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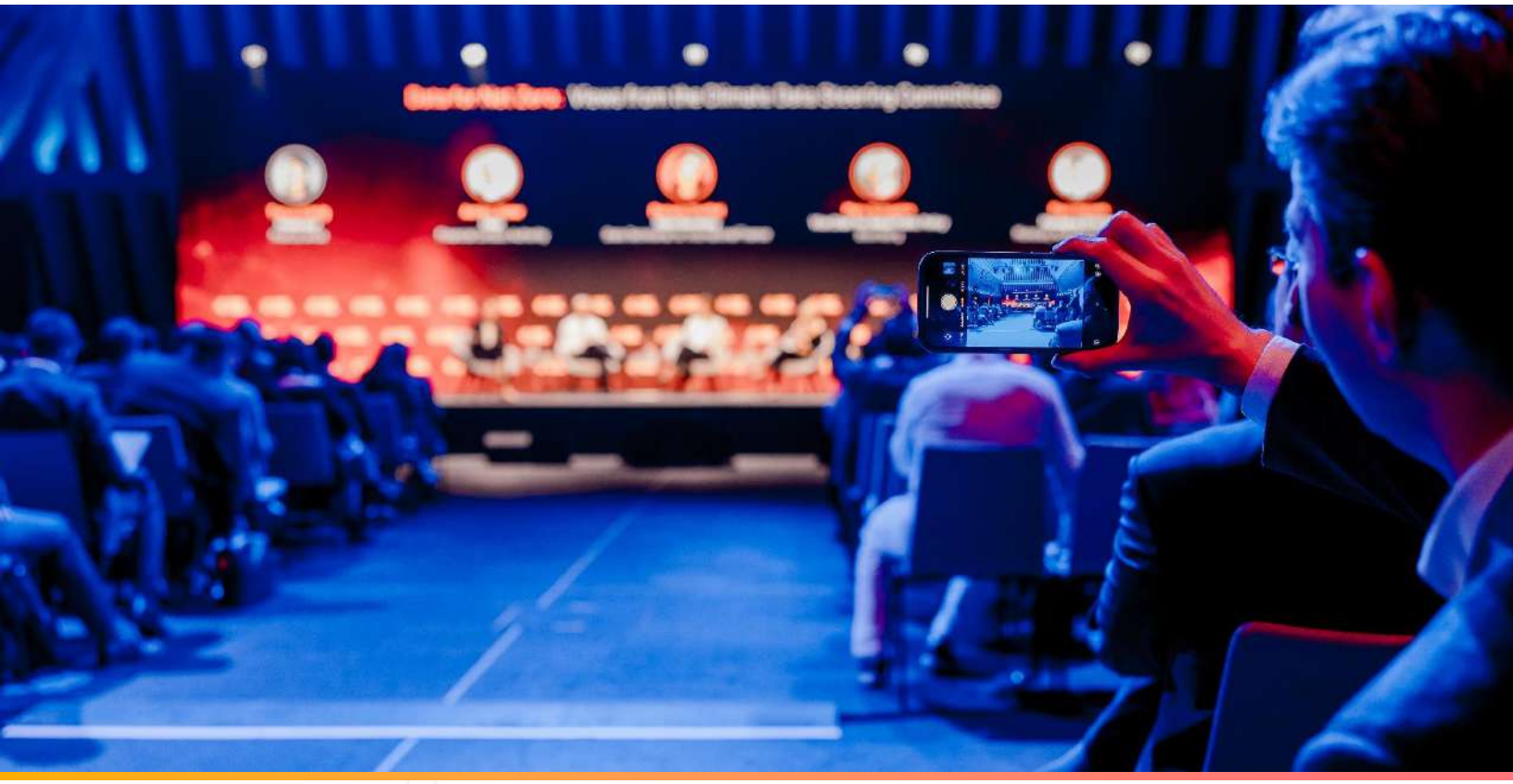
Sustainability & net zero: collaboration to drive measurable progress

Insights from the

POINT ZERO FORUM™ 26-28 JUN 2023



Acknowledgments

KPMG in Singapore and Elevandi would like to thank all those who contributed to this publication. From KPMG, we extend our thanks to Antony Ruddenklau, Aymeric Salley, Henry Ng, Maya Kostina, Dennis Kiratli, Bastijan Pauly, Aaron Koh, Andy Zhang, Daniel Yi, Anukriti Verma. From Elevandi, we extend our thanks to Rafat Kapadia.

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Elevandi is set up by the Monetary Authority of Singapore to foster an open dialogue between the public and private sectors to advance FinTech in the digital economy. Elevandi works closely with governments, founders, investors, and corporate leaders to drive collaboration, education, and new sources of value at the industry and national levels. Elevandi's initiatives have convened over 300,000 people to drive the growth of FinTech through events, closed-door roundtables, investor programmes, educational initiatives, and research. A flagship product is the Singapore FinTech Festival alongside fast-rising platforms, including the World FinTech Festival, Point Zero Forum, and the recently launched Elevandi Insights Forum.

Foreword

Climate change is the greatest existential challenge of our times, it demands urgent action. Progress toward Paris Climate Agreement targets has been slow so far and accelerating the pace will be our main preoccupation for the next 20 years. More must be done, faster. We need collective effort, innovative solutions, and accountability to safeguard our survival and build a sustainable future.

Transitioning to a low-carbon economy necessitates prioritising key areas. Reliable data availability aids informed decision-making, redirecting public and private capital towards sustainable solutions is essential, establishing disclosure standards, regulations, and fostering collaboration ensure accountability, while leveraging artificial intelligence (AI), internet of things (IoT), and blockchain accelerates the transformation. In coming together and aligning our thinking, we can make better, data-driven decisions, mobilise financial resources, promote transparency, and harness advanced technologies to create a sustainable future.

The financial sector necessitates a fifth infrastructure layer to exchange environmental, social, and corporate governance (ESG) credentials, alongside identity, payment, data exchange, consent and authorisation. This shared utility will enhance transparency and reliability, empowering stakeholders to make informed decisions about sustainable investments and promote responsible practices in the global economy.

From 26 to 28 June 2023, Zurich became the hub where thousands of individuals converged. Among them finance professionals, technology experts, fintech entrepreneurs, policymakers, regulators, academics, inventors, and more. The second edition of this remarkable gathering aimed to tackle some of humanity's most pressing challenges. In this publication, KPMG in Singapore presents insightful perspectives on how the latest developments in Fintech can play a pivotal role in constructing a sustainable global economy and accelerate the transition to net zero. These insights were gleaned from esteemed speakers and panellists at Point Zero Forum 2023 (PZF), including leaders from financial institutions, regulators, technology providers, Fintech pioneers, and non-governmental organisations.

This publication is jointly produced by KPMG in Singapore and Elevandi. KPMG in Singapore is contributing to build and promote the Fintech ecosystem in Singapore and beyond and collaborated with Elevandi on a series of publications and conferences.

The authors and their teams would like to thank all the participants, speakers, sponsors, and partners who contributed to the resounding success of the second edition of PZF. This publication ignites collaboration between fintech and sustainability practitioners, empowering them to discover and implement fintech solutions for today's sustainability challenges. Together, let's drive real change, uniting communities and transforming the financial sector to address the biggest challenge of our times

Sopnendu Mohanty
Chief FinTech Officer, Monetary Authority of Singapore
Chairman of the Board, Elevandi

Antony Ruddenklau
Head of Financial Services, KPMG in Singapore
Global Head of Fintech, KPMG International
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Snapshots from **Point Zero Forum 2023**

Achieving net zero: the greatest existential challenge of our time

In the face of an existential challenge, the utmost priority lies in significantly and quickly reducing global emissions. Despite some advancements made post Paris Climate Agreement, there is a pressing need for accelerating and coordinating actions. Events such as the Point Zero Forum, which foster cross-border and cross-industry cooperation, are pivotal to drive concrete and immediate measures. The fate of our planet and the well-being of future generations hinge on our collective response.

