. As per the Climate Report of ING: "Our estimations were performed using PCAF compliant methodologies and cover 94.7% of lending activities covered by the PCAF methodology, including both wholesale and retail banking at year-end 2021. **This resulted in an estimate of 56 million tons of CO<sub>2</sub>e, including our clients' scope 1 and 2 emissions**" (ING, 2022). This means that FIs may have more impact directly talking to big corporate suppliers than trying to impact Scope 3 of the corporates themselves.

As stated in a paper by Bolton P., Kacperczyk M., and Samama F. (2022) "Net-zero carbon portfolio alignment" there are different ways of reaching carbon neutrality for investment portfolios. Researchers took 2021 as a base (with a carbon budget of 268.5 GtCO<sub>2</sub>e). With the geometrical emission reduction rate, the path can be either an immediate 25%, followed by an 85% decrease, or a constant annual 10% reduction. In the case of the linear approach, the pathway can be either a 25% initial reduction, followed by an annual 3.2% reduction, or a constant of 4.6%. As the base year for these calculations was 2021, portfolios currently have to decarbonize at a higher speed to reach the goal as the carbon budget is shrinking year-on-year. The time constraint is the key variable in this calculation.

### Managed phase-out

Another interesting approach is managed phase-out: an early retirement of high-emitting assets that pose climate and financial risks. However, as mentioned before, while withdrawal can encourage decarbonization it can also have unintended consequences. A responsible approach of committed financial institutions would be to manage the GHG emissions from their portfolios, not pass them on to someone else (GFANZ, 2022c).

There are many ways through which financial institutions can be involved in such activities, and those can be done through various financial instruments such as

sustainability-linked loans, bonds, securitization, reverse auctions and many others. BnetzA (German Federal Network Agency), for example, hosted a reverse auction for coal plant owners to close their capacity. Asian Development Bank created a blended coal-reduction fund to purchase and manage coal assets. "The mechanism was created in partnership with Prudential, Citi, HSBC, and Blackrock Real Assets. The group plans to create public private partnerships to buy out coal plants and wind them down within 15 years, far sooner than their usual life expectancy, giving workers time to retire or find new jobs and allowing countries to shift to renewable energy sources" (GFANZ, 2022c).

## Sustainability-linked financial instruments

Value-based financial institutions prove that virtually any financial instrument can have sustainability-linked characteristics. Specifically, sustainability-linked, climate or green bonds have been gaining traction. Despite their growth in popularity, however, there is a lack of theoretical and empirical understanding of the role of green bonds in corporate transition to carbon neutrality. Indeed, how transition finance mechanisms such as green bonds connect with corporate climate action is under-researched (Tuhkanen H., Vulturius G., 2021). Specifically, little is known about the link between green bonds and corporate climate targets to reduce emissions. Moreover, they are currently a very small corner of the market, representing just 4% of the \$6.4 trillion of issuance to date (Godemer, M., 2023).

If we go deeper and want to understand green bonds' impact on Scope 3 emissions, the connection is even more difficult to find. A study by Tuhkanen H. and Vulturius G. (2021) that looked at the 20 largest European corporate green bonds in terms of issuance through 2018 shows that only five out of these 20 companies had absolute emission reduction targets in Scope 3. Notably, almost all reported investments in this study were related to climate change mitigation. For most of the companies in this study, the bond was a source of investment into direct operations with eleven out of twenty issuing companies coming from the energy sector. Investments into projects that support climate change adaptation, circular economy, biodiversity conservation or sustainable resource management and land use are missing. The authors of the research argued that if green bonds were linked to science-based targets and conducted transparent impact reporting, they could be a tool for transition. However, the outcomes mentioned above show that this is still not common even in leading green bond markets.

Several issuers, including H&M (retail) or Tesco (food retail), have linked their issuances to science-based targets (Vulturius G., Maltais A., Forsbacka K., 2022). Tesco linked their sustainability-linked bond to Scope 1 & 2 emissions, while H&M linked 3 KPIs: share of recycled materials used in commercial goods, % of absolute reduction in Scope 1 & 2 and % of absolute reduction in Scope 3 (both by 56%).

