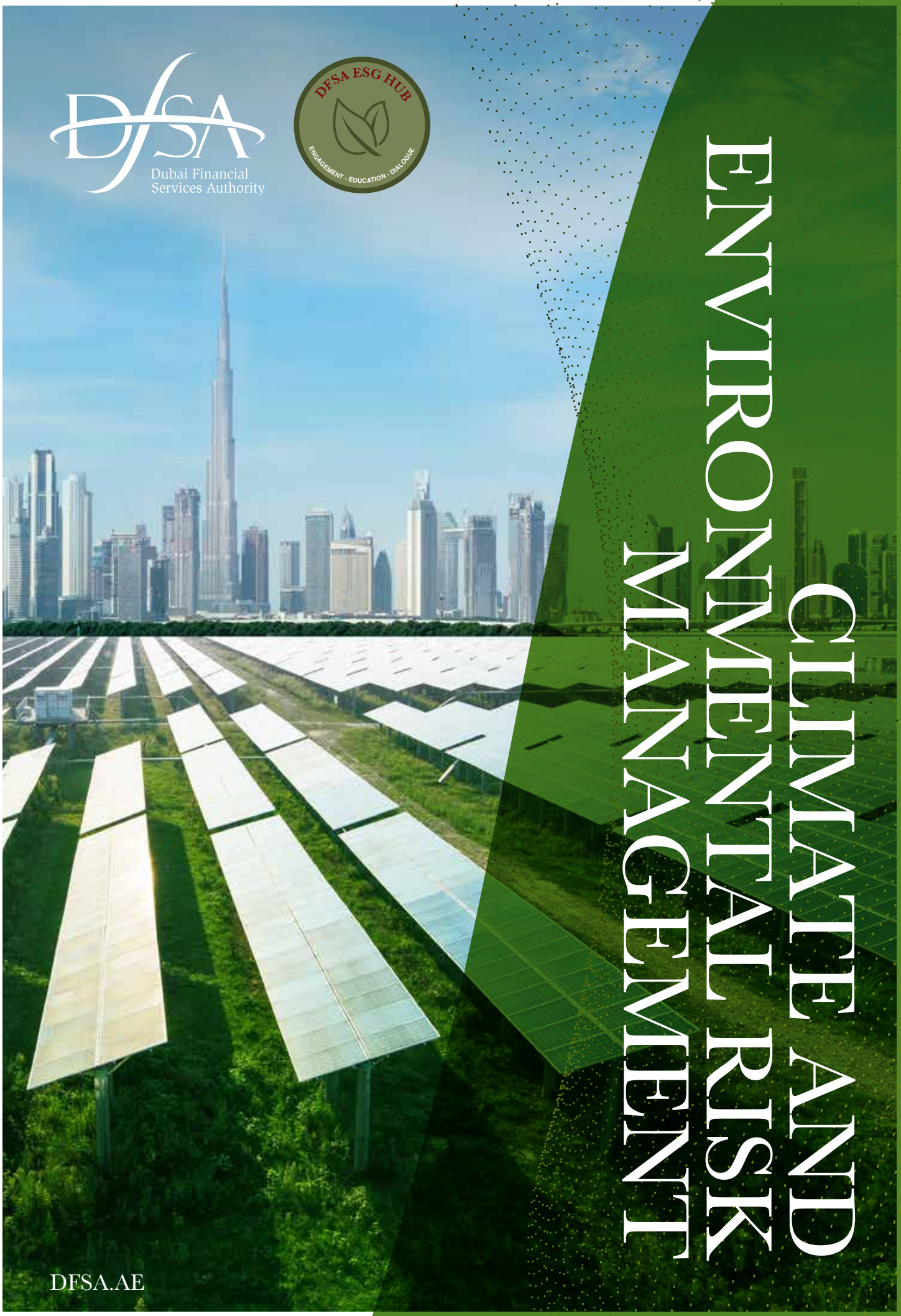
Dubai Financial Services Authority

DFSA ESG HUB

ENGAGEMENT - EDUCATION - DIALOGUE



CLIMATE AND ENVIRONMENTAL RISK MANAGEMENT

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Dubai Financial Services Authority

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Opening Statement from DFSA

As the world suffers more frequent occurrences of extreme climate events, and as transitions to a low-carbon economy gather pace across the globe, the need for financial institutions to understand, assess and address climate and environmental financial risks becomes more urgent.

The task of delivering orderly climate transition and being prepared to face the adverse impact of climate changes needs to be within the lens not only of individual firms, but also the financial regulators who are watchful for signs of firm or systemic instability.

Since this topic came onto the agendas of international regulatory bodies in 2017, the DFSA has benefitted from its engagement with the other members of the Network for Greening the Financial System (NGFS) to formulate the very first supervisory guidelines on climate and environmental risk management. Subsequently, we have witnessed the Basel Committee on Banking Supervision (BCBS) incorporate climate-related risk into its overall principles underpinning its prudential framework.

In the insurance sector, the DFSA is also a member of the Sustainable Insurance Forum (SIF), a platform for insurance supervisors and regulators to share knowledge and discuss matters related to embedding climate risk in insurance supervision and regulation. In this task, SIF has established a strategic partnership with the International Association of Insurance Supervisors (IAIS), which has positioned climate change as a key theme in its strategic plan for the coming years and published several papers related to climate-related risks in the insurance sector.

We have also seen many initiatives emerging in the investment sphere, including from the International Organization of Securities Commissions (IOSCO) and the United Nations, which emphasised the responsibility of asset managers and investors in understanding and communicating ESG and climate-related risks while pursuing ESG-minded investment goals. Similarly, the ESG ratings and data providers have been encouraged to step up their game in terms of assessments and ensuring transparency, given how essential ESG and climate-related data are to the financial community.

In the UAE, these topics have featured on regulatory agendas since 2019, primarily through what is now the UAE Sustainable Finance Working Group (SFWG). The SFWG comprises Federal and financial free zone regulators, relevant governmental bodies, and ministries, as well as securities exchanges within the UAE. The SFWG published its Guiding Principles on Sustainable Finance in early 2020, which represent the members' commitment to encourage their regulated entities to integrate ESG factors in the firm's risk management and governance. The SFWG 2021 High Level Statement on Sustainable Finance which set out a Roadmap with goalposts related to developing frameworks on operationalising the ESG governance and risk management by and in partnership with the financial industry, which is currently ongoing.

Within DIFC, the DFSA has launched its own initiative, DFSA ESG Hub, to serve as a discussion and consultative platform on ESG matters to benefit both DIFC firms and the DFSA. Under this initiative, the DFSA convened the Task Force on Sustainable Finance (TFSF), which since November 2021 furthered the conversations on ESG topics among Task Force members, many of which, including climate risk supervision, we had initiated in our discussion paper 'Championing sustainable finance in the DIFC'.

Following a series of discussions and TFSF meetings in 2022, we are delighted to present a collection of short essays as an anthology on *Climate and Environmental Risk Management* authored by members of the TFSF. This publication contributes to the evolving debate on how best to embed, identify, measure, disclose, analyse, address, and mitigate the physical and transition risks stemming from climate change as well as broader environmental risks in the UAE.

Given the diversity of contributors, a variety of perspectives ranging from the banking industry, investment, financial data provider and rating industries are represented, which add value to the discussion about this topic.

We hope that the views, insights and the current practices presented by the authors will contribute to raising awareness and building capacity, while serving as a useful benchmark in the UAE and beyond.

In particular, the authors grappled with a range of vital aspects related to climate and environmental risks considerations such as:

- how best to embed them in their organisational structures and corporate governance; and, importantly
- how these risks impact business and investment strategies and how they are reflected in the firm's overall risk appetite.

The challenges related to risk identification and measurement methodologies across geographies, including data gaps, metrics and model availability as well as scenario diversity are also usefully discussed. Lastly, concerns related to effective utilisation of these risk analyses across geographies, client transition readiness, and the standard and disclosure disparities relating to various ESG risks and carbon emissions highlight other challenges encountered by firms.

The DFSA wishes to thank all the firms who have participated in TFSF discussions and contributed to this publication. In particular, we must thank Bloomberg, DBS Bank, Franklin Templeton, HSBC Bank Middle East, Natixis, Standard Chartered and S&P Global for their valuable contributions and willingness to share their unique perspectives on this complex and challenging, yet crucial, topic.

Banking

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Philosophy and Objectives of Climate and Environmental Risk management

Tackling climate change is a key priority, and DBS is joining global efforts to achieve net zero carbon emissions. DBS is the first Singapore bank to become a signatory to the UN convened Net-Zero Banking Alliance, committing to aligning our lending and investment portfolios to net zero emissions by 2050 or sooner. DBS will annually publish absolute emissions and / or emissions intensity in line with best practice.

As a signatory to the Equator Principles (EP) since November 2019 and the first EP bank in Southeast Asia, we continue to apply the environmental and social risk management framework and standards stipulated under the EP to applicable transactions. In 2021, the bank was mandated to provide six transactions with Project Finance Advisory Services and achieved financial close for nine Project Finance transactions which were identified to require alignment with the EP.

Organisational Approach to Climate and Environment Risk Management

DBS strongly believes that the climate crisis is one of the biggest challenges for mankind, and that it will take commitment and effort from everyone to find solutions that will safeguard our planet and our future generations. Our approach to achieving our 2050 target entails strengthening our risk management capabilities and ensuring portfolio alignment with our net zero commitment into a single cohesive framework.

As a part of our transition to a net zero future, we have:

- Developed our Group Responsible Financing Standard, which outlines the ESG requirements for corporate financing.
- Formed a Climate Steering Committee to create a comprehensive climate risk roadmap that will include governance, client engagement, credit underwriting and integration, risk appetite, scenario analysis and disclosures.
- Expanded our Scope 3 financed emissions quantification by publishing a report detailing sector-specific decarbonisation goals in Our Path to Net Zero – Supporting Asia's Transition to A Low-carbon Economy to cover nearly 3,000 listed and non-listed companies across nine priority sectors. The nine sectors constitute the vast majority of financed emissions attributable to DBS, representing 31% of the Institutional Banking Group's outstanding portfolio as of August 2021. These targets will be reviewed periodically as science and client data evolve. The bank will also update on its progress annually through its Sustainability Report.
- Our Group Core Credit Risk Policy incorporates principles and approaches to managing ESG issues. Our list of prohibited activities is supplemented by the Group Responsible Financing Standard and the 9 Sector Guides pertaining to sectors with elevated ESG risks. These apply to all our lending and capital markets products amd services, in addition to treasury investments and promoter share financing in Private Banking.
- Each Sector Guide is supplemented by a sector-specific ESG risk assessment template that provides the business and credit risk managers with a structured approach to assess risks as part of their overall financing decision. Sector guides are reviewed regularly.

Impact that climate and risks have on designing business and/ or investment strategy:

To oversee our transition to a net zero commitment by 2050, DBS has established a Board Sustainability Committee to provide greater governance and oversight into climate related risks and opportunities (in addition to our broader environmental, social and governance efforts).

Some of the key business decisions that have been driven by our Climate Risk strategy include the following:

- DBS is the first Singapore bank to commit to zero thermal coal exposure by 2039. Since April 2021, DBS has ceased onboarding new customers that derive more than 25% of their revenues from thermal coal and we will lower the threshold as time progresses. Further, from January 2026 onwards we will stop financing customers who derive more than 50% of revenues from thermal coal - (except for their non-thermal coal and renewable energy activities)
- We have established a taxonomy that precisely categorises sustainable and transition activities by sector. This has been embedded in our Sustainable and Transition Finance Framework and Taxonomy document that guides our engagement with customers as we help them establish transition strategies to reduce greenhouse gas emissions and build resilience to climate change.
- We have set ourselves a target of SGD 50 billion in sustainable financing by 2024, against which we had cumulatively committed SGD 39.4 billion in sustainable financing transactions as of December 2021.