A call for urgency

Over the past few years, many countries and territories have accelerated their response to climate change and rolled out sets of initiatives to facilitate a transition to a low-carbon economy. An example of such initiative was highlighted **by Karin Keller-Sutter, Switzerland's Federal Councillor & Head of the Federal Department of Finance** (pictured right)**,** in her welcome address to attendees of Point Zero Forum: "The Swiss climate scores are establishing best practice in transparency on the Paris Agreements financial investment decisions."

Nonetheless, global progress toward the Paris Agreement targets has been sluggish (see Exhibit 1), and global fossil CO2 emissions have rebounded post-Covid-19, aggravating the crisis. The focus for the next two decades will be the transition to a low carbon economy, breaking away from historical reliance on fossil fuels for economic growth.

Swift, decisive action is essential. Efforts must be ramped up to reduce emissions, embrace renewables, and adopt cutting-edge technologies. Collaboration among countries is crucial to drive meaningful change.

Inaction is no longer an option. We stand at a critical juncture, and only through collective action can the planet be protected for future generations, mitigating the worst impacts of climate change. Accelerating progress toward net zero is the pathway to a greener, more sustainable, and prosperous future.

A key role for the financial sector to play

"As we face growing risks of geopolitical and economic fragmentation, finance must remain the backbone of innovation, growth and development."

It is in these terms that **Heng Swee Keat, Singapore's Deputy Prime Minister and Coordinating Minister for Economic Policies,** set the tone for attendees and speakers of Point Zero Forum 2023. In the journey toward a sustainable future, the financial sector emerges as a linchpin in steering the global economy toward a low carbon trajectory. As the urgency to address climate change intensifies, the more pivotal the role the financial sector plays in aligning real economy incentives with the balancing act of achieving Net Zero emissions.

A notable trend gaining momentum is the proliferation of national carbon markets, as the benefits of such mechanisms become increasingly evident. These markets incentivise emission reductions and provide a scalable framework for companies to transit to low carbon practices. However, to effectively combat climate change, interoperability of platforms and cross-border collaboration will be crucial, ensuring seamless integration and fluidity of investments across international borders.

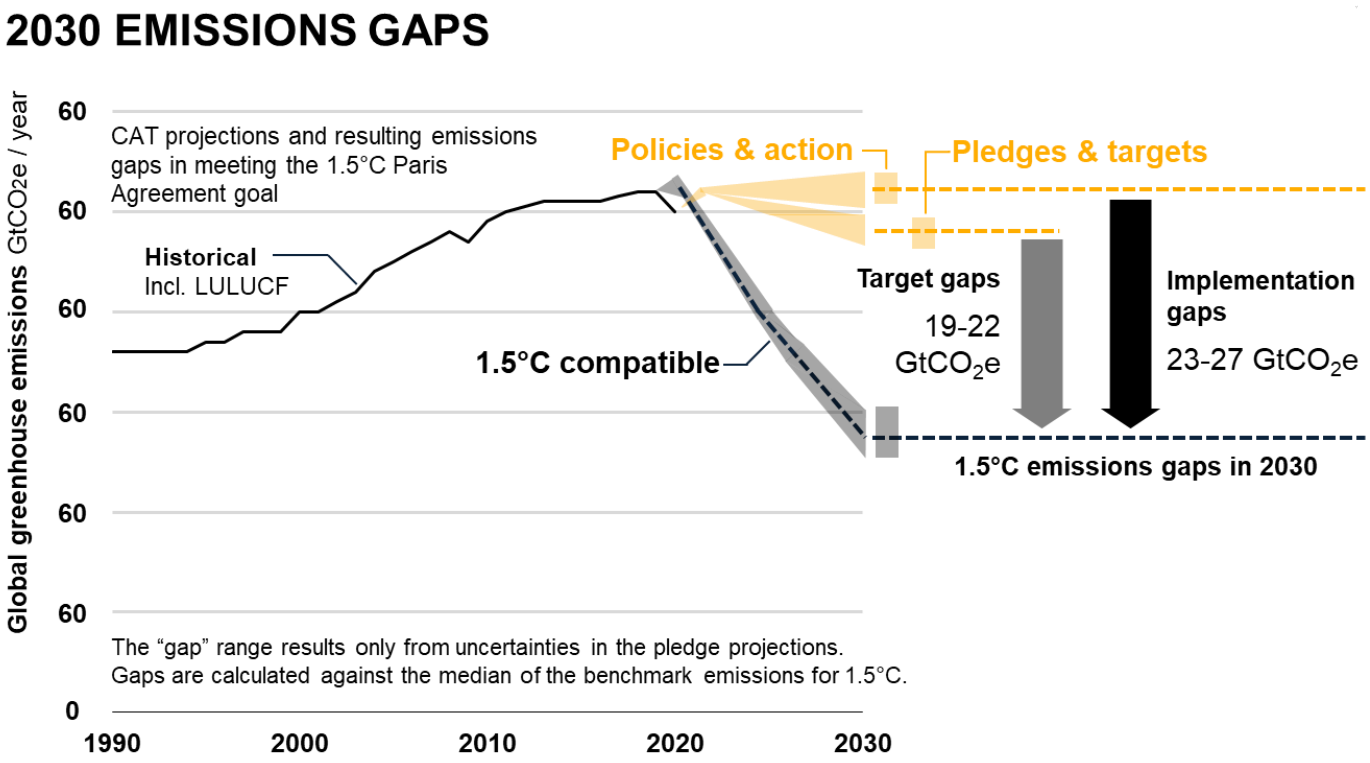
An integral driver behind the transition to a low carbon economy is the rise of sustainable investing. Investors' growing awareness of environmental, social, and governance (ESG) issues has fuelled demand for sustainable assets. By directing capital toward environmentally responsible projects, the financial sector can amplify the influence of sustainable investments, driving positive change across industries.

In this global effort, cross-border collaboration, and international events, such as the Point Zero Forum, play a vital role in accelerating momentum. These platforms facilitate knowledge exchange, promote best practices, and foster collective action among nations, businesses, and financial institutions, enhancing our collective impact and moving closer to a world where sustainability and prosperity go hand in hand.

The subsequent sections of this report will explore the key themes behind the required collective global actions and are organised as follows:

- The second section, coming next, examines prevailing data challenges and international initiatives that aim to streamline the sustainability reporting landscape.
- The third section discusses the pivotal role played by private and public capital in driving climate action.
- The fourth section addresses the current regulatory approaches to sustainability disclosures and noteworthy sustainability reporting trends among leading companies.
- The fifth section highlights the significance of emerging technologies in facilitating sustainability impact and provides recommendations for managing the associated risks effectively.