Interestingly, in the second party opinion by S&P Global first two KPIs are marked as “aligned”, while the third KPI (Scope 3) is marked as a “strong” one, which means this one is the most ambitious: “Nearly all (99%) of H&M’s emissions stem from its vast supply chain. This is arguably one of the most relevant issues for the industry and is regarded as such in the company’s materiality assessment. We view the inclusion of scope 3 emissions as a relative strength of the framework, given their materiality in the industry.” (S&P Global, 2023) However, the assessment mentions that there is limited visibility as to how the company plans to decrease Scope 3 emissions in raw materials sourcing. In view of S&P, this is a limitation of the bond.

According to the data provided by BloombergNef, around 69% of sustainability-linked bonds issued are tied to GHG emission reduction targets (\$164.8 billion) with increases in renewable energy capacity and use as second (\$26.7 billion). Just 21 of the largest SLBs have 40 basis points or more, which indicates that the impact of these bonds is negatable (Godemer M., 2023).

In conclusion, assessing if “climate”, “green” or “sustainability” – linked bonds can have long-standing impact on Scope 3 emissions is very difficult. As this is a developing instrument with shortcomings in post-issuance reporting, this might change as markets and regulators will increase their expectations towards these instruments. Very similar conclusions can be drawn out of the whole variety of other financial instruments used – all of them can have an impact on emissions, but they won’t until they are used at scale in a mix (as there is no one-size-fits-all solution) and with correct procedures in place to avoid greenwashing. Thus, what is required is a better understanding of the contribution of sustainable finance instruments to the transition of the real economy (Vulturius G., Maltais A., Forsbacka K., 2022).

### **Nature-based solutions investments**

One element of the climate puzzle is to invest in businesses to lower their impact on the environment through decarbonization activities, and the other is to find a way to invest in nature. As such, the public sector plays a fundamental role in creating opportunities and demand

for investment in nature-based investments, defined as “actions to protect, sustainably manage, and restore natural or modified ecosystems, that address societal challenges effectively and adaptively, simultaneously providing human well-being and biodiversity benefits.” (International Union for the Conservation of Nature, 2016) For the private sector, it can also pose an opportunity through additional sources of revenue (United Nations Environment Programme, 2021). Nature-based solutions (NbS) are not climate finance; they have smaller scale and smaller private capital flows.

Although the NbS nomenclature is present in the United Nations, IPBES, G20 and EU documents, the methodology behind tracking and reporting these investments is inconsistent. The UNEP report from 2021 mentioned that the world is currently investing around \$133 billion in NbS, out of which the private sector contributes \$18 billion per year through investments in supply chains, which include forest products and fisheries seafood, biodiversity offsets, impact investments, NGOs, philanthropy and voluntary carbon markets.

For businesses, NbS provide risk mitigation services, new financial products, and identification of new business opportunities. “Several larger European ethical banks, such as Triodos and GLS-Bank, have introduced sustainability funds, socially and environmentally targeted crowdfunding investment funds, and climate bonds. In 2020, Triodos raised resources, alongside the UK government, trusts and private foundations, to finance the restoration of the Caen wetlands in Devon, for improvements in the natural flood management system in the Wyre catchment in Lancashire, and the restoration and conservation of peatlands in the Pennines” (UNEP, 2021).

Although NbS is not directly (or only) targeted at emissions, it addresses several goals simultaneously and could have direct effects on business emissions specifically in Scope 3 as the investments made are mainly in the supply chain and insetting and offsetting practices. A report “Catalysing Finance and Insurance for Nature-based Solutions. A collection of case studies from around the world” (2023) presents cases of concessional loans, profit-sharing loans, debt, equity, convertible debt loans, parametric insurance, gridded parametric insurance, and indemnity products – each one of them adapted to specific circumstances.

One example is a cooperation of Acorn – a Rabobank-created platform for agroforestry-derived carbon credits and Karagwe Development and Relief Services (Kaderes) – a Tanzania-based agroforestry NGO. In a snapshot, Kaderes helped a group of smallholder farmers transition

from cultivated land to agroforestry systems, and the resulting carbon credits were sold through Acorn. Kaderes received a loan from Rabobank and Achmea Foundation to finance the onboarding of farmers onto the project. Kaderes withholds part of the revenue from carbon credits to repay the loan. The program covered 25,200 ha of cultivated land.

The majority of nature-based investment initiatives happen outside of indirect greenhouse gas emissions of

## Shareholder engagement

Shareholder engagement, contrary to capital allocation, is focused on the intended change of companies' ESG practices. These include the right to vote, discussions during informal meetings with management and involvement in the criticism of corporate practices.