Risk Identification and measurement: data, metrics, models and methods, scenarios – use cases, approaches & issues

We adopt three lines of defence to manage our ESG risk within - DBS' internal controls framework:

- 1st Line of Defence – Relationship Managers (RMs) conduct ESG risk assessments of customers as part of the credit application or capital markets deal engagement process. Where required, these may be escalated to the IBG Sustainability team for further evaluation/ revision. This may also be supplemented by enhanced due diligence (including site visits, independent reviews and/or certification requirements).
- 2nd Line of Defence – Credit Risk Managers (CRMs) review the ESG assessments as part of the credit approval process.
- 3rd Line of Defence – Group Audit performs periodic audit on the effectiveness of our overall ESG risk management.

Utilisation of measurement results and challenges

In our recently announced report on 13 September 2022, Our Path to Net Zero – Supporting Asia's Transition to a Low-carbon Economy, we announced sectoral targets that are aligned with science-based decarbonisation glidepaths. These targets will be reviewed periodically as science and client data evolve. The bank will also update on its progress annually through its Sustainability Report.

These decarbonisation targets go beyond the bank's institutional banking lending book and - cover capital market activities as well. They will serve as the "north star" in guiding DBS on its transition journey and strategically channeling financing away from high-emitting activities towards more sustainable alternatives. In tandem, DBS is also signaling its commitment to support the transition investment needs of its clients.

The way forward following the publication of these targets is as follows:

- Monitoring and reporting annually our progress against our targets
- Reviewing periodically and where appropriate, updating our targets and methodologies.

Challenges related to ongoing risk monitoring and management

The availability of data across sectors and the quality of available data (for instance, GHG emission disclosures by clients) is one of the biggest challenges we face. In calculating our sectoral baselines for decarbonisation targets across nine sectors, we were presented with an optimisation challenge where it required us to make clear decisions in terms of sectoral coverage and scope of GHG emissions while balancing and navigating the data challenges. The four main challenges we encountered were:

1. The choice of sectors and subsectors to be included in our baselining and target-setting exercise.
2. Whether emissions should be measured at the specific project level, borrower level or the parent entity level.
3. The scope of emissions to be included in our targets
4. The source for GHG emissions and other data

Based on our evaluation of these challenges we have set targets in terms of emissions intensity or absolute emissions for seven sectors – however, for two of these sectors (Food and Agribusiness and Chemicals), we have set data coverage targets at this juncture. This is on account of there being limited public disclosure of emissions intensity and industry consensus on the pathways to net zero at this point in time. We will set quantitative emissions reduction targets for these two sectors once data availability and quality for these sectors improve.

Additionally, to best support our clients in accelerating their transition, it may become necessary to provide additional financing to high-emitting companies for the ultimate transition outcome (for instance, a power company that needs financing to accelerate the shut-down of a coal-fired power plant). While providing this financing will place a strain on our current emissions reduction targets, it would ultimately accelerate the path to net-zero.

Hence, in the future, we may investigate setting additional targets that apply for such financing to companies that are rapidly transitioning, thereby taking these companies out of the scope of our current targets for transparency. Our targets will reflect the real-world impact aligned to the progress made along the journey of transition at a point in time and will not be a mere shuffling of our portfolio. Thus far, we have not set additional targets for helping such clients to transition. If we do so in future, we will put in place robust governance to ensure that these targets are used only if absolutely necessary.

Impact that the currently proposed disclosure frameworks and taxonomies have on climate and environmental risk management

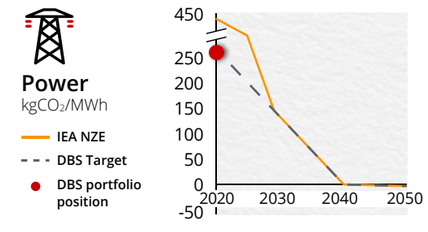
As of September 2022, there is no taxonomy utilised within Singapore. The Singapore Green Finance Industry Taskforce which DBS is a part of is working on establishing a taxonomy and has just concluded its second consultation in June 2022.

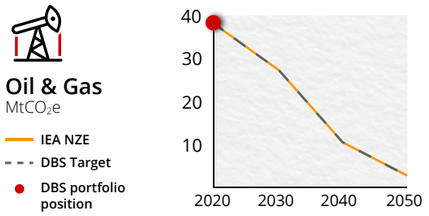
With Our Path to Net Zero – Supporting Asia's Transition to a Low-carbon Economy report, we are better placed to enhance our transition risk scenario analysis and strengthen our climate risk management. The publication of the nine sectoral targets and glidepaths will help us to better integrate climate risks into our overall credit risk management framework and better steer our Institutional Banking Group portfolio to align with our climate commitments.

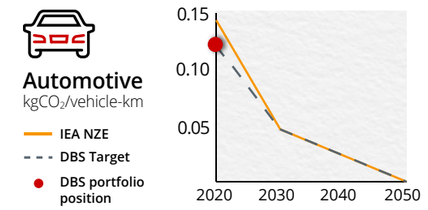
Future outlook and regional perspective in this area

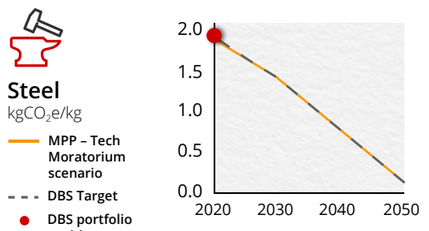
As various sectors progress in their transition journey to decarbonise and respond to climate change, we anticipate that cross-sectoral synergies in terms of decarbonisation will be realised. For instance, when a power grid is being decarbonised, we would expect the GHG footprint of other sectors dependent on that grid, such as Real Estate and Automotive (given the growth of electric vehicles (EV)), to decarbonise as well. Over time, economy-wide decarbonisation can be achieved through these sectoral targets. We are also cognisant that the success of our and our clients' decarbonisation initiatives will in many cases have a large dependence of the strengthening of government policies and on development of technological solutions that promote decarbonised alternatives. For instance, the Aviation sector's ability to achieve its de-carbonisation targets will depend on the availability of Sustainable Aviation Fuel in adequate volumes and at competitive prices. Further progress in aircraft design is also needed for more energy efficient aircraft. Similarly, the Steel sector's ability to achieve low carbon transition will be dependent on a combination of technological innovation (to reduce the cost difference between the traditional coal-powered manufacturing method and lower carbon alternatives) and government policies such as carbon taxes and incentives that improve the economics.

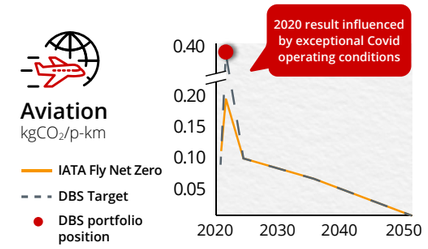
Further information on our outlook for each sector may be found at Our Path to Net Zero – Supporting Asia's Transition to a Low-carbon Economy.

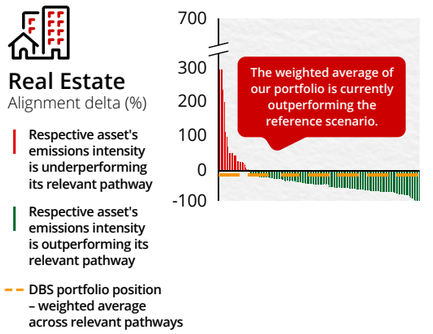


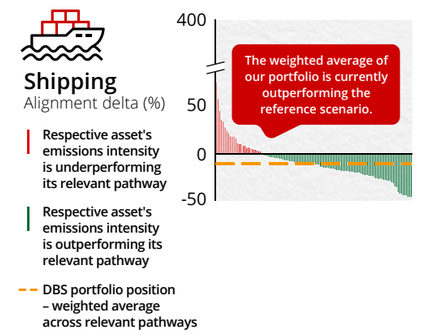


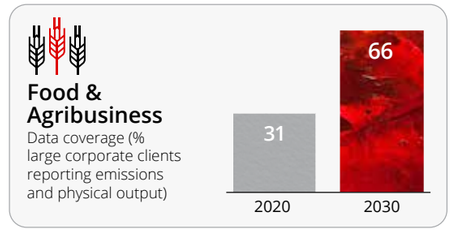


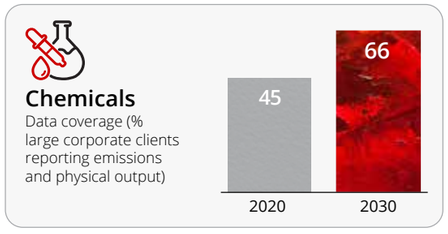












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Climate and Environmental Risk Management

1. Introduction

Climate and environmental-related risks can affect a company's business and its financial performance in several ways. Severe and frequent natural disasters can damage assets, disrupt operations, and increase costs. Environmental risks can have adverse implications for human health and well-being. Transitions to lower carbon products, practices, and services, triggered by changes in regulations, consumer preferences, availability of financing, technology, and other market forces, can lead to changes in a company's business model. Governments around the world have made public commitments to transition to a lower carbon economy, and efforts towards meeting those greenhouse gas (GHG) reduction goals can have material financial impacts.

Potential climate-related financial risks would likely include credit and market risks associated with loss of income, defaults, and changes in asset values; changing demand for liquidity; operational risks associated with disruptions to infrastructure; and reputational risks. The implications may be far-reaching in their breadth and magnitude, and could affect a wide variety of firms, sectors and geographies in a highly correlated manner, either by the actual or expected economic effects of a continuation of climate-related physical risks, or by risks associated with a transition towards a low-carbon economy, particularly if the transition is disorderly.

The approach outlined below provides a high-level framework for a Financial Institution (FI) to incorporate climate change and take a strategic, holistic and long-term approach to climate risk management.

2. Risk Management Approach

An FI's approach to managing climate-related risks should be formed based on its ambitions and targets that are designed to help make the FI and its clients more environmentally and socially sustainable, while aligning with its regulatory environment. An approach, similar to HSBC's Net Zero ambition, would be to support the transition to a net zero global economy and align financed emissions to the Paris agreement goal of net zero by 2050[1]. Additionally, it could set net zero targets for its own operations and supply chain. A strategic approach would be required to ensure that climate transition is embedded into an FI's core business and risk processes. To do this effectively, FIs must understand the risks they face.

2.1. Risk Governance

Climate-related financial risk drivers can translate into traditional financial risk categories[2] and therefore climate risk management should be integrated within an FI's overall risk management framework and its three lines of defense model, strategically and in line with Board level risk appetite. This will be key to operationalise risk governance and sets out how FIs identify, assess and manage risks. This approach also ensures the Board and senior management have visibility and oversight of the key climate risks.

2.2. Risk Management Frameworks

Climate risk could be treated as either a standalone, principal risk type, a risk within other existing risk types (a "cross-cutting" risk), or both within existing risk types and as a principal risk. An FI's established practice in deciding and managing risks and a materiality assessment of climate risks will determine the best approach. Factors to consider in the materiality assessment include an FI's exposure to physical and transition risks. Exposures could be associated with both the FI's own property and its business model, concentrations of risk at portfolio and transaction level, and by geographical footprint.

[1] The Paris Agreement, UNFCCC, 2015
[2] Climate-related Risk Drivers and their Transmission Channels, Basel Committee on Banking Supervision, April 2021

Climate-related risks, manifesting through physical and transition channels, are considered as systemic risks which could impact the stability of the financial system. Risk assessment of the financial risks as well as the non-financial risks will be essential to measure, monitor and mitigate the risk within an FI's appetite. Scenario analysis will be key to assess the impact of climate change, especially given the underlying uncertainties in how and when risks will manifest.