Exhibit 1: 2030 emissions gaps



Source: Climate Action Tracker (https://climateactiontracker.org/global/cat-emissions-gaps/

Data – the cornerstone of effective change

Stakeholders are increasingly calling for consistent, comparable, and reliable sustainability data to accurately price climate risks and effectively allocate capital. However, data issues persist. Finding consistency and comparability amid a patchwork of voluntary frameworks and standards has also proven to be a major challenge. Fortunately, international efforts are already in progress to tackle these obstacles by harmonising and streamlining the sustainability landscape, fostering greater coherence and clarity for all parties involved.

Increasingly interconnected climate risks

As climate change is inherently global in nature, its impact is extensive. Two main categories of risks emerge – first, physical risks, stemming from the direct impacts of climate change on infrastructure and supply chains, and second, transition risks associated with the shift towards a low-carbon economy through policy, legal, technology, and market changes.

Physical risks entail extreme weather events, chronic heatwaves, and rising sea levels. They impact investment activities by impairing the value of assets and increasing the cost of credit through higher risk premiums. The heightened risk exposure of insured physical assets and property also affects the insurance industry as it creates the need for increased playouts, potentially leading to higher insurance premiums or a lack of insurability. Such risks may force insurers to sell assets hastily to pay off claims, causing stress in the financial sector which could spill over to the broader economy.

Transition risks arise from the move towards a low-carbon economy. Examples include the implementation of a carbon tax, sustainability disclosure mandates, and the transition to renewable energies. With increasing

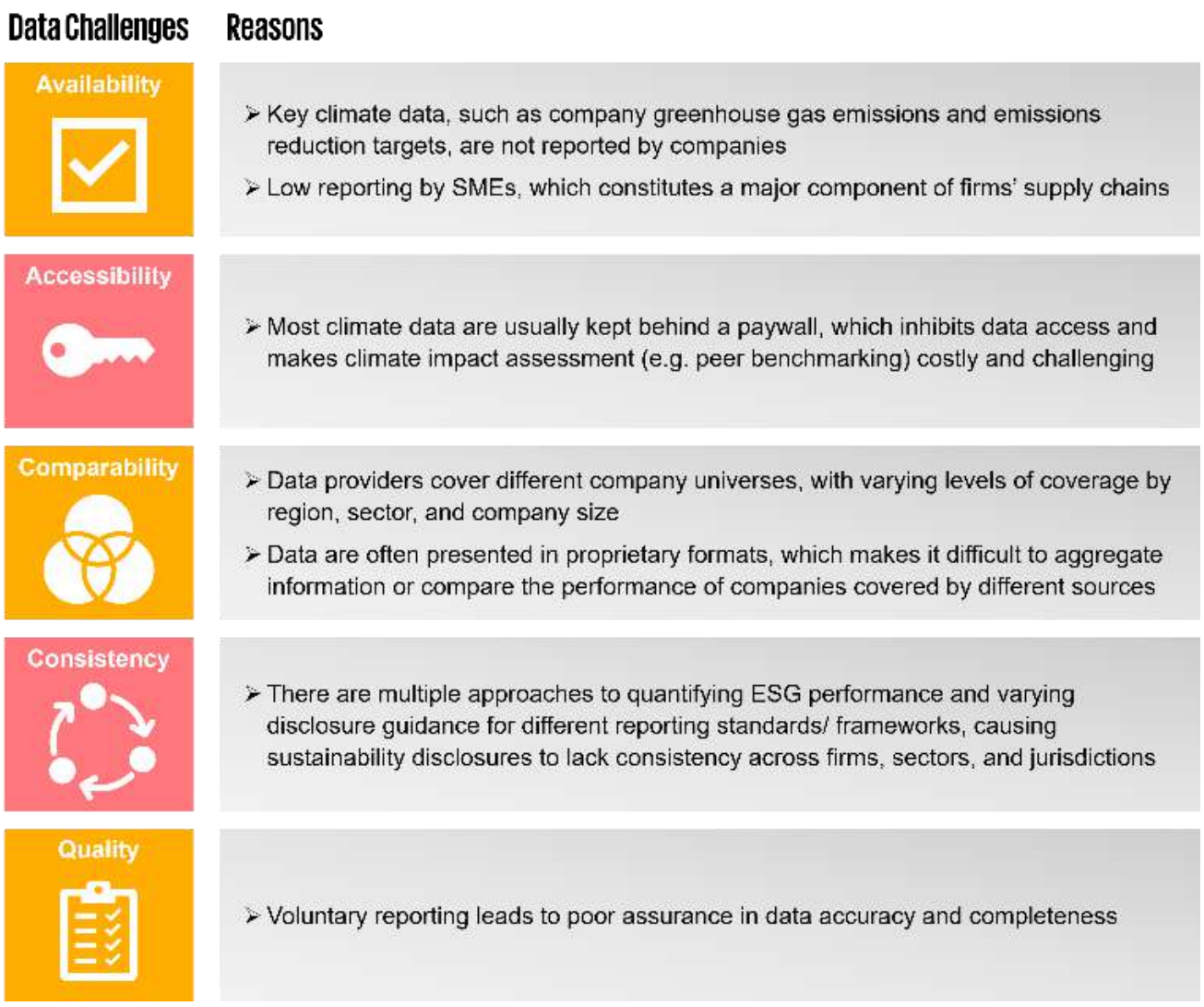
"Data will be made available to the public for all use cases at no charge, serving the purposes of all stakeholders, allowing NGOs and civil society to hold financial institutions and real economy companies accountable to the net-zero commitments they have made."

- Mary Schapiro, Chair of the CDSC

regulatory pressure on companies to disclose climate-related information, companies face greater risks of legal liability from failing to comply with regulatory requirements. Additionally, the use of emerging technologies to transition towards more energy-efficient systems also heightens technological and cybersecurity risks in areas such as system availability, disaster recovery, and data security and privacy.

Achieving effective monitoring and assessment of climate-related risks demands a robust, globally consistent, and granular data approach. Such data helps to quantify risks, capture variations in locations and supply chains, and reveal levels of exposures for financial firms and their counterparties. Armed with this information, market participants can make informed decisions to price, manage, and internalise climate-related risks more effectively, fostering greater resilience within the financial ecosystem.

Exhibit 2: Data challenges faced by companies in reporting



Source: KPMG in Singapore Research

Climate risk assessment needs data

Good, reliable data is foundational to combating climate change. However, organisations face numerous challenges in acquiring the data needed to understand their carbon footprint, set emissions reduction targets, and implement net-zero transition plans. Notably, lack of data availability, accessibility, comparability, consistency, and quality were highlighted during various discussions at the Point Zero Forum (Exhibit 2). These challenges run the risk of impeding the effective development of Net Zero strategies and the accurate assessment of global progress toward a Net Zero economy.

"We all have a mission to enhance the accessibility and quality of data. We want to explore standardization and interoperability."

- Anton Ruddenklau, Global Head of Fintech and Innovation, KPMG International and Head of Financial Services Advisory, KPMG in Singapore

International efforts in transforming the sustainability reporting landscape

Several international initiatives received the spotlight at Point Zero Forum 2023:

1. The International Sustainability Standards Board (ISSB) Sustainability Disclosure Standards

In a major step towards enhancing sustainability reporting, the ISSB has released its inaugural global Sustainability Disclosure Standards in June 2023. The Standards are built upon existing frameworks and standards like Global Reporting Initiative (GRI), Sustainability Accounting Standards Board (SASB), and Task Force on Climate-related Financial Disclosures (TCFD). They aim to establish a global baseline for corporate sustainability disclosures and improve the reliability, measurability, and comparability of sustainability data by simplifying the reporting process, harmonising diverse standards, and preventing duplicative reporting.