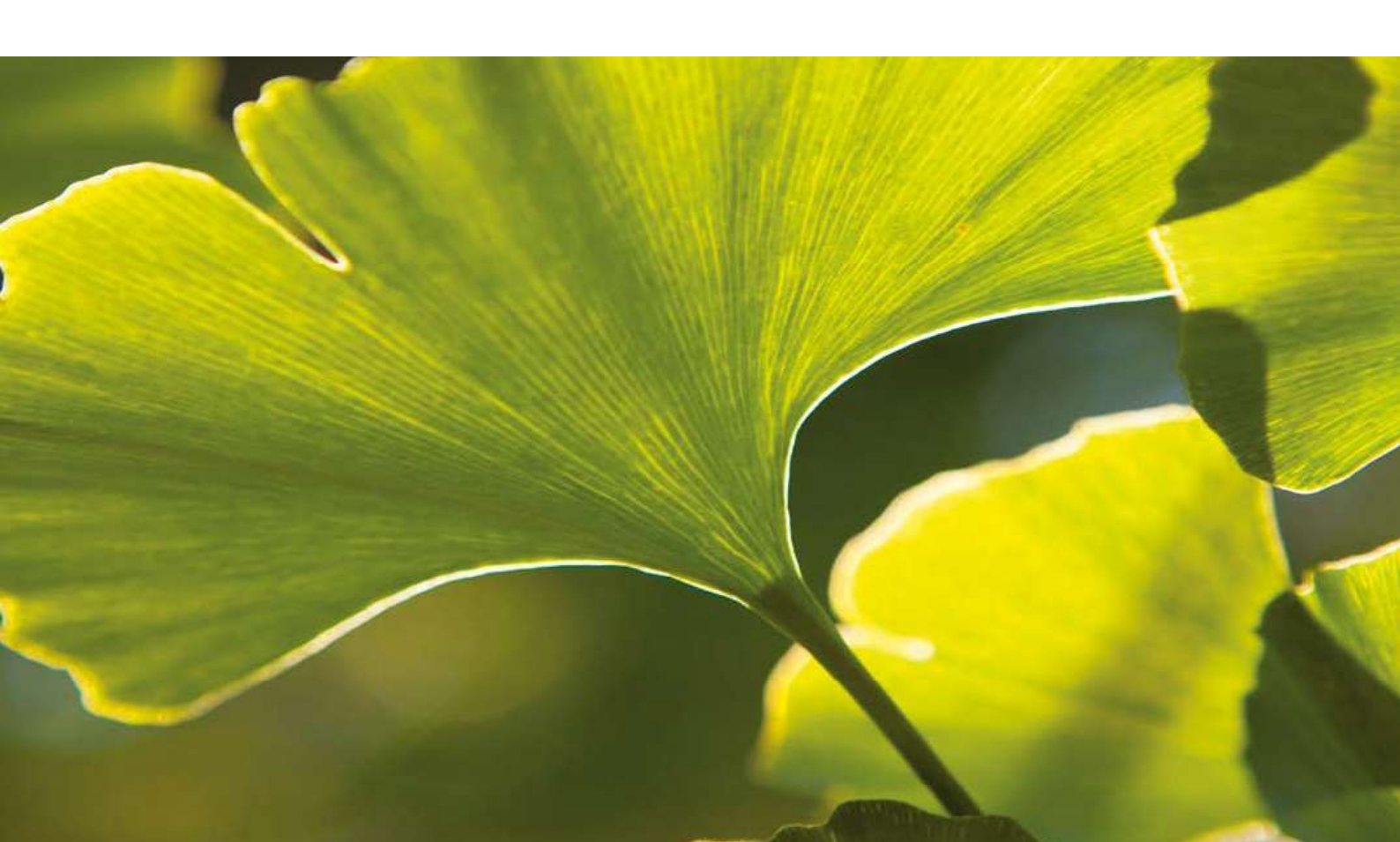
A report by GFANZ, "Expectations for Real Economy Transition Plans" from September 2022 provides several examples of how GFANZ members introduce shareholder engagement. As an example, La Banque Postale has a voting policy, which includes an assessment of companies' real-economy transition plans based on a framework built on its climate policies, the CA100+ benchmark, and the ACT framework. Montaro Asset Management, which set out a 7% annual emission reduction target across all funds and a 50% reduction in emissions by 2030, uses two scoring mechanisms from MSCI to assist its assessment of companies' emission reduction targets and transition plans. To assess companies, MAM is conducting a long-term "Net Zero Engagement Project" in which it contacts companies from its list to encourage better disclosure and target setting.