As climate risk management capabilities mature over time, key climate risks should be integrated into an FI's policies, processes and controls. Climate risk governance and reporting should be strengthened to ensure appropriate oversight, management and escalation. These should be supported by metrics related to key climate risks, regular updates on the FI's climate risk appetite and top and emerging climate risks. Metrics should incorporate transition and physical risk, along with net zero ambition and targets, high transition risk sector exposures, stressed credit losses, emissions data and integrate climate risk stress testing.

2.3. Risk Appetite

An FI's risk appetite should reflect the level of climate risk that it is willing to take based on its business model and an approach would be to set targets on a sector-by-sector basis that are consistent with net zero outcomes. In assessing financed emissions, the focus should be on those parts of the sectors that are most material in terms of GHG emissions, and where engagement and climate action have the greatest potential to effect change, considering industry and scientific guidance. The risk appetite should be translated into risk limits and should be monitored through either performance or risk indicators and linked to objectives.

Climate risk appetite measures support the oversight and management of the financial and non-financial risks from climate change, meet regulatory expectations and will support an FI's aim to deliver its climate ambition in a safe and sustainable way. For instance, HSBC's initial set of measures are focused on the oversight and management of our key climate risks - wholesale credit, retail credit, reputational, resilience and regulatory compliance. FIs should also consider the below factors as they develop their climate risk appetite measures:

- adapt measures to incorporate forward-looking transition plans and net zero commitments,
- expand measures to consider other financial and non-financial risks,
- use scenario analysis capabilities, and
- consider longer-term impacts with interim milestones, linked to scenario analysis and impact assessments.

2.4. Risk Identification

FIs should identify climate-related risks, manifesting through transition and physical channels for financial and non-financial risks at both customer and portfolio levels. These should be identified over the short, medium, and long-term horizons and its integration into existing risk management processes should be proportionate in the context of the FI's other risks, materiality of its exposure to climate-related risks, and the implications for the FI's strategy. The materiality determination regarding potential future events will require an assessment of both the probability of the event occurring and its potential magnitude, or significance to the FI.

The Task Force on Climate-related Financial Disclosures (TCFD) identifies four main drivers of transition climate risk – policy and legal, technology, end-demand (market) and reputational – and two physical risk drivers – acute and chronic[3]. The most material risk categories within an FI's risk management framework that will have an impact as per the Climate Financial Risk Forum (CFRF) are insurance underwriting risk, credit risk, financial market risk and operational risk[4]. Based on materiality, other risk categories, particularly litigation and model risk could also be impacted. FIs should also undertake a mapping exercise to understand potential second and third order risks, while its risk data aggregation capabilities should include climate-related financial risks to facilitate the identification and reporting of risk exposures, concentrations and emerging risks.

A degree of prioritisation will be needed to determine the level of due diligence required and proportional to the risk identified. As the impacts of climate change become apparent and the impacts of physical risk more pronounced, environmental risk assessments for geographic jurisdictions vulnerable to increased frequency and intensity of erratic weather events will become increasingly important.

2.5. Risk Measurement

At the customer level, FIs should take into consideration the sector of the client's operations, the geographic location of its assets, as well as commitment, capability and its transition readiness, based on intent and progress in mitigating the risks of transition. FIs may also measure the emissions intensity trajectories of their clients' warming potential, to assess the alignment of clients to the FI's risk appetite and long-term strategic plans. Climate-related risks will need to be factored within a borrower's default risk and collateral valuations. These assessments may also be linked into account level or client level plans to support the overall linkage of risk assessment and the account planning exercise.

[3] Recommendations of the Task Force on Climate-related Financial Disclosures (TCFD), June 2017
[4] Risk Management Guide, Climate Financial Risk Forum (CFRF), June 2020

At the portfolio level, FIs should be cognisant towards risk concentration as climate-related risks may aggregate across portfolios over time. Climate-related risk metrics and evaluation should be included as part of monitoring the portfolio along with attention to second order risks. Portfolio sensitivity to climate-related risks can be used as part of a risk identification process. FIs should understand what aligning their portfolios to the goals of the Paris Agreement mean in terms of the sectoral or regional composition of their portfolios.

2.6. Scenarios Analysis

FIs can use a range of approaches to identify climate-related risks including the use of scenario analysis, models that stimulate future state of economies and financial markets, hazard maps identifying severity of perils and horizon scanning. Scenario analysis will be a key tool for risk identification and assessment of climate-related risks and opportunities, especially for those risks where the timing is uncertain and difficult to assess. The outputs of this exercise should feed into an FI's strategic plan and risk appetite to enhance business and strategy resiliency to a range of future states.

A critical aspect of scenario analysis will be the selection of a set of scenarios that cover a reasonable variety of future outcomes, both favorable and unfavorable. Scenarios can be internally developed, or FIs can leverage externally available climate scenarios like the NGFS[5]. TCFD recommends that organisations use, at a minimum, a 2°Celsius scenario and consider using other scenarios most relevant to its circumstance.

3. Impacts on Business Strategy

Businesses can have an impact on the environment, individuals and communities around them and FIs should develop, implement and refine their approach to working with their customers. FIs should set a climate ambition, both for its own operations and its financed emissions which should be linked to a defined net zero pathway such as the Paris Agreement goal. The climate ambition should be underpinned by sector wise policies and financed emissions targets. Financed emissions considerations will need to be built into business processes, aligned with client transition plan reviews, which will be key to an FI's client engagement approach. These should be assessed in conjunction with external references such as outputs from the GFANZ 'real economy transition plans' workstream[6], TCFD (disclosures)[7], SBTi (metrics and targets)[8] and IEA's decarbonisation pathways[9].

An FI's sustainability policies should be aligned to its approach to climate risk, and its net zero ambition. When FIs identify activities that could cause material negative impacts, it should subject such customers to greater due diligence to confirm that risks are responsibly managed. Physical and transition risk drivers will have an impact on an FI's balance sheet; however, the magnitude of effects is likely to vary depending on the nature of the climate event and on specific business models. Transition risks could be expected to be higher in sectors with higher levels of GHG emissions, potentially resulting in stranded assets in an abrupt and disorderly transition scenario. HSBC's approach aims to work with customers to support them on their journey to lower carbon emissions, apply a climate lens to its financing decisions, prioritise financing and investment that supports customers in all sectors to transition to lower carbon emissions and increase transition finance solutions to help enable sectors to progressively decarbonise, while helping to ensure a just and stable transition.

For instance, HSBC's sustainability risk policies now cover agricultural commodities, chemicals, energy, forestry, mining and metals, thermal coal, energy, UNESCO World Heritage Sites and Ramsar designated wetlands These policies define HSBC's appetite for business in these sectors and seek to encourage customers to meet good international standards of practice. HSBC has also set interim 2030 on-balance sheet financed emissions targets for the oil and gas, and power and utilities sectors, aligned to the IEA's net zero scenario.

4. Measuring Carbon Emissions

FIs will need a common set of harmonised and transparent GHG accounting methodologies to enable measuring and disclosing GHG emissions associated with lending and investment activities. An organisation such as the Partnership for Carbon Accounting Financials (PCAF) provides guidance on how to assess and disclose GHG emissions and provides a common approach for addressing variability in the data available. Since not all clients report their GHG emissions, emissions could be estimated using proxies based on company production and revenue figures or by applying industry averages where company specific data is unavailable. The methodology and data used to assess financed emissions and set targets is new and evolving, and industry guidance, market practice, and regulations continue to evolve.

[5] Physical and Transition Risk Scenarios, Network for Greening the Financial System Scenarios (NGFS)
[6] Real-economy Transition Plan publications, Glasgow Financial Alliance for Net Zero (GFANZ), 2022
[7] Recommendations of the Task Force on Climate-related Financial Disclosures, TCFD, June 2017
[8] Sector Guidance, Science Based Targets initiative (SBTi)
[9] Net Zero By 2050, International Energy Agency (IEA), May 2021

FIs should set targets and an approach would be to set these in line with industry guidance on assessing portfolio alignment, such as the Net-Zero Banking Alliance (NZBA) and the Financial Services Taskforce (FSTF). As data availability, methodologies and climate science evolves, an FI's initial set of baselines and targets may require updating. FIs should report financed emissions and progress against agreed targets on a regular basis while being transparent in its disclosures about the methodologies applied.

HSBC's approach to measuring its carbon emissions follows the Greenhouse Gas Protocol global framework, which identifies three scopes of emissions[10]. The firm's upstream activities include business travel and emissions from its supply chain including transport, distribution and waste. The firm's downstream activities include those related to investments and financed emissions. HSBC's analysis of financed emissions considers on-balance sheet financing, including project finance and direct lending, as well as financing it helps clients access through capital markets activities. Financed emissions link the financing HSBC provides to its clients and their activities in the real economy and helps provide an indication of HSBC's scope 3 emissions.

5. Disclosures

Disclosures should be the outcomes of a process of change to governance, risk management and business strategy that consider climate-related risks. Good disclosures can help market participants identify where climate-related financial risk and opportunity exist, facilitating an orderly transition to a net zero carbon and climate-resilient economy. Disclosure frameworks such as the TCFD and Greenhouse Gas Protocol provide consistent, comparable, and reliable information about climate-related risks, including how those risks are likely to impact an FI's business operations and financial performance. Disclosures allow for understanding and analysing climate-related risks and impacts of both transition and physical risks on an FI's business strategy, financial planning, and capital allocation.

6. Challenges

Some of the key challenges related to climate risk management are:

- Client readiness, maturity of transition plans and the availability of data across segments.
- Difficulties in obtaining internal and external climate data, e.g., client emissions data, data on building materials, energy efficiency ratings for real estate assets.
- Data gaps due to lagged or absent disclosures by private companies and companies in emerging markets.
- Risk measurement models may not capture real world implications through the use of simplified assumptions.
- Difficulties in the development and use of scenarios for risk assessment due to long term horizon uncertainties.

7. Conclusion

The expectations and best practices around climate and environmental risk management are quickly evolving. An FI's net zero ambition should be underpinned by its relationships with its customers, enabling them to take action to address climate change in their own activities. To achieve this, FIs should aim to integrate climate risk into their existing risk management framework to provide a basis for informing client engagement and business management decisions from a climate perspective.

[10] Scope 1 represents direct emissions a firm creates. Scope 2 represents indirect emissions resulting from the use of electricity and energy to run a business. Scope 3 represents indirect emissions attributed to upstream and downstream activities taking place to provide services to customers.

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CORPORATE AND INVESTMENT BANKING

Green Weighting Factor & Climate Trajectory

Addressing climate change is a key pillar of Natixis Corporate & Investment Banking's (Natixis CIB) strategic plan, placing both climate change adaptation and transition as major sustainability issues and a critical development opportunity for our business.

The banking sector has a paramount responsibility and influence on the ability of our economies to transition and to face climate change. Banks' key role is to progressively condition the access to capital/financing to reflect actual climate transition dynamics by supporting clients in their transition pathway with attention to the pace, means, governance but also the associated social consequences.

Our approach:

Climate-related scenario-based benchmarking is to date the best science-based tool available to help our organisation steer the transition of its banking book, and consequently, catalyse the transition of our clients, while considering the necessary transformation pace, and an ability to refine by sector and geographies with a medium to longer term perspective. It allows us to:

- Steer our business by accompanying our clients in their own environmental transition, going beyond a simple "corporate responsibility" approach. Our clients' transition dynamic is and will remain the most important driver of our own transition. This is achieved through strategic dialogues, ad-hoc advisory, decarbonising project/asset financing, climate savings solutions, sustainable finance solutions and more broadly through a climate adjusted capital allocation strategy using our Green Weighting Factor that progressively conditions the access to capital to reflect transition dynamics;
- Monitor and reduce potential financial losses related to physical and transition risks; and
- Future proof our business to increasing regulatory demands.