Initially, two standards have been published, covering General Requirements (S1) and Climate (S2) aspects, with more standards addressing additional themes and industries to be released subsequently. The standards will be effective from 1 January 2024. While the standards are not mandatory at present, their widespread international support, including backing by G7 and G20, is expected to drive rapid adoption across many jurisdictions.

2. The Net-Zero Data Public Utility (NZDPU)

The Climate Data Steering Committee (CDSC) was established to address the challenges associated with sustainability data. The CDSC proposed the creation of the NZDPU at COP27. This open and centralised data repository will enable stakeholders to access essential climate transition-related data, commitments, and progress of businesses and financial institutions towards net-zero goals.

As **Mary Schapiro, Chair of the CDSC** explained at the Point Zero Forum 2023: "The NZDPU is designed to be part of the United Nations Framework Convention on Climate Change's (UNFCCC's) Global Climate Action Portal to provide the data and transparency needed to facilitate the transition to net-zero. It will initially focus on Scope 1, 2, and 3 greenhouse gas emissions data, emissions reduction targets, and carbon credit data.

3. The Wider Collaborative ESG Data Landscape

As it stands today, the majority of climate and environmental data is only accessible through third-party data providers, resulting in fragmented and disparate collection of reported data. This creates challenges in aggregating and accessing decision-useful climate information. To address the demand for transparent, consistent, accurate, and comprehensive data, various interconnected collaborative climate data initiatives.

"Project Greenprint was set up as a digital infrastructure to help mobilize capital through data, monitor climate commitments made by financial institutions and corporates, and measure the impact of these climate actions against actual desired outcomes."

- Ravi Menon, Managing Director, Monetary Authority of Singapore

complementary to the NZDPU have emerged. These include:

- The World Bank Climate Action Data (CAD) Trust, an open-source metadata system leveraging blockchain technology to create a decentralised record of carbon market activity. Its primary objectives are to prevent double counting, enhance trust in carbon credit data, and promote transparency to boost confidence in carbon markets.
- The International Monetary Fund (IMF) Climate Change Indicators Dashboard, which publishes country-level data on emissions, environmental policies, sustainable finance, and climate risks.
- The Monetary Authority of Singapore (MAS) Project Greenprint, a collaborative data platform developed in conjunction with the industry which aims to streamline ESG reporting and enhance accessibility to essential sustainability data (Exhibit 4).

Important implications for the industry

As the impacts of climate change become more visible, the importance of conducting climate risk assessments and implementing appropriate climate mitigation or adaptation measures becomes increasingly critical. Reliable climate data is thus necessary for enabling effective decision-making across various sectors.

Platforms like the NZDPU provide a comprehensive and global repository of high-quality sustainability information to meet this demand.

The free accessibility of this data also encourages FinTech participation in developing products that enable climate transition efforts to be measured accurately, which then facilitates the engagement of capital providers to fund various climate transition initiatives.

Assisting Small and Medium-Sized Enterprises (SMEs)

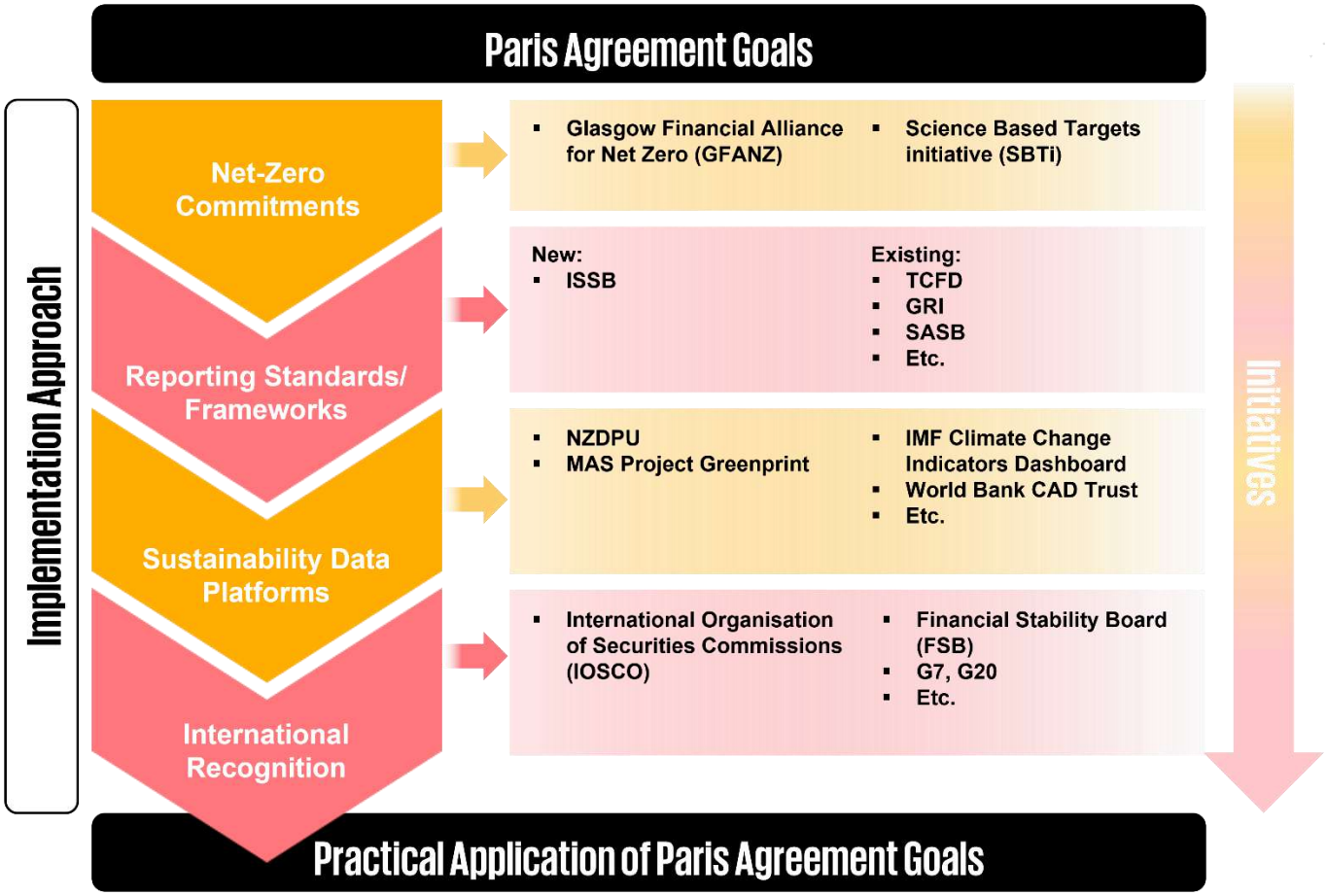
SMEs present a significant opportunity for ESG impact, accounting for 90 percent of businesses and over 50 percent of global employment[1]. However, they face numerous challenges in ESG implementation.

Limited financial resources and unclear reporting standards are common barriers to SMEs' adoption of sustainable practices. Complex reporting requirements, which are often designed for larger corporations, also create obstacles for SMEs, as they lack the capabilities to measure their ESG impact accurately. As a result, SME sustainability data are often lacking and widely inconsistent, which undermine global efforts in advancing sustainability goals.

Having an open platform like the NZDPU with harmonised reporting standards and a centralised register of sustainability data supports effective ESG implementation and progress measurement to ensure stakeholder accountability. SME data gaps can also be alleviated by leveraging corporate disclosures (which typically include SME data in their supply chain ecosystem), proxy data, and emerging technologies that help track sustainability performance.