Financial institutions need to be able to understand the overall level of ambition of the company and compare it to others. They are developing tools to do so effectively, but this comes at the cost of additional engagement. Net zero is rarely an exclusive metric, as the transition is linked to environmental, social and economic development.

specific companies; however, in the long term, such investments may have an impact on their value chain by delivering a bigger pool of potentially sustainably sourced materials or, allowing businesses to access credible carbon credits to offset indirect Scope 3 emissions. More research is required to understand further if nature-based investments can be connected to corporations' carbon insetting projects.

ING, which offers sustainability-linked loans based on the company's ability to improve the traceability of raw materials in the value chain and to protect biodiversity. ING gave the Royal Friesland Campina (RFC), one of the world's largest dairy cooperatives, a €300 million sustainability-linked loan in March 2021 based on several climate-related criteria. (Friesland Campina, 2021) While the loan included provisions for GHG reductions, it also featured additional metrics related to value chain engagement and nature-based solutions. Friesland Campina committed to tracing raw materials such as palm oil, soy, and cocoa throughout its value chain. ING will lower interest rates on a €300 million sustainability-linked loan for each year it meets its targets (ING, 2021).

ING also offers a range of advisory services: "The Sustainable Finance team is part of Wholesale Banking and advises clients on translating their sustainability ambitions (including alignment to net-zero where applicable) into their financing, through sustainability-linked structures, providing green and social financing solutions, ESG rating advice, and other strategic ESG advice." (ING, 2022) Having such teams and transition plans allows financial institutions such as ING to create sustainability-linked products that are tailored to providing preferred terms for companies with credible transition plans and climate strategies.



## Conclusion

In an article entitled “*Is sustainable finance a dangerous placebo?*” by Heeb, F., Kölbel, J., Ramelli S. and Vasileva A. (2023) the researchers try to understand if sustainable finance, as a concept, crowds out more effective, policy-driven approach to address societal challenges (for example, adoption of a global carbon tax).

According to the outcomes, it does not – it resembles a placebo in the sense that people seem to overestimate its impact (respondents perceived investments in the climate fund to be significantly more impactful than investments in ten other holdings), but it does not change the fact that it can be and should be used as merely one of the tools to reach global net-zero. *“Although sustainable investing is a placebo if it fails to drive positive societal change, it does not appear to be a dangerous one in the sense of distracting people from also engaging on the political front. Of course, the likelihood of advancing climate regulation also depends on how sustainable finance is perceived by policymakers and regulators: as either a call for action or an outsourcing of their responsibilities. Our experiment informs them that, on average, voters do not consider sustainable finance a substitute for political action.”*

That, in fact, is a very important outcome. It will take many tools for the global economy to wean itself from fossil fuels, varying from business self-checking activities to strong legal regulations. The increasing number of major companies signing up with CDP and SBTi recently

signals a promising interest among corporate management in voluntary corporate emission goals. We can see that methodologies required to measure and report on Scope 3 emissions are getting more effective, and as more actors join forces for the correct data collection, they become more credible.

Hopefully, modern technologies in data analytics will help companies manage their Scope 3 impacts by offering powerful insight into complex, global value chains and will help reduce emissions in new ways. Only from there on will companies be able to address them comprehensively, according to the saying, *“Only what is measured can be managed”*, and only after that part is coordinated will we be able to research the relationship between finance and Scope 3 emissions thoroughly. In the meantime, the activities in this area will remain explorative. While ways of managing indirect impact upstream and downstream innovations are developed, the sustainable finance instruments will simply have to adapt to these new solutions and develop frameworks supporting new projects.

The learning curve is coming up for companies when it comes to addressing Scope 3 emissions – there is not one ‘solution’ to the problem, and there is not one handbook to use with financial instruments attached. Hopefully, the acceleration in this territory will allow businesses to scale up the most effective solutions at the pace required to combat the most extreme effects of climate change.

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