To that effect, our climate-related scenario benchmarking analysis feeds into our climate trajectory steering and contributed to the intermediary short- and medium-term temperature targets we have set ourselves. This is accompanied by a thorough forward-looking climate budgeting exercise, now performed on a yearly basis.

As a core principle of our transition strategy, the Green Weighting Factor (GWF) is an operational tool, fully embedded into our existing processes and our day-to-day business activities (strategy, budgeting, financial monitoring and planning processes).

The below key transition dynamic drivers rely on the GWF as an enabler:

- Climate trajectory is now being steered through tighter management of our new production and balance-sheet with an active portfolio management: reinforcing selectivity on new production and actively managing our portfolio (through a secondary sales axis, securitisation, etc.);
- Evolution of our risk framework with sector and colour limits;
- Our client approach has evolved to include a climate dimension in our client tiering, by identifying candidates for acceleration (best contributors and highest potential for energy transition), which in turn drives our client engagement;
- Ramping up key decarbonisation technologies, such as hydrogen, batteries, carbon capture and storage, and bioenergy, along with sustainable finance solutions;
- All front-office staff and Natixis CIB management HR objectives (and thus compensation) now include our GWF colour mix and temperature targets.

Green Weighting Factor:

The Green Weighting Factor (GWF) is a unique proprietary tool developed by Natixis CIB and deployed since September 2019 to all its financing with the aim to achieve several key objectives:

- Accelerate the transition of our activities towards sustainable finance and encourage our clients to improve their environmental footprint, systematically integrating the risk of climate transition into our financing activities;
- Manage our climate alignment and, finally;
- Prepare for future climate regulations.

This internal tool has enabled Natixis CIB to set climate impact targets for each of its activities in 2021 and should ultimately support the bank in pursuing its commitment to align its balance sheet with the Paris Agreement objective.

The tool includes both:

1. A comprehensive methodology to assess the climate impact and climate transition risk of each financing (rated on a seven-level colour scale from brown to green); and,
2. An internal capital allocation mechanism that links the amount of internal capital being allocated for each transaction to its level of positive or negative impact on climate change (and other environmental impacts considered material).

All loans with a green colour rating receive a discount of up to 50% to their weighted assets, while the weighting of loans with a negative impact on the climate and the environment is increased by up to 24%. The GWF thus adapts the expected return of each transaction according to the environmental impact of the financed object (project, asset, non-dedicated financing), promoting a change of behaviour within the teams, which in turn drives the development of sustainable finance.

The GWF is an internal mechanism that has no impact on the regulatory Risk Weighted Assets.

After a methodology development phase and a proof-of-concept phase, the GWF was implemented in the bank's IT systems and incorporated in the bank's processes along the lending value chain. It is now deployed on a global scale.

As of December 31, 2021, the GWF tool is applied to the bank's entire balance sheet excluding the financial sector, and now covers close to 89% of Natixis CIB's exposure.

Fully integrated into the bank's lending process, the GWF is a real tool for decision-making, strategic dialogue, and incentives for our operations.

Since the implementation of the tool within the systems and credit processes of Natixis CIB in 2019, the bank's processes and activities have been transformed.

Moreover, a major step was achieved this year with the definition of granular colour mix targets for the CIB and the translation of these into ambitious temperature objectives: 2.5°C by 2024, 2.2°C by 2030 and 1.5°C by 2050, thus actively contributing to our "Net Zero" commitment by 2050. These objectives have been set out for each business line in our 2024 Strategic Plan.

The GWF has thus evolved from an innovative, operational, and decision-making tool at the transactional level to a key tool for managing our transition.

The following section provides a methodology overview of how our GWF colour is used to imply the temperature impact of our activities.

Temperature impact methodology overview:

Natixis CIB combines two different methods to determine the implied temperature rise (ITR) of its balance sheet. The approaches differ depending on the type of financing that is being considered.

For general purpose financing:

Natixis uses the Carbon Impact Analytics (CIA) methods developed by Carbon4Finance[1]. The CIA rating of each company is determined using the same greenhouse gas emission data as that processed by the Green Weighting Factor colour rating for each corporate client.

This method establishes a link between the CIA rating of the company and/or a portfolio and its temperature trajectory of between 1.5°C and 6°C. The model is calibrated using two benchmark scenarios: the 2°C trajectory scenario (scenario 2DS) from the International Energy Agency[2] (IEA), and the 3.5°C scenario from the Intergovernmental Panel on Climate Change[3] (IPCC) RCP6.0 scenario.

[1] https://www.carbon4finance.com/
[2] https://www.iea.org/
[3] https://www.ipcc.ch/

For dedicated purpose financing:

With respect to specific exposures (such as dedicated financing, project financing), the ITR calculation uses the Science-Based 2°C Alignment (SB2A) method developed by ICare & Consult[4] to assess alignment of sector-specific project financing with the Paris Agreement climate targets. Inspired by the Science-Based Targets Initiative[5] (SBTi) and Assessing Low- Carbon[6] (ACT) initiatives, the method was adapted to factor in the specificities of transactions dedicated to project financing, assets, and commodities trading.

The method compares the climate impact of the financed object throughout its lifecycle with the corresponding business area's "carbon budget" in the context of Paris-aligned scenarios. The financed project's climate impact is measured through the physical carbon intensity of each individual asset, which is based on their Green Weighting Factor (GWF) colour rating.

Examples include gCO2e/kWh for power generation, gCO2e/per km for passenger transport and gCO2/m²/per year for real estate.

The ITR index is identified by calculating the difference between the asset's trajectory and its sector-specific 2°C reference trajectory. The International Energy Agency (IEA) and Science-Based Targets initiative (SBTi) reference trajectories are available and in use for the following sectors: electricity, oil & gas, real estate, transport, telecoms and heating networks. In sectors without an IEA or SBTi reference trajectory—mining & metals, petrochemicals, water & waste management and agricultural commodities—each individual asset's temperature is calibrated using sector-specific low-carbon and business-as-usual scenarios.

[4] https://www.i-care-consult.com/
[5] https://sciencebasedtargets.org/
[6] https://actinitiative.org/

BANKING

Transitioning to Net Zero Through Effective Risk Identification and Management[1]

At Standard Chartered our purpose is to drive commerce and prosperity through our unique diversity. This infuses everything we do, connecting our strategy with opportunities to drive growth and deliver our societal ambitions.

We believe climate change represents one of the greatest structural challenges that confront humanity today. The challenge is characterised by an evolving urgency. The world is on pace to warm between 2°C and 3°C by 2100. Unless greenhouse gas emissions decline by 43% by 2030, the goal of the Paris Agreement of limiting global warming to 1.5°C above pre-industrial levels will likely be out of reach, with adverse consequences. There is a ~50% chance global temperature to exceed 1.5°C at least 1 year between 2022-2026.

We have a longstanding commitment to address the impacts of climate change and do our part to accelerate the transition to a low-carbon economy. Underpinned by our sustainability philosophy, we manage our climate impact through three key pillars:

- accelerating access to sustainable finance,
- reducing our direct and financed emissions, and
- tracking and managing the financial and non-financial risks from climate change.

We have a plan to mobilise USD300 billion in green and transition financing by 2030, to help our clients set and reach net-zero targets and have implemented (and are in the process of implementing) related screenings, advisory services and other methods to assess our portfolio and operationalise our target. We will continue to play our part in, seeking to reduce absolute financed thermal coal mining emissions by 85 per cent by 2030 alongside our long-standing commitment to not provide any direct financing to coal-power projects.

In 2021, we facilitated $9.6 billion towards sustainable infrastructure and $22 billion towards renewable energy services.

Our organisational approach is to continue to build on our Climate Risk management capabilities including significant investment in strengthening our skills and expertise in this key area over the past two years. Our focus on integrating climate and sustainability into the Group's decision-making means we must upskill our human capital, operations, policies and procedures.

We recently appointed a Chief Sustainability Officer with the responsibility for chairing the Group Sustainability Forum, driving the Bank's net zero commitments and overseeing the existing Sustainable Finance and Sustainability Strategy teams. Her focus is to deliver our sustainability agenda as we increasingly embed ESG and SDG-related priorities into the work we do for clients and the communities where we operate.

Our Strategy is to identify climate-related risks and opportunities over the short, medium and long term:

- We have assessed the impact of Climate Risk on the banking book under three transition scenarios over a 30-year time horizon, which has enabled us to identify climate risks, strategies to mitigate risk as well as climate-related opportunities.
- In 2021, we identified climate-related opportunities linked to the Bank's net zero in financed emissions approach including aiming to:
  - mobilise $300 billion in green and transition finance
  - reduce absolute financed thermal coal mining emissions by 85%
  - reduce emissions intensity in other high carbon sectors with the interim 2030 targets including power (-63% emissions intensity), steel and mining (– 33% emissions intensity respectively), and oil and gas (-30% emissions intensity).
- We use quantitative and bottom-up tools and methodologies to assess transition and physical Climate Risk and we apply these to our clients, portfolios, and our own operations (including through our supply chain).

A key aspect of our measurement for net zero transition and climate risk mitigation is reviewing a client's approach to transition using the output from our clients' Climate Risk assessments, in particular a client's Transition Risk mitigation score, which will consider both quantitative inputs (e.g. emissions measurement data, emissions reduction targets and capital investment plans), and qualitative overlays through direct client conversations to confirm management focus and commitment.

The speed of decarbonisation is influenced by the availability of technologies and capital as well as the need for a **just transition**. This is particularly critical in the **emerging markets** where we operate and where high-emitting sectors may be disproportionately required for livelihoods and economic growth.

To support our clients' transition to a low-carbon economy in developing markets, we are developing a new 'Engagement Framework' to assess our clients more systematically in the context of the geographies in which they operate. This Engagement Framework follows Paris-aligned decarbonisation trajectories, under which different industries and regions are expected to decarbonise at different rates.

Our current climate-related scenario analysis is based on those from the Network of Central Banks and Supervisors for Greening the Financial System (NGFS) and is premised on three pillars:

- **Hothouse** world scenarios include only currently implemented or pledged policies, which at a global level are insufficient to halt significant global warming resulting in severe Physical Risk .
- **Orderly scenarios** that assume climate policies are introduced early and become increasingly stringent, with both physical and transition risks relatively subdued.
- **Disorderly scenarios** explore higher Transition Risk due to policies being delayed or being divergent across countries and sectors.

Climate Risk is also recognised in our central Enterprise Risk Management Framework (ERMF) as an integrated risk type and is managed in line with the impacted Principal Risk Type, e.g. credit, market, operational etc.

We assess Climate Risk as part of regulatory stress testing through the annual Internal Capital Adequacy Assessment Process (ICAAP), the 2021 Bank of England Climate Biennial Exploratory Scenario (CBES), and local country regulatory stress tests. Client engagement has improved the coverage of data that informs the climate client-level risk assessments being integrated into the credit underwriting process.

We incorporate Climate Risk in our Group-wide risk taxonomy through the ERMF. Climate Risk is defined within the ERMF as:

"the potential for financial loss and non-financial detriments arising from climate change and society's response to it".

Physical Risk

Risks arising from increasing severity and frequency of climate- and weather-related events. These events can damage property and other infrastructure, disrupt business supply chains, and impact food production. This can reduce asset values, potentially resulting in lower profitability for companies. Indirect effects on the macroeconomic environment, such as lower output and productivity, exacerbate these direct impacts.

Transition Risk

Risks arising from the adjustment towards a carbon-neutral economy will require significant structural changes to the economy. These changes will prompt a reassessment of a wide range of asset values, a change in energy prices, and a fall in income and creditworthiness of some borrowers. In turn, this entails credit losses for lenders and market losses for investors.