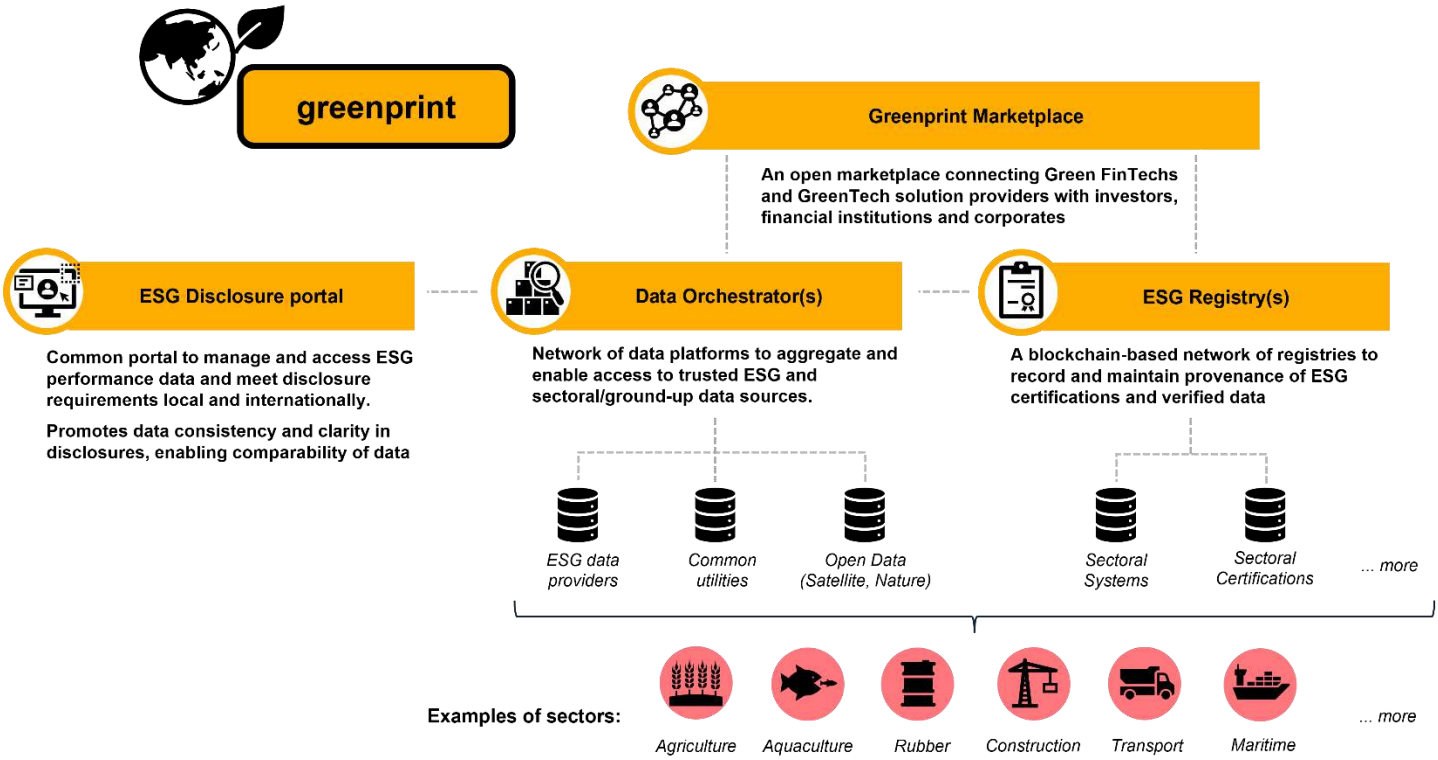
[1] 'Accountants and SMEs Creating a Sustainable World', ACCA (Nov 2021)

Exhibit 3: Practical implementation of the Paris Agreement goals in the economy



Source: Swiss Bankers Association (https://www.swissbanking.ch/en/news-and-positions/opinions/aligning-finance-flows-directly-with-the-paris-agreement-on-climate-change)

Exhibit 4: MAS Project Greenprint



Source: MAS (https://www.mas.gov.sg/development/fintech/green-fintech)

Mobilising untapped forms of capital

The temperature and adaptation goals of the Paris Climate Agreement remain a pressing challenge in the current state of climate finance. Despite the urgency, current climate finance falls short of the world's needs. To address the global climate finance gap effectively, supportive financial structures that combine both public and private capital are required. By leveraging the strengths of the public and private sectors, a more robust climate financing landscape can be cultivated, paving the way for transformative climate action.

Private capital is insufficient to meet climate transition needs

Private capital plays a pivotal role in driving climate transition. However, despite a rapid increase in private sector investments in recent years, the magnitude of climate finance required remains substantial. To achieve the temperature and adaptation goals outlined in the Paris Agreement, estimates suggest that annual global investments ranging from US$3 to $6 trillion per year until 2050 are required. Yet, current global climate finance stands at just around US$630 billion per year[2].

While there is a huge opportunity for private sector finance to contribute significantly to climate transition, it faces various constraints that hinder its deployment. Future policy uncertainty poses challenges for private capital, as regulatory frameworks and incentives can significantly impact investment decisions. Additionally, high costs associated with emerging climate technologies increase the cost of capital, making investments less attractive. Limited availability and quality of data further impede effective capital allocation and risk management. Moreover, institutional investors such as sovereign wealth funds, pensions, and endowments face fiduciary duty obligations, which may impose constraints on their investment decisions. These constraints include strict requirements on investment time horizons, risk-return objectives, and asset allocation.

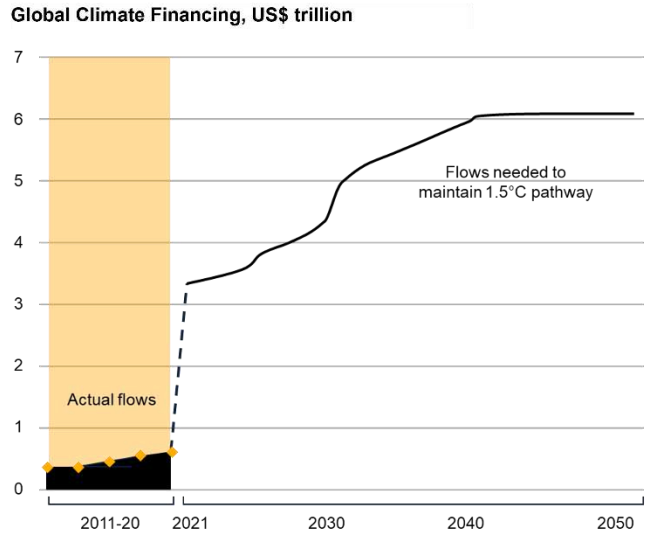
"The big pool which is available to finance net-zero transition and is still untapped is private wealth."

- Marco Bizzozero, Head of International & Member of the Executive Committee, iCapital

[2] 'Mobilising Private Climate Financing in Emerging Markets and Developing Economies' IMF (Jul 2022)

Despite the immense potential for private capital to be scaled up, these limitations need to be addressed to effectively mobilise private finance for climate action. One approach is by establishing supportive frameworks that help reduce policy uncertainty, facilitate technology cost reductions, improve data availability and quality, and align risk-return profiles with investor preferences.

Another way is to harness public financial resources to mitigate investment risks, thereby rendering these opportunities more viable for private investor participation.



Source: IMF, Mobilizing Private Climate Financing in Emerging Market and Developing Economies, July 2022

Public capital is needed to scale private climate financing

Public capital serves as a powerful tool in advancing climate transition objectives, enabling direct support for policy aims and fostering equity by channelling resources toward underserved communities.

In areas where private finance alone is insufficient to meet climate objectives, public finance can be harnessed to create blended financing instruments (Exhibit 5) that combine capital with different return expectations within an investment structure to improve risk-return characteristics and attract greater funding. **Dr Mirjam Staub-Bisang, Country Head, Switzerland, BlackRock** (pictured above) explained the benefits of blended finance at the Point Zero Forum 2023: "What makes blended finance attractive is that you can create different layers of capital with different investment properties that work for different investors."

Blended finance helps address concerns about financial uncertainty and knowledge gaps, thereby incentivising private investor participation that might otherwise be unavailable. Examples of blended finance in practice include:

- Guarantees, such as those provided by the Multilateral Investment Guarantee Agency (MIGA) to support climate initiatives. The guarantees issued by MIGA facilitate cross-border green investment by providing political risk insurance and credit enhancement to investors and lenders.

- Risk-tolerant capital, exemplified by initiatives like the Green Climate Fund (GCF), which assumes initial losses in an investment to encourage the participation of others who may not have otherwise joined.

- Direct funding, subsidies, and incentives. For example, the US Inflation Reduction Act offers support for green infrastructure financing. Such measures stimulate private sector engagement by reducing financial

barriers and creating favourable investment conditions.

Sharing risks between the public and private sectors is essential to channel a greater share of global financial assets towards climate projects. By shouldering a portion of the risks, public finance encourages private investment and promotes the scaling up of climate initiatives.

Public-private partnerships help drive positive outcomes

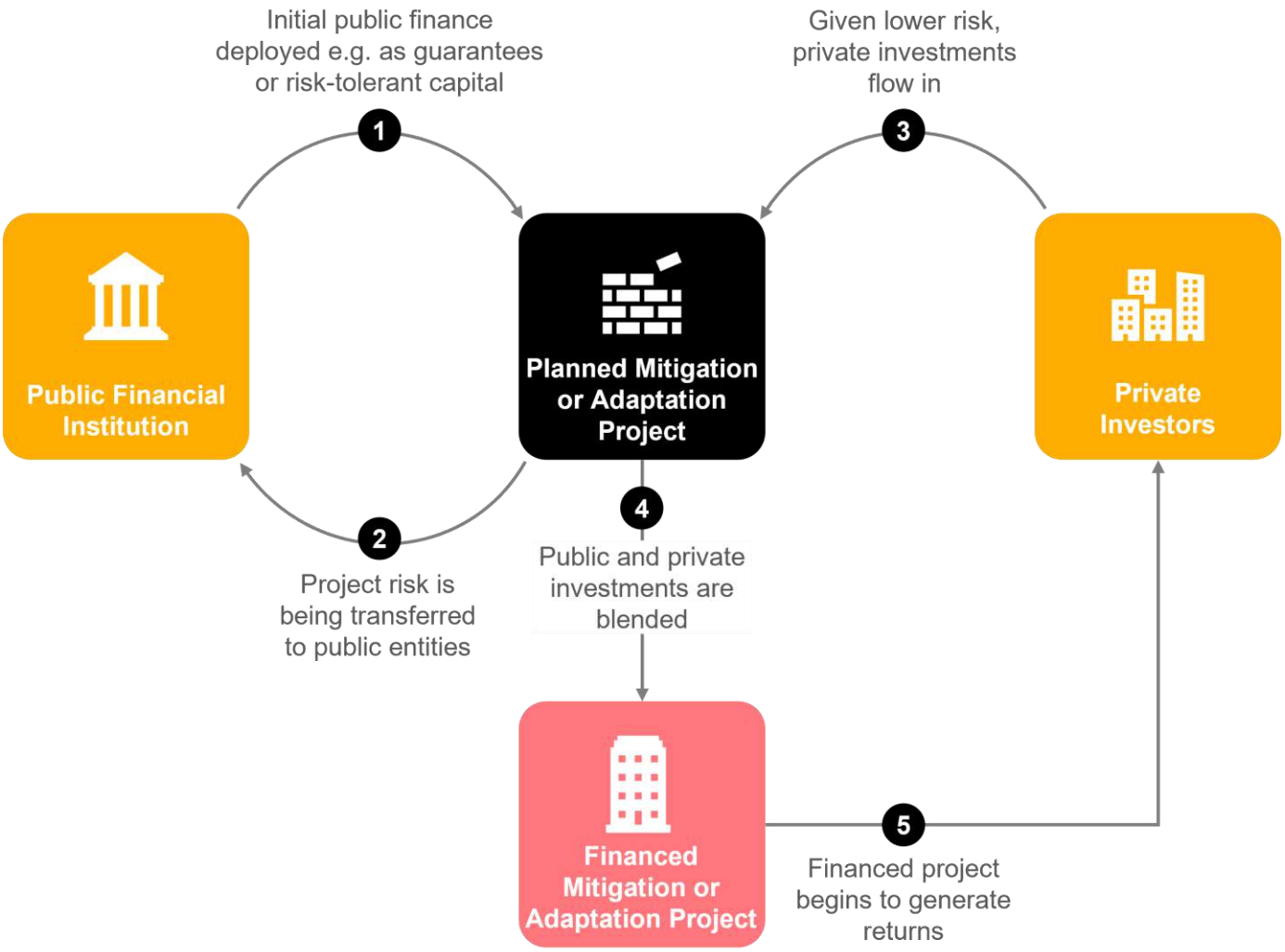
Beyond expanding the pool of capital available to drive climate transition, partnerships between the public and private sectors can yield significant non-financial benefits as well.

Funding from public financial institutions entails specific criteria for climate transition investments, involving aspects such as governance, standards, risk assessment, safeguards, and monitoring and evaluation requirements, among others. These criteria ensure that the investments align with climate objectives and deliver the intended outcomes.

Additionally, development finance institutions possess considerable expertise in collaborating with developing country governments on climate transition initiatives and boast a deep understanding of their markets. Public-private partnerships can facilitate the transfer of knowledge to private investors to narrow their knowledge gap and equip them with the necessary insights to make informed decisions, navigate complexities, and effectively contribute to climate transition projects.

Furthermore, private investment also helps to foster entrepreneurship, enhance efficiency, and drive innovation. Over time, such partnerships can facilitate a broad-based scale-up of climate transition investments, benefiting communities and investors alike.

Exhibit 5: Deploying blended finance



Source: KPMG in Singapore Research

Regulations & standardisation to accelerate momentum

The environmental, social, and governance (ESG) regulatory landscape has long been fragmented, with various reporting initiatives striving to harmonise sustainability disclosures. However, recent years have seen remarkable advancements through major announcements and collaborations. Noteworthy progress includes the development of the International Sustainability Standards Board (ISSB) standards and new jurisdictional requirements in Europe and North America. As businesses adapt to these new developments, ensuring effective coordination and alignment is vital to achieve consistent, comparable, and high-quality sustainability disclosures.