Key Challenges

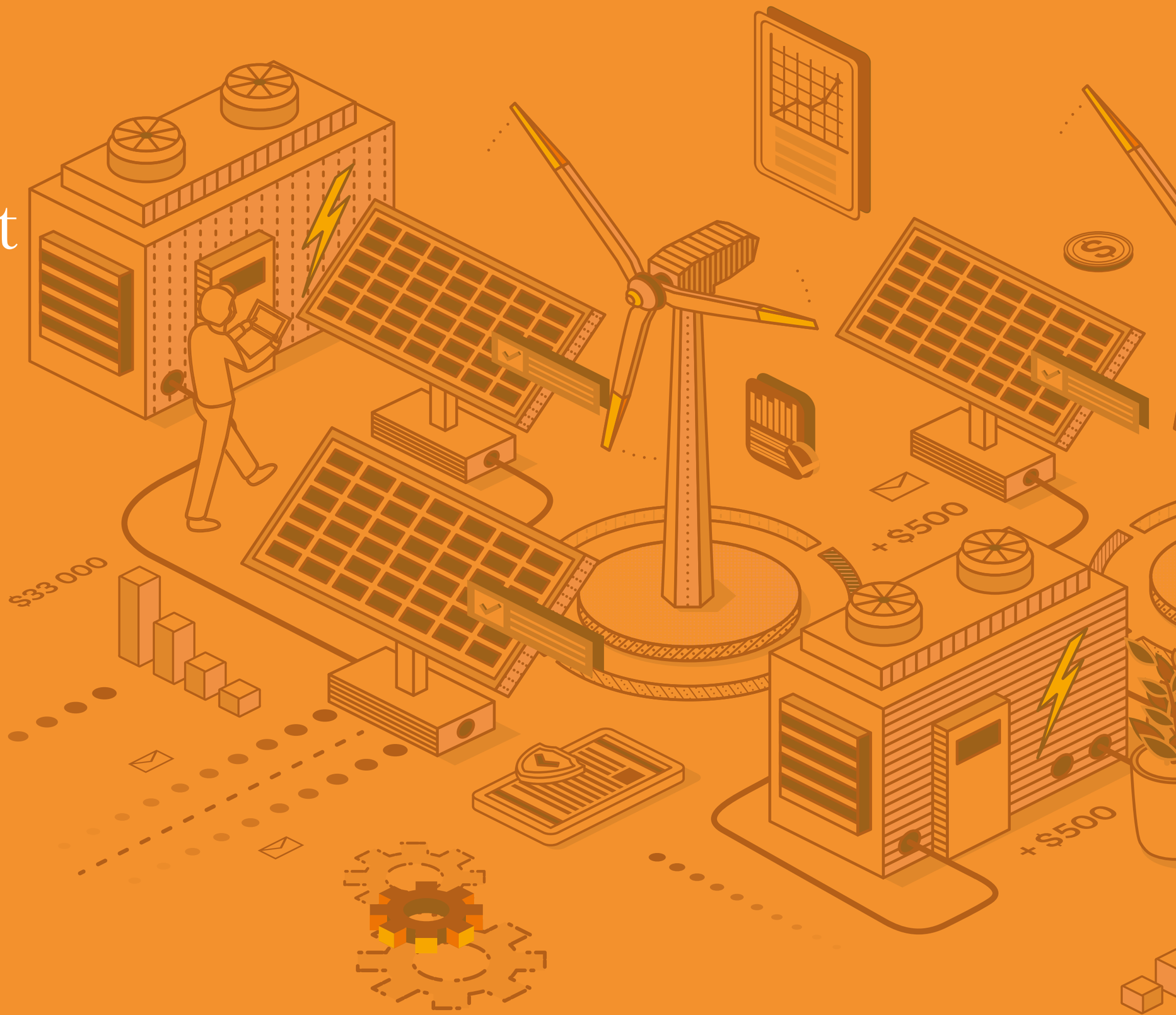
Currently, the financial sector faces various challenges in quantifying and precisely understanding where and how climate change will impact activities, operations, clients and economies. These include:

- Lack of available or verified data e.g., non-listed clients, inconsistent client disclosures, geocoding difficulties.
- How climate risk will crystallise depends on the speed and effectiveness of the transition, which is dependent on the actions of governments, corporations, and individuals.
- Temperature rise is certain, but the exact location and nature of weather events are less clear.
- Methodologies and tools available to identify climate are nascent and evolving, rendering it challenging to accurately pinpoint and quantify climate risk and financial losses.

To achieve net zero targets by 2050, almost half of the emissions reduction needed relies on technologies that are not yet commercially available. The severity of global warming depends on the speed of innovation, development and deployment of these technologies such as carbon capture storage, circular uses and other yet-to-be-developed solutions.

[1]The purpose of this document is to provide a high level overview of some of the Bank's risk modelling and approach. Opinions and estimates should be regarded as indicative and for illustrative purposes only. For more information please refer to our Climate-related Financial Disclosures Report 2021 (tcfd-climate-change-disclosure.pdf) and Climate Change Position Statement: (Position on Finance and Climate Change | Standard Chartered (sc.com) which sits within our environmental and social risk management framework (www.sc.com/en/sustainability/position-statements/our-framework)

Asset Management



FRANKLIN TEMPLETON

Sustainable investing amid shifting global standards

As a global ESG investor, the Franklin Templeton Fixed Income group navigates a complex mesh of international and national regulations. While some markets are shifting towards a highly regulated sustainable investing landscape, others remain driven by portfolio managers' concerns over environmental and social risks to investment returns, as well as clients' demand for products exceeding baseline regulatory requirements.

Given that a significant amount of our funds and separately managed accounts are registered in the EU or marketed to clients within EU member states, it should be no surprise that recently introduced European regulations have impacted our ESG strategies. These policies include the Sustainable Finance Disclosure Regulation, the Implementation of Sustainability Preferences Under MiFID II and relevant member-states' local guidelines, such as from the Autorité des marchés financiers or Bundesanstalt für Finanzdienstleistungsaufsicht.

Many of our group's strategies, shaped by these regulations, consist of four pillars: sustainable investment commitment, best-in-class investing, rigorous screening and solid engagement policy. Depending on the exact fund investment policy, we commit to invest between 5% and 100% of net asset value towards financing economic activities advancing environmental and social goals, such as but not limited to, renewable energy, biodiversity, the circular economy, social cohesion and tackling inequalities.

This is achieved by investing in eligible green, social or sustainability bonds, the frameworks of which follow international standards, or in "pure play" companies, where the majority of products or services contribute towards sustainable goals (for example, our funds hold "plain vanilla" bonds issued by Deutsche Bahn and Vestas, acknowledging their business of, respectively, public transportation and wind power generation, as environmentally and socially positive).

In addition to direct investments in sustainable projects, we use proprietary systems to rank companies based on their ESG characteristics and promote investing in those classified as best-in-class, even if their product or service is not necessarily green. Leveraging our ESG datasets, we screen out issuers which we perceive as ESG outliers and those causing significant harm to environmental and social objectives. Our screens include absolute- and relative-based filters. The former is based on set thresholds, for example, certain strategies won't invest in any company that derives more than 5% of its revenue from thermal coal or any sovereign with a Corruption Perception Index score below 35. For relative filters, we typically exclude a certain number of worst-scoring issuers from the investable universe, e.g., for most of our European strategies, 20% of companies and sovereigns are filtered out based on their greenhouse gas emissions.

Finally, the fourth cornerstone of our strategy is to engage with issuers – we are transitioning towards data-driven engagement, using data to precisely identify opportunities and challenges unique to each investee and to make sure we address the most material of these during engagement meetings.

To ensure systems create the greatest synergies, they must be integrated into a global sustainable investment ecosystem. We would argue that the basis of that ecosystem should be harmonised regulatory standards coupled with the transparent flow of ESG information between different market players.

From a regulatory perspective, the most crucial aspect for asset managers is having common definitions for sustainable investments and the required restrictions for funds marketed as "green" (or similar).

Policies towards nuclear energy, natural gas as a transition fuel, or the transformation of polluting industries vary greatly among definitions of sustainable investments, exclusion policies or local taxonomies. This might lead to a situation where "a common denominator" of eligible investments is so marginal, that managing a global sustainable fund would be virtually impossible. A possible solution may be to adopt harmonised regulations or give asset managers more discretion over forming their own ESG strategies under a comply or explain policy. The second challenge for a sustainable investing ecosystem is the lack of disclosure by issuers. While our proprietary ESG data systems greatly facilitate our understanding of sustainability risks and opportunities, without solid data sources the operability of those systems is limited. While engagement with our investees has a potential to improve reporting, regulatory-driven requirements would be the quickest and the most reliable means to achieve transparent ESG disclosure. These standards should include a harmonised set of metrics to be disclosed. We recognise Principle Adverse Impact Indicators, for example, as a good attempt at "enforcing" a level playing field by making all market participants report the same standardised data points.

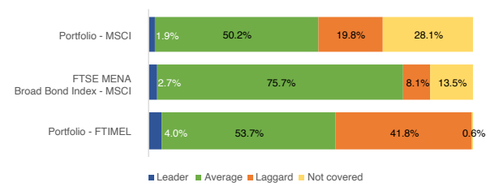
Disclosure challenges – the reality of data in the region

The opportunities and challenges presented by the lack of adequate disclosure are well documented in the GCC region, which is fortunately undergoing a wave of reform to adapt to evolving global standards and to integrate sustainability across business practices. Commitments at the Government-level are driving rapid adoption by businesses, however, it is still early days and hurdles to implementation are a reality.

One of the biggest challenges in the region has been inadequate data availability to assess the ESG standing of corporates. There have been improvements over the past few years but we still have a long way to go.

A quick portfolio-level analysis of one of our regional funds (57 holdings) highlights these data challenges with MSCI, our primary ESG data vendor, not covering 28% of the holdings. This is overcome by internal scoring systems. Our proprietary ESG database covers 99.4% of the portfolio. However, a downside to the lack of universal disclosure is that our models need to rely on assumptions, rather than verified reported data. Additionally, scores assigned by an external party allow asset owners and other market participants to compare green credentials of different asset managers. Despite these data challenges, we feel there is much change and progress.

ESG Ratings Distribution



Source: FTIMEL (Franklin Templeton Investments Middle East Limited). Franklin Templeton ESG analysis of own portfolios versus MSCI and FTSE indices. September 2022.

FRANKLIN TEMPLETON

Strong positive momentum – the tides are turning

There is much improved appreciation for the need to incorporate ESG principles in the region with governments taking the lead. GCC governments have, for example, announced energy transition targets that encourage companies to play their part and assume their responsibility in reducing emissions.

GCC Net-Zero Commitments

Country	Net-zero commitment	Target date	Climate-related investment commitments	Renewables contribution to electricity
Saudi Arabia	Yes	2060	$187 billion in climate action by 2030	50% by 2030
United Arab Emirates	Yes	2050	$163 billion in clean and renewable energy by 2050	50% by 2050
Bahrain	Yes	2060	N/A	5% by 2025
Oman	Considering	2050	N/A	20% by 2027
Kuwait	No	N/A	N/A	N/A
Qatar	No*	N/A	N/A	N/A

*N/A -- Not available. Source: S&P Global Ratings, UAE Government portal, Reuters, Enerdata, The National, Al Arabiya. *Member of Net-Zero Producers Forum.*

On the Social front, labour reforms (especially the dismantling of the Kafala system) across GCC member states has been a transformative change resulting in greater freedom of movement and freedom to switch jobs for non-residents. Equally significant has been the increase in female participation in the labour market in Saudi Arabia.