A better sustainability reporting regulatory landscape

The sustainability reporting regulatory landscape has been experiencing rapid evolution. In Europe, the Corporate Sustainability Reporting Directive (CSRD) represents a significant milestone in sustainability reporting for large companies. Building on the progress initiated by the Non-Financial Reporting Directive (NFRD) in 2014, the CSRD introduced a more comprehensive reporting ecosystem. Its aim is to provide comparable sustainability-related data that supports public policies related to sustainability and sustainable finance objectives. By requiring "limited assurance" of sustainability information from a company's auditor or an independent assurance services provider, the CSRD bridges sustainability reporting closer to financial reporting. Subsequently, a transition to "reasonable assurance" will be possible, mirroring the standard for financial information. The CSRD extends its reach to encompass all large, listed companies, and SMEs, expanding the reporting scope to approximately 50,000[3]

"Regulation is an important change agent in our industry, especially in terms of adoption of data and technology."

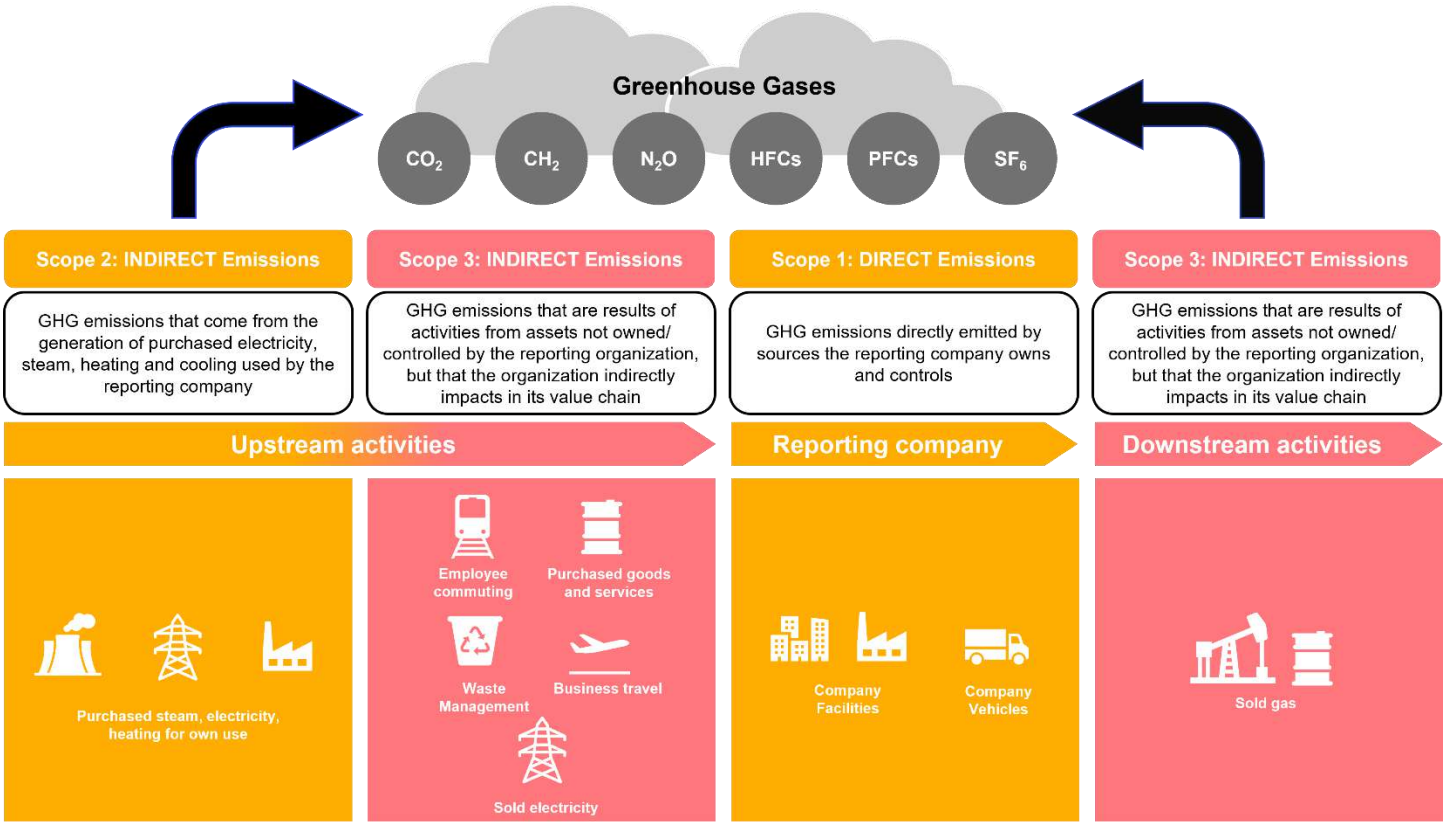
- Jason Tu, Founder & Chief Executive Officer, MioTech

[3] 'Corporate Sustainability Reporting Directive (CSRD) - a game-changing EU regulation' Grant Thornton (Mar 2023)

In the US, the Securities and Exchange Commission (SEC) recently proposed the climate-related disclosure rule, mandating registered domestic and foreign companies to disclose climate-related metrics by February 2024. These regulations, built on the TCFD framework, require companies to disclose information on physical and transition climate risks and impacts, governance practices, risk management, mitigation plans, Scope 1 and 2 emissions, Scope 3 emissions (if material or targeted), and climate-related financial metrics in a note to audited financial statements. The goal is to enable businesses to disclose climate risks and opportunities while standardising information for investors.

Both the CSRD and the US SEC's climate proposal are subject to regulatory enforcement, with distinct focuses on materiality. The US SEC's proposal centres on financial materiality, analysing how sustainable factors impact a firm's financial value. In contrast, the CSRD focuses on double materiality, considering the implications for a firm's financial value and its broader impact on the environment and society. Despite these differences, these developments underscore the increasing global emphasis on transparency and accountability in sustainability reporting.

Exhibit 6: Overview of Scope 1, 2, and 3 emissions



Source: US Environment Protection Agency (https://www.epa.gov/climateleadership/scope-1-and-scope-2-inventory-guidance)

Uptrend in sustainability reporting and materiality assessments

KPMG International's latest Survey of Sustainability Reporting in 2022 unveils several significant findings, shedding light on key trends in the realm of sustainability reporting that are driven by regulations (see Exhibit 7):

- The sustainability reporting rates among the world's leading companies are at a commendable 96 percent, demonstrating their commitment to transparency and accountability. As new regulations on non-financial reporting are introduced, the reporting rates are expected to grow further.

- The diverse range of reporting standards and frameworks used around the world makes comparison across companies and markets challenging. While ongoing initiatives like the ISSB are working towards achieving global consistency in ESG reporting, existing standards and frameworks have increased in usage. Currently, the GRI stands out as the most widely adopted reporting standard worldwide, whereas the SASB takes precedence in the US. In contrast, regions like the Middle East, Africa, and Asia Pacific demonstrate a clear preference for adhering to local stock exchange guidelines for their reporting practices.

- The survey also found that around three-quarters of the large companies surveyed are performing materiality assessments, identifying material topics by their impact on the company, its stakeholders, and broader society. As sustainability reporting transitions from being voluntary to becoming mandatory in the coming years, the use of materiality assessments is expected to increase around the world.

ESG FinReg – a delicate balancing act

The drive for new regulations on sustainability reporting arises from an intent to foster transparency and comparability of data. However, achieving the right balance is crucial, as regulations must strike a robust yet practical approach to ensure stakeholder interests while allowing businesses to comply effectively. If regulations become excessively burdensome, especially for smaller companies, compliance challenges may emerge. On the other hand, vague requirements might impede real progress in addressing transparency and comparability issues.

Aside from regulatory compliance, assurance is another pressing concern, as stakeholders increasingly seek reliable and trustworthy sustainability information. This was highlighted by **Ashley Alder, Chair, Financial Conduct Authority** (pictured below): "Independent assurance through audit of disclosures is necessary to ensure data that is being used has sufficient integrity."

The proliferation of third-party data and ESG rating providers, partly fuelled by the absence of best practices for corporate-level sustainability disclosures, raises issues of data reliability and consistency. Consequently, sustainability assurance remains inadequate.

To address this challenge, the International Auditing and Assurance Standards Board (IAASB) is actively developing an overarching standard for sustainability reporting assurance, set to be released in 2023. For effective reporting, information must be relevant and reliable, necessitating companies to treat sustainability performance with the same rigor and data quality as financial performance. External assurance can bolster confidence and trust in sustainability reports, enhancing their impact on decision-making.

Ultimately, achieving a delicate balance in ESG FinReg is essential for fostering transparent reporting practices that benefit all stakeholders, bolstering sustainability efforts and reinforcing investor confidence.

Exhibit 7: Sustainability reporting trends for leading companies

Legend:

- G250 refers to the world's largest 250 companies by revenue based on the 2021 Fortune 500 rankings
- N100 refers to a worldwide sample KMPG did on the top 100 companies in 58 countries, territories, and jurisdictions

Source: KPMG Survey of Sustainability Reporting 2022 (https://assets.kpmg.com/content/dam/kpmg/dk/pdf/dk-2022/dk-SSR-Report_FINAL_web.pdf)

Harnessing technology to fill the gaps

In the coming years, technology will play a pivotal role in facilitating the transformation of governments and businesses to fulfil their climate change and ESG commitments. The transition will rely on emerging technologies, such as machine learning for data analysis and actionable insights, and blockchain for credible carbon emissions trading and value chain tracking. Embracing these innovations is crucial to achieving sustainability goals and fostering positive environmental impacts.

Technology-enhanced reporting

The world has made significant progress in sustainability reporting by embracing the use of new technologies. For instance, the adoption of cloud computing has enabled easier data storage and access. Other emerging technologies such as Artificial Intelligence (AI), Internet of Things (IoT), and Distributed Ledger Technology (DLT) can similarly pave the way for more efficient and effective sustainability reporting. As highlighted by **Quint Simon, Head of Public Policy APAC, Amazon Web Services** at the Point Zero Forum 2023, "Adopting innovative technologies is going to be a key part in achieving net-zero goals."

AI algorithms can process vast amounts of data and provide predictive insights, helping organisations anticipate and address potential sustainability risks and opportunities proactively. IoT devices offer reals-time data collection, allowing businesses to monitor and respond promptly to environmental changes and track progress towards sustainability goals. DLT, commonly known as blockchain, enhances transparency and traceability in sustainability reporting. By recording transactions in a decentralized and tamper-resistant ledger, DLT builds trust among stakeholders and ensures the integrity of reported data.

Such emerging technologies can also help in the generation of proxy data, which is valuable when direct data is unavailable or expensive to obtain. By leveraging AI and IoT, organisations can create proxies for various environmental indicators, improving reporting accuracy and completeness.

"New technologies bring the opportunities to transform financial services, but also bring new and novel risks that need to be mitigated."

- Balbir Bakhshi, Group Chief Risk Officer, London Stock Exchange Group

With the strategic integration of emerging technologies into sustainability reporting, businesses can unlock unprecedented capabilities, enabling them to make better-informed decisions and take purposeful actions in their pursuit of sustainability goals.

ESG fintech burgeoning field

The ESG fintech landscape comprises a diverse array of players, encompassing various financial institutions, real economy players, data companies, and fintechs. Many of them have developed innovative ESG FinTech solutions leveraging emerging technologies to deliver substantial ESG value.

Some of the pioneering players are highlighted below:

Use of IoT – GreenOn

GreenOn is a digital service that enhances the transparency and accountability of the sustainability efforts of companies within Asia's food and agricultural sectors. Leveraging IoT technology, it gathers real-time data from the field, while collaborating with nongovernmental organizations (NGOs) to audit green projects' credentials. This approach fosters transparent sustainability reporting, offering financiers timely and verifiable information to make well-informed financing decisions.

Use of AI – MioTech

MioTech harnesses the power of AI to address challenges in sustainability, climate change, carbon emissions reduction, and social responsibility. With its extensive coverage of ESG data, the company empowers financial institutions with intelligence tools to make well-informed decisions in green finance and responsible investments. Their software also aids corporations in efficient ESG reporting, enhancing energy efficiency, and tracking and reducing carbon emissions.

Use of DLT – AirCarbon Exchange (ACX)

ACX operates a global trading platform that specifically caters to the voluntary carbon trading market. Serving companies, financial traders, carbon project developers, and other industry stakeholders, their services aim to facilitate efficient carbon trading. The company's underlying DLT is strategically designed to enable scalability in the carbon market to help meet global net-zero goals.

Accounting for new risks

Despite its benefits, the use of emerging technologies also brings forth inherent risks. To address these risks effectively, several recommendations are proposed:

- Organisations need to build a risk lens upfront, recognising potential vulnerabilities and challenges that may arise from adopting new technologies. By embedding risk analysis in their business processes, they can identify and address potential issues early on.

- Engaging risk and compliance functions, along with regulators, is imperative for effective decision-making. Collaborating with these stakeholders ensures that sustainability reporting initiatives align with both regulatory requirements and industry best practices. Regular interactions with regulators enable organisations to stay abreast of evolving compliance standards and expectations, fostering a proactive approach to sustainable practices.

- Collaboration across the ecosystem is also key to managing emerging technology risks. Active participation in industry-wide initiatives, such as the UK Climate and Market Risk Oversight Group (CMORG) and the G7 cyber expert group, offers valuable insights and expertise. By exchanging knowledge and experiences with peers and industry experts, organisations can adeptly identify emerging risks and implement efficient risk mitigation strategies, fostering a resilient and secure technological landscape.

- Moreover, implementing robust cybersecurity measures is paramount to safeguarding sensitive sustainability data. Organisations must prioritise investments in secure and resilient IT infrastructure to proactively defend against potential cyber threats and ensure the confidentiality and integrity of their data.

By undertaking a proactive and collaborative approach in managing the risks associated with emerging technologies, organisations can navigate potential challenges and ensure the credibility and effectiveness of their sustainability efforts.

Conclusion

The ESG industry is at a critical juncture. Significant changes are underway in sustainability standard-setting, reporting, and regulations. Recent key developments such as the publication of the ISSB standards, the development of climate data platforms like the Net-Zero Data Public Utility (NZDPU), and the issuance of new regulations like the Corporate Sustainability Reporting Directive (CSRD) and the US SEC climate proposal have served to underscore the need for countries to strengthen sustainability reporting ecosystems to be able to effectively track and achieve their climate commitments.

As the sustainability landscape continues to evolve rapidly with increasing requirements expected ahead, it is crucial for governments and companies to prepare early and put in place plans and actions to address these requirements, along with mobilising the required capital and leveraging the use of emerging technologies to help attain their sustainability goals. Climate change demands immediate action. Our collective responsibility to mitigate its impacts has never been more critical. Embracing sustainability, innovation, and global cooperation is essential to safeguard our planet's future.

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