On the Governance front, increasing gender diversity in Boards is the single-biggest reform currently underway. The UAE government has already taken a lead here, mandating at least one female Board member for all listed companies in March 2021. We are seeing industry ESG leaders like Majid Al Futtaim and First Abu Dhabi Bank announce internal targets to increase workforce diversity, including at mid/senior management and executive levels.

One of the key challenges we listed earlier was inadequate reporting which limits transparency, often driving a negative ESG view of entities within the region from external agencies. However, there is tangible progress on this front with local exchanges enacting ESG disclosure rules for listed companies.

Summary of ESG disclosure rules for listed companies across the GCC region

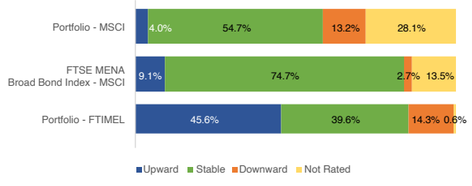
Market	SSE member	ESG rule	ESG guidance	Details
Bahrain	Yes	No	Yes	The Bahrain Bourse issued its ESG Reporting Guide in 2020
Kuwait	Yes	No	Yes	Boursa Kuwait introduced a Sustainability Disclosure Guide in 2017 and effectively upgraded this into its ESG Reporting Guide in 2021
Oman	No	No	Expected	While the MSX has not yet issued any ESG guidance, in 2021 it announced the establishment of a new section to focus on ESG issues, as well as Diversity and Inclusion. In 2022, the Oman CMA (Capital Market Authority) stated that it is committed to introducing ESG guidelines fr MSX-listed companies
Qatar	Yes	Expected	Yes	The Qatar Stock Exchange introduced Guidance on ESG Reporting in 201 and plans to make ESG disclosure mandatory in the next 1-2 years
Saudi Arabia	Yes	No	Yes	The Saudi Exchange issued its ESG Disclosure Guidelines in 2021
UAE - Abu Dhabi	Yes	Yes	Yes	The ADX ESG Disclosure Guidance was published in 2019, and in 2021, the Securities and Commodity Authority (SCA) required all companies listed on UAE exchanges to disclose a sustainability report in accordance with GRI Standards and any requirements issued by respective stock exchanges
UAE - Dubai	Yes	Yes	Yes	The DFM ESG Disclosure Guidance was published in 2019, and in 2021, the Securities and Commodity Authority (SCA) required all companies listed on UAE exchanges to disclose a sustainability report in accordance with GRI Standards and any requirements issued by respective stock exchanges

Source: Sustainable Stock Exchange (SSE) Initiative, news reports, Stock Exchange websites

We are seeing a positive momentum across the region with a large number of companies releasing or committing to the release of their first ever Sustainability/ESG report. This is driving a sharp increase in the number of companies reporting explicitly on ESG parameters, which is reflected in ESG momentum indicators that we capture for the issuers in our region. 27% of 97 issuers in the region have positive ESG momentum as per our internal ESG assessment, underscoring the broader positive trajectory.

For one of the bond funds referenced previously, we note that 45.6% of the 57 holdings have positive ESG momentum as evidenced below.

ESG Ratings Momentum



Source: FTIMEL (Franklin Templeton Investments Middle East Limited). Franklin Templeton ESG analysis of own portfolios versus MSCI and FTSE indices. September 2022.

Rapid ESG evolution with the opportunity to do much more

Governments and corporates acknowledge the rapidly evolving thinking around ESG risk management across the globe and within the investment world. Not only will this disrupt the existing way of doing business, but create opportunities for those who adapt to the new realities.

While fossil-fuels are still a key source of energy in the region, immense potential exists to develop solar and wind power. In turn, these **low cost renewable energy sources could drive the economics of more advanced and mobile energy solutions like green hydrogen which could be exported**. We are already seeing initial steps in this direction with several GREs actively involved in setting up renewable capacity while national oil companies like Saudi Aramco and ADNOC are already undertaking pilot projects in blue ammonia exports and stating plans to develop green hydrogen plants.

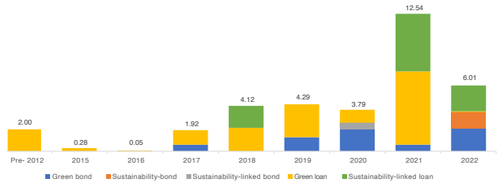
The sharp jump in sustainable finance issuances in 2021 and 2022 highlight the shift in how the region is looking at ESG. From our perspective, with a growing commitment to invest in sustainable projects across our funds, we seek exposure to these initiatives through green, social and sustainability bonds, with frameworks that adhere to recognised international standards (e.g. ICMA), and which in the future might be reinforced by national ESG bond standards.

Within the corporate space, we see tremendous opportunity for entities to improve the quality of their disclosures and how they integrate and manage ESG principles. We appreciate and acknowledge industry ESG leaders like First Abu Dhabi Bank, Qatar National Bank and Majid Al Futtaim (to name a few) that have clearly set themselves apart in terms of the quality of internal organisational structures, their clear articulation of where ESG fits into medium and long term business strategies and the adoption of well-defined performance metrics to assess progress over the short, medium and long run. However, the majority of companies in the region are still far from these levels and this is where the opportunity lies for all stakeholders.

This is equally a tremendous opportunity for asset managers to engage with and guide companies through this transition as we help them understand investor expectations and fast-track learnings from ESG leaders. Over the last couple of years, we have been actively engaging with companies and seen positive improvements in how management teams view ESG and the quality of their disclosures. We see this reflected in our ESG scores and momentum indicators.

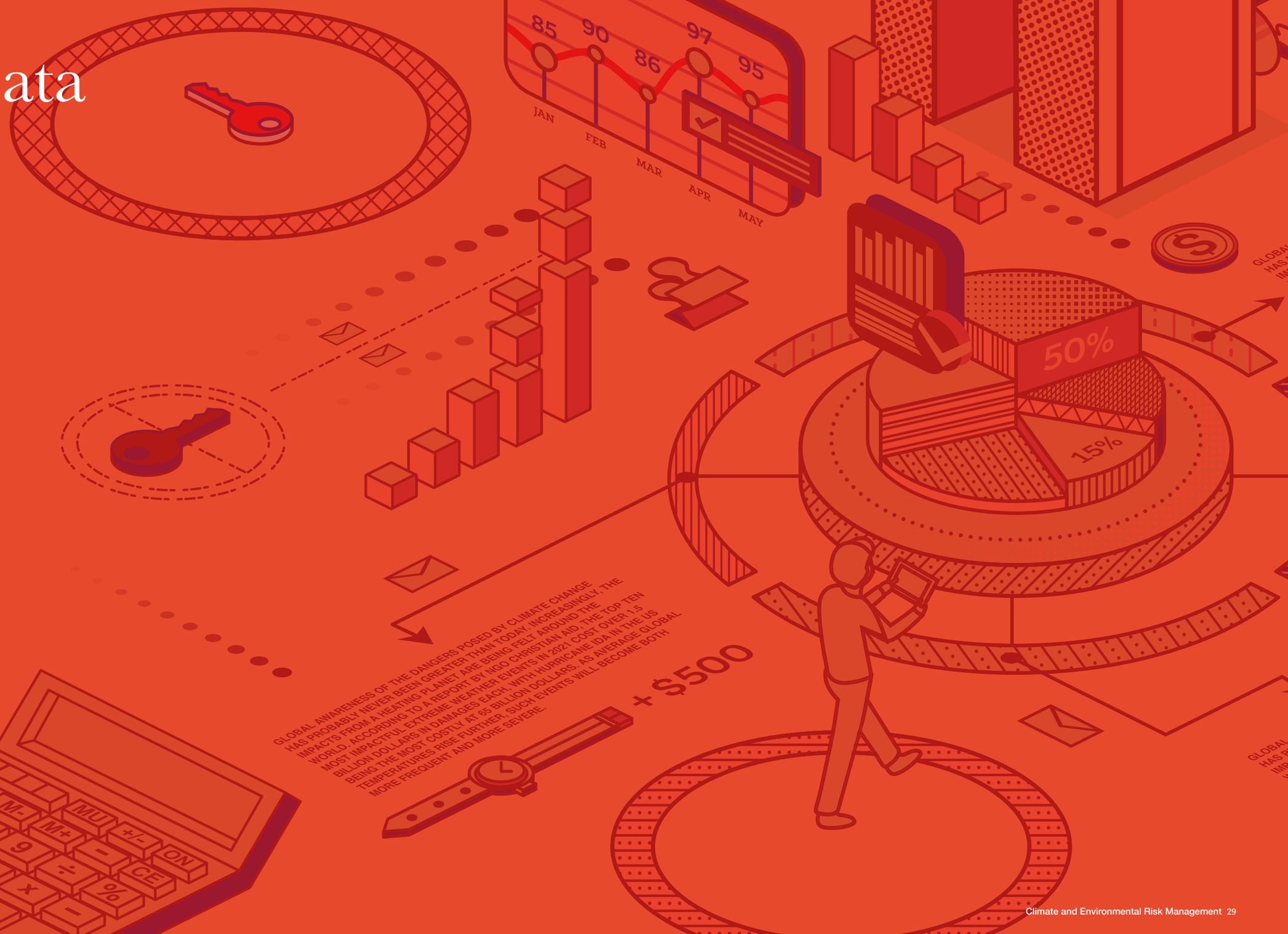
The integration of sustainability in business activities across the globe is the need of the hour with climate change a key challenge for the world, and the GCC clearly has a significant role to play. The region is still at an early stage with respect to ESG integration and reporting but we are optimistic that recent policy change will deliver positive results and position the region as an attractive destination for responsible and sustainable investment. This is a tremendous opportunity for asset managers to contribute to and participate in, and consistent with our long term strategy for the MENA region.

Sustainable Debt Issued ($bn) by Instrument Type



Source: BloombergNEF. September 2022.

ESG Data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GLOBAL AWARENESS OF THE DANGERS POSED BY CLIMATE CHANGE HAS PROBABLY NEVER BEEN GREATER THAN TODAY. INCREASINGLY, THE IMPACTS FROM A HEATING PLANET ARE BEING FELT AROUND THE WORLD. ACCORDING TO A REPORT BY NGO CHRISTIAN AID, THE TOP TEN MOST IMPACTFUL EXTREME WEATHER EVENTS IN 2021 COST OVER 1.5 BILLION DOLLARS IN DAMAGES EACH, WITH HURRICANE IDA IN THE US BEING THE MOST COSTLY AT 65 BILLION DOLLARS. AS AVERAGE GLOBAL TEMPERATURES RISE FURTHER, SUCH EVENTS WILL BECOME BOTH MORE FREQUENT AND MORE SEVERE.

Bloomberg

Climate risk is already a reality

Global awareness of the dangers posed by climate change has probably never been greater than today. Increasingly, the impacts from a heating planet are being felt around the world. According to a report by NGO Christian Aid, the top ten most impactful extreme weather events in 2021 cost over 1.5 billion dollars in damages each, with Hurricane Ida in the US being the most costly at 65 billion dollars. As average global temperatures rise further, such events will become both more frequent and more severe.

Against this backdrop, political willingness to implement policies that reduce greenhouse gas emissions, and thereby limit global warming, is growing. China, the EU and other countries have already implemented emissions trading schemes, introducing an explicit cost of emissions for companies. In addition, companies around the world are setting targets to reduce their carbon footprint and align themselves to climate targets. Ultimately, global emissions will need to reach net zero to prevent the earth from warming further.

The path to net zero is not without risk, however. Mounting pressures to decarbonise are leading to costs and reputational risks for companies in sectors where emissions are hard to abate. Within the financial community, this is referred to as transition risk. At the same time, the growing impact from extreme weather events will gradually lead to higher economic costs, reinforcing the need to invest in climate adaptation strategies.

Challenges for investors

Savvy investors will want to be hedged against both transition risk and physical risk, while maintaining good investment returns. To do this well, investors need to address three fundamental challenges:

1. **Understanding how companies are exposed to climate risk.** To determine a company's exposure to climate-related risks investors need non-financial data, unlike for traditional types of financial risk. For transition risk, for example, key factors to take into account include a company's carbon footprint and its transition plans. Such data is not traditionally reported by companies, and to help investors plug that gap vendors have developed models to estimate emissions, and solutions to estimate net zero trajectories. More and more companies also decide to disclose their data, thanks to efforts by the Task Force for Climate-related Financial Disclosures (TCFD), as well as regulatory initiatives that follow TCFD recommendations, but it is still far from standardised. Similarly, for physical risk, key factors for risk assessment are typically not reported. Such factors include a company's physical facility locations and its supply chain dependencies.
2. **Deriving the potential impact from climate risk.** As climate change is unprecedented, forward-looking data and models are needed to capture the potential financial impact from climate risk. Forward looking data is provided by climate scenarios, which give plausible predictions of how climate policies, energy technologies and the physical environment could evolve. With a myriad of scenarios to choose from, however, picking the right one is a challenge. In addition to scenarios, forward-looking financial models are needed. For the purpose of assessing climate risk, such models would need to have two novel features. First, they would need to be able to account for climate transmission channels, such as the impact of a carbon price on a company's profit forecast. Second, they would need to account for longer time horizons, as climate risks may materialise over the course of decades.
3. **Incorporating climate risk assessments into investment decisions.** Given that climate risk assessments rely on non-traditional datasets and models, questions arise around how to use the insights from such assessments in actual investment decisions. For example, how should longer term climate risks be factored into shorter term investment strategies? How should different future scenarios be weighted so as to allow for probabilistic impact metrics, such as a ClimateVAR?

In light of these challenges, the task of incorporating climate financial risk in investment decisions can feel overwhelming. However, thanks to increasingly reliable data and insightful analytics, climate risk management is set to become business as usual.

Empowering investors to manage the risks

As a leading global financial data provider, Bloomberg has a key role to play in enabling investors to navigate the challenges posed by climate change. We offer data-driven insights that help investors integrate ESG throughout the full investment process, including company-reported and third-party ESG data, news and research, carbon emissions estimates, indices, scores, analytics and regulatory solutions.

Here are some of the ways in which we aim to empower investors to address the aforementioned challenges:

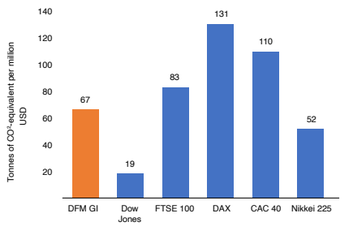
- **Flexible analytics.** To help investors understand what a company's climate risk exposures are, we offer a flexible range of insights. Rather than providing a single climate risk exposure score, we provide multiple scores highlighting different types of exposure, such as a company's current carbon emissions profile, its business model readiness for transition, etc. Each score is based on a transparent set of underlying indicators, which can each be explored. Thus, investors can make up their own mind about which factors they consider most relevant for their assessment, and generate insights accordingly.
- **High coverage and transparency.** An investor's job would be impossible if they could only assess companies that report climate-related data. There simply isn't enough reported data available yet. We therefore apply estimation techniques to make climate data available for as wide a range of companies as possible, guided by a waterfall principle. We apply this, for example, to our carbon emissions datasets. If reported emissions data is available, this is the preferred dataset. If it isn't, the waterfall mechanism automatically reverts to our inhouse emissions estimates model, which applies machine learning techniques to produce a reliable estimate of the company's emissions. For some companies, there is not enough data available to apply these machine learning techniques. In such cases, the waterfall reverts to an industry-implied estimate, which utilizes information of a company's peers to estimate its emissions. These estimates are accompanied by a reliability score, using the scale that has been proposed by the Partnership for Carbon Accounting Financials (PCAF), alerting investors at the quality of the underlying datapoint. Bloomberg also leverages this broad coverage of carbon emissions data to provide fund-level ESG metrics for ETFs and mutual funds using a holdings-based analysis that not only calculates

Bloomberg

Figure 1: Carbon footprint metrics for the DFM General Index and other major indices

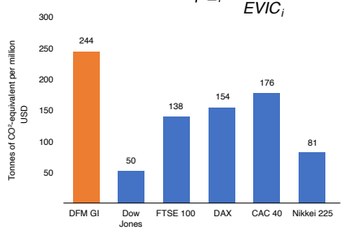
Emissions intensity per dollar invested

$$\sum_i \frac{Position_i}{EVIC_i} \times GHG_i \Big/ \sum_i Position_i$$



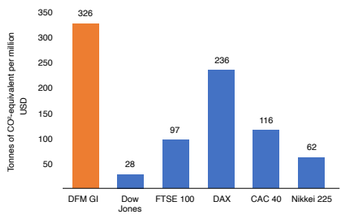
Emissions intensity per dollar revenue

$$\sum_i \frac{Position_i}{EVIC_i} * GHG_i \Big/ \sum_i \frac{Position_i}{EVIC_i} * Rev_i$$



Weighted average carbon intensity

$$\sum_i \frac{Position_i}{\sum_j Position_j} * \frac{GHG_i}{Revenue_i}$$



Coverage of greenhouse gas emissions data for the DFM General index: reported and estimated with Bloomberg's machine-learning model

	Scope 1	Scope 2
Reported	51%	48%
Estimated	48%	41%
No Data	1%	1%

Source: Bloomberg
In all charts, greenhouse gas emissions include Scope 1 and Scope 2.

the average emissions per fund, but also the percentage of assets where the company is self-reporting. These metrics provide valuable and objective insights at the fund-level where investors often must rely on self-identified ESG labels and names.

- **Detailed transition scenarios.** To analyse transition risk as well as to spot transition opportunities, investors need reliable scenarios of how the transition might evolve and insights into how companies could be affected. Our dedicated new energy research arm, BloombergNEF, provides an annual long-term scenario analysis on the future of the energy economy covering electricity, industry, buildings and transport, as well as the key drivers shaping these sectors until 2050. Building off of these scenarios, it becomes possible to derive the transition impacts on a company's revenues. Specifically, by considering how the demand for products and commodities shifts in each of the BloombergNEF transition scenarios, it is possible to calculate a company's revenues-at-risk.

- **Probabilistic risk estimates.** To make strategic climate-informed decisions, it is crucial to understand how company performance could be impacted across a range of scenarios. Bloomberg has established a strategic partnership with climate data and analytics provider Riskthinking.AI to accelerate the availability of climate risk data and analytics. Using advanced data technologies, Riskthinking.AI is able to take a stochastic approach to climate risk, incorporating a range of possible future outcomes and their associated probabilities. This is powered by a large database of scientific climate change projections, journal articles, and structured expert judgment. The objective is to provide investors with a systematic view of both the climate tail risks they are exposed to, and the most likely outcomes.

- **Workflow integration.** Climate risk data and tools also need to be integrated into investment decision-making processes. Bloomberg is enhancing its widely used order and portfolio management solutions to make it easier for investment firms and banks to integrate ESG in their workflows. For example, by making more climate data available in PORT, an analytical tool that allows portfolio managers and risk managers to understand fund characteristics, performance attribution and impacts under forward-looking risk scenarios. We also provide screening tools across equity, fixed income, and funds, allowing investors to pick, or exclude, investments that meet their own specified criteria. For clients that have their own in-house models, the Bloomberg query language provides a way to integrate our climate data in custom-built applications in an interactive way.

Taking action to promote sustainable finance

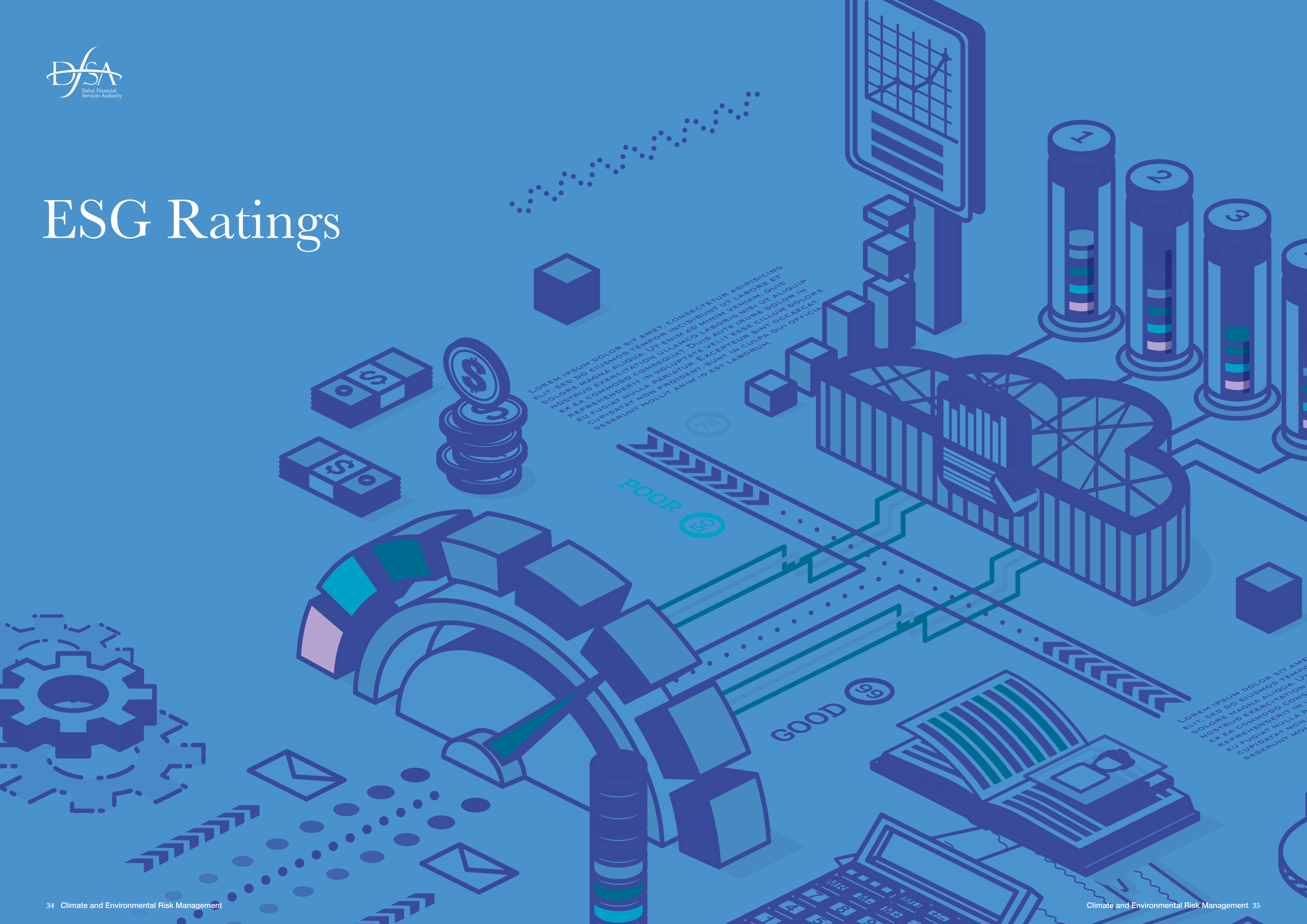
In parallel to helping investors navigate the challenges posed by climate change with data, analytics and tools, Bloomberg also plays a leading role in industry initiatives to promote sustainable finance. In 2021, during the United Nations' COP26 climate conference, Bloomberg worked with other businesses to raise climate ambitions across the financial system. A major outcome of the conference was the establishment of the Glasgow Financial Alliance for Net Zero (GFANZ), a private sector-led initiative anchored in the UNFCCC's Race to Zero framework and co-chaired by Michael R. Bloomberg. GFANZ is committed to accelerating and mainstreaming the decarbonisation of the world economy and reaching net-zero emissions by 2050.

Bloomberg is also leading a number of efforts to unlock private-sector investment in clean energy and low-carbon solutions, including the Climate Finance Leadership Initiative (CFLI). In addition, Bloomberg helped launch the Financial Stability Board's Task Force on Climate-related Financial Disclosures (TCFD) as part of efforts to drive accurate and comparable disclosure from companies.

As part of the company's wider efforts on sustainable finance, Bloomberg and the Egyptian Exchange (EGX) have invited listed companies in Egypt and across the Middle East to take part in the Gender-Equality Index (GEI) and disclose gender-related data and practices.

Lastly, Bloomberg Philanthropies is at the forefront of global efforts to fight climate change and protect the environment across a key array of issues. Its objectives include accelerating the transition from coal to clean energy, improving air quality and public health, advancing city climate action, protecting and preserving ocean ecosystems and helping to unlock billions of dollars in sustainable finance. Working with partners, it has already helped retire two-thirds of coal-fired power plants in the U.S. and half in Europe, with the next phase of work aiming to close a quarter of the world's remaining coal plants by 2025.

ESG Ratings


LOREM IPSUM DOLOR SIT AMET, CONSECTETUR ADIPISICING ELIT, SED DO EIUSMOD TEMPOR INCIDIDUNT UT LABORE ET DOLORE MAGNA ALIQUA. UT ENIM AD MINIM VENIAM, QUIS NOSTRUD EXERCITATION ULLAMCO LABORIS NISI UT ALIQUIP EX EA COMMODO CONSEQUAT. DUIS AUTE IRURE DOLOR IN REPREHENDERIT IN VOLUPTATE VELIT ESSE CILLUM DOLORE EU FUGIAT NULLA PARIATUR. EXCEPTEUR SINT OCCAECAT CUPIDATAT NON PROIDENT, SUNT IN CULPA QUI OFFICIA DESERUNT MOLLIT ANIM ID EST LABORUM.
POOR
GOOD

S&P Global

ESG Scoring and the Corporate Sustainability Assessment

Overview

At S&P Global, we have always believed that financial analysis is incomplete if it ignores material extra-financial factors. Sustainability trends such as resource scarcity, climate change or an aging population continuously reshape a company's competitive environment. We are convinced that companies that can adapt to such challenges through innovation, quality and productivity enhance their ability to generate long-term shareholder value. The annual Corporate Sustainability Assessment (CSA) was developed more than 20 years ago in order to identify companies that are better equipped to recognise and respond to emerging sustainability opportunities and challenges presented by global and industry trends.

ESG datasets that rely solely on public data suffer time lags and do not always reflect the most topical sustainability information. At S&P Global we engage companies on the most relevant and timely sustainability questions via the CSA, so you can see new topics each year and gain cutting-edge ESG insights long before they reach most companies' public disclosures. Emerging topics are gradually phased into a scoring framework that especially rewards companies that choose to make this information public, which incentivises improved corporate disclosure.

Companies collectively contribute hundreds of thousands of hours in every assessment cycle, while S&P Global analysts validate disclosures for both accuracy and relevance, discuss methodologies and measurement best-practices, and provide ongoing feedback. Unlike any other ESG dataset available in the market today, S&P Global ESG Scores – and the CSA research process that underpins them – form the basis of a unique ecosystem that actively drives corporate disclosures and raises the bar on sustainability standards over time.

CSA at a Glance

- Since 1999, the annual Corporate Sustainability Assessment (CSA) has been conducted to serve as the framework for measuring corporate sustainability performance, forming the research backbone for the construction of the S&P Global ESG Scores. The S&P Global ESG Scores are used in the construction of the Dow Jones Sustainability Indices (DJSI) and other S&P Global ESG indices.
- A universe of over 10,000 companies is invited to participate in the CSA research process on an annual basis
- 61 industries derived from the GICS industry classification system are analysed using industry specific questionnaires[1]
- Companies are evaluated based on a range of financially relevant sustainability criteria covering the economic, environmental and social dimensions
- Companies receive a S&P Global ESG Score between 0–100 which can be used to compare against other companies in the same industry
- The CSA identifies sustainability leaders across all industries, enabling investors to track their performance and integrate sustainability considerations into their portfolios

[1]The Global Industry Classification System (GICS) is the most broadly used industry classification system for companies.

Focus on Financial Materiality

The starting point for the CSA is our materiality framework, which draws upon more than 20 years of experience in integrating sustainability into the investment process. For each of the 61 industries evaluated through the CSA, our analysts conduct materiality analysis to identify those sustainability factors that drive business value and that have the greatest impact on stakeholders. This analysis results in a materiality matrix for each industry, which serves as the basis for determining the applicability and weights of the various sustainability criteria in the CSA. The financial materiality analysis focuses on industry-specific business value drivers that contribute to company performance. It leverages our quantitative research, which identifies which intangible factors have demonstrated the clearest correlations to past financial performance.

Most importantly however, the materiality analysis draws upon the experience of the industry analysts, who determine which long-term economic, social or environmental factors are likely to have the most significant impact on a company's business value drivers of growth, cost or risk, and ultimately, future financial performance. This includes understanding the links between impacts on the environment and society and how these translate into impacts on a company. Each factor is analysed and ranked according to the magnitude and likelihood of its impact on the company's business value drivers and financial performance over time. Those factors that are considered to have the greatest impact are given the highest weighting in the CSA. An example of a materiality matrix for the Pharmaceuticals industry is provided in Figure 1.

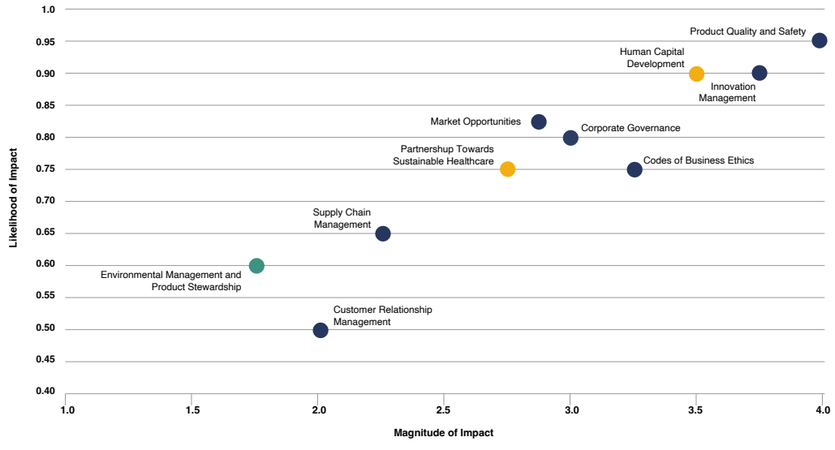


Figure 1

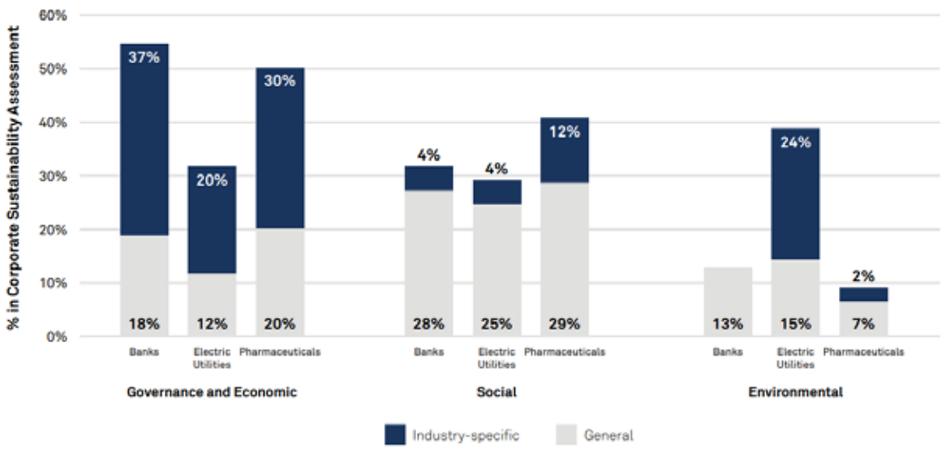
S&P Global

A Comprehensive Analysis with an Industry-Specific Focus

Based on major global sustainability challenges identified by our analysts at S&P Global ESG Research, general criteria relating to standard management practices and performance measures such as Corporate Governance, Human Capital Development and Risk and Crisis Management are defined and applied to each of the 61 industries. The general criteria account for approximately 40–50% of the assessment, depending on the industry.

The remaining part of the CSA is made up of industry specific risks and opportunities that focus on economic, environmental and social challenges and trends that are relevant to companies within that industry. This focus on industry-specific criteria reflects our conviction that industry-specific sustainability opportunities and risks play a key role in a company's long-term success and allows us to compare companies against their own peers in order to identify sustainability leaders. For instance, a manufacturing company's management of its exposures to climate change risks cannot be compared to a bank's response to climate change. Therefore, for industries with complex supply chains and logistics, the assessment focuses on evaluating their efforts to manage carbon emissions, whereas for financial services providers, the assessment focuses on whether companies address climate change through their financial products or by offering innovative funding schemes that encourage a transition towards a low-carbon economy.

The relative weights of the economic, environmental and social dimension of the questionnaire vary by industry. For example, as shown in Figure 2, the environmental dimension warrants a higher weighting in the Electric Utilities industry than in the Banking or Pharmaceuticals industries.



Source: S&P Global ESG Research

Figure 2

Case Study: Understanding how S&P Global ESG Scores Change Over Time

After markets closed on April 30, 2021, Oracle Corporation (Oracle) was added to the S&P 500 ESG index as part of the annual rebalance after previously not meeting selection criteria in the April 2020 rebalance. Importantly, between 2020 and 2021, Oracle's S&P Global ESG Score changed from 29 to 32. Although the S&P 500 ESG Index uses an adjusted form of S&P Global ESG Scores, it's helpful to take a closer look at the underlying company changes that led to the S&P Global ESG Score improvement – which bolstered the company's chance at S&P 500 ESG index inclusion.

Environmental	Social	Governance
The Operational Eco-Efficiency and Climate Strategy Criterion represents a combined 14% of the overall weight of the S&P Global ESG Score for Software companies. Between 2020 and 2021, Oracle improved its score significantly on its Climate-Related Management Incentives Question by introducing monetary incentives tied to climate-related KPIs for its Chief Sustainability Officer and Environmental Steering Committee members, contributing to an improved Climate Strategy score from 28 to 58 that helped lift its ESG Score.	All companies are expected to have firm commitments towards respecting and upholding human rights of their employees and other stakeholders regardless of industry. This includes the fair treatment of employees, prevention of discrimination and harassment and equal opportunities for all. One area in which Oracle improved was its Human Rights Commitment. Between 2020 and 2021, the company extended its Partner Code of Ethics and Supplier Codes of Conduct to reaffirm its commitments.	The Corporate Governance criterion of the Governance & Economic Dimension is the most highly weighted overall criterion for Software companies, contributing to 9% of the overall ESG Score. Between 2020 and 2021, Oracle's performance improved significantly on its CEO to Employee Pay Ratio.

Conclusion

The transition to a sustainable future is gaining tremendous momentum. Accelerated by a growing understanding by market participants of the value creation opportunity, ESG considerations are now being taken into account in the decision-making process not only in the context of mitigating risk, but also as a strategic consideration to remain competitive and foster innovation.

The S&P Global ESG Scores provide a granular measurement of a company's sustainability performance, from broad market to industry-specific sustainability topics with unparalleled depth and breadth of insight into corporate sustainability practices drawing on decades of engagement with thousands of companies each year.

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