CLIMATE CHANGE POLICY AND REGULATORY FRAMEWORK IN THE NATIONAL PAYMENT

National Payment System Department

Consultation paper – March 2025

SOUTH AFRICAN RESERVE BANK

CONTENTS

1. **Definitions** 3
2. **Background** 6
3. **Introduction** 10
4. **Purpose** 12
5. **Scope** 12
6. **Policy objectives** 13
7. **Risks and challenges of climate change to the NPS** 15
8. **The impact of climate change resilience of the NPS on the South African economy** 19
9. **Benefits of climate change mitigation and greener NPS** 21
10. **South Africa's response to climate change and climate change initiatives** 22
11. **International analysis** 26
12. **Policy recommendations for climate change in the NPS** 32
13. **Conclusion** 40
14. **Comments, consultation questions and contact details** 41

ABBREVIATIONS 45

1. Definitions

1.1 This section defines the terms used in the consultation paper. Where a term is not defined, its definition is aligned with previous documents of the South African Reserve Bank (SARB) National Payment System Department (NPSD). These include policy papers, position papers, information papers, interpretation notes, and directives as well as the National Payment System Act, 1998 78 of 1998, as amended (NPS Act), National Treasury (NT) technical paper titled 'Financing a Sustainable Economy'[1] and the Climate Change Bill.[2]

1.2 **Climate change** refers to change in the climate caused directly or indirectly by human activities that alter the composition of the global atmosphere. These changes are in addition to the natural climate variability observed over comparable time periods.

1.3 **Climate-related risks** refers to the exposure of payment system financial market infrastructures (FMIs), payment institutions, the national payment system (NPS) and the financial system to physical or transition risks caused by or related to climate change.

1.4 **Environmentally friendly payments** refers to payment products, activities and services that are provided in a sustainable manner and are less harmful to the environment.

1.5 **Environmental, social and governance (ESG)** factors include the integration of environmental and social (E&S) risks into governance framework, specifically risk management frameworks and systems of payment institutions and payment system FMIs and actively managing and mitigating those risks.

[1] National Treasury (NT). 'Financing A Sustainable Economy' Technical Paper. 2021. Technical Paper
[2] Climate Change Bill. 2022. Climate Change Bill

1.6 **Environment-related risks** refers to the risks posed to payment system FMIs, payment institutions, NPS and financial sector by to activities that could potentially cause or be affected by environmental degradation. This includes issues, such as air pollution, water pollution and the scarcity of fresh water, land contamination, loss of biodiversity and deforestation.

1.7 **Greenhouse gas emissions** are gaseous components of the atmosphere, originating from both natural and anthropogenic activities (i.e. processes, objects, or materials that are derived from human activities), that absorb and re-emit infrared radiation.[3]

1.8 **A greener NPS** aims to ensure that South Africa's entire payment process contributes in the transitioning to a low-carbon economy. This will prevent further climate change by reducing the carbon footprint, addressing climate change risks and maintaining a resilient NPS.

1.9 **Greener payments** refer to payment processes, systems, infrastructures, products and services that are environmentally friendly, ensuring minimal impact on climate change.

1.10 **Material climate related risk** refers to any climate related risk that could disrupt the critical operations and services provided by payment institutions and payment system FMIs. This type of risk has the potential to impact interconnected payment institutions within the NPS.

1.11 **The NPS** refers to means the system in the Republic of South Africa that enables the flow of funds from a payer to a payee and encompasses the total payment process in the Republic, including the payment, clearing and settlement systems, infrastructures, mechanisms, institutions, activities, agreements, procedures, rules and laws.

[3] Climate Change Bill. 2022. Climate Change Bill

1.12 **Nature-related financial risks** refer to the potential the risks of negative effects on economies, payment institutions, the NPS and financial systems that arise from physical and transition risks.[4]

1.13 **Payment institutions** refers persons designated, authorised, registered or regulated under the NPS Act, including, but not limited to, clearing system participants, settlement system participants, third-party payment providers and system operators.

1.14 **A payment system FMI** is a multilateral system among payment system participants, including the operator of the system, used for the purposes of clearing, settling or recording payments, and includes a systemically important payment, clearing or settlement system and a prominent payment, clearing or settlement system.

1.15 **Physical risks** include the economic costs and financial losses of both acute climate-related events (e.g. heatwaves, drought, floods, hurricanes and wildfires) and the chronic impacts of climate change (e.g. rising temperatures, sea levels and changes in precipitation). These acute events can impair or destroy asset values, properties, systems and infrastructure of payment institutions in some regions. On the other hand, the chronic impacts of climate change will require a significant level of investment and adaptation from payment institutions and other NPS stakeholders to prevent losses of revenue and capital erosion.[5]

1.16 **Sustainable finance** contributes to achieving the sustainable development goals,[6] and ensuring a just transition to a low-carbon and climate resilient economy and maintaining financial stability. It encompasses financial models, services, products, markets and ethical practices aimed at

[4] Network for Greening the Financial System (NGFS). Nature-related Financial Risks: a Conceptual Framework to guide Action by Central Banks and Supervisor. September 2023. Nature-related Financial Risks Framework
[5] NGFS Climate-related litigation: Raising awareness about a growing source of risk. November 2021. Climate-related litigation Framework
[6] 4th SDG Youth Summer Camp. 'The 2030 Agenda for Sustainable Development's 17 Sustainable Development Goals (SDGs)'. September 2020. 2030 Agenda Goals

delivering resilience and long-term value in economic, environmental, social and governance aspects. This is achieved when the financial sector evaluates environmental and social risk exposure and opportunities at the portfolio and transaction levels, using science-based methodologies and best practice norms; discloses and mitigates these risks and links these two products, activities and capital allocations.[7]

1.17 **Transition risks** relate to the adjustment process towards a low-carbon economy aimed at mitigating climate change. This includes the introduction of new policy and regulation measures, technological developments, and changes in consumer preferences.

a. Transition risk primarily encompasses three key drivers. The first is technological developments that could render less environmentally friendly technology obsolete. The second is behaviour or social change, where consumers and investors demand more environmentally sustainable products and services. The third driver, which includes legislative or governmental policy changes intended to shift to a lower-carbon economy, such as carbon pricing or emission caps, also poses a risk.[8]

b. Transition risks affect the profitability of payment institutions and the wealth of households and users of payment products and services, creating financial risks for lenders and investors. The process of reducing emissions is likely to have a significant impact on all sectors of the economy, affecting financial asset values. While urgent action is desirable, an abrupt transition could also broadly impact the safety, efficiency and integrity of the NPS, financial stability and the economy.

2. Background

[7] NT. 'Financing A Sustainable Economy'. Technical Paper. 2021. Technical Paper

[8] NGFS. 'Climate-related litigation: Raising awareness about a growing source of risk'. November 2021. https://www.ngfs.net/sites/default/files/medias/documents/climate_related_litigation.pdf

2.1 In recent years, climate change has become a focal point of discussions in the financial sector, with increased emphasis focus on the potential risks of climate change to financial stability. International organisations and Standard-Setting Bodies (SSBs) such as the Financial Stability Board (FSB),[9] the Network of Central Banks and Supervisors for Greening the Financial System (NGFS), Committee on Payments and Market Infrastructures (CPMI),[10] and International Organization of Securities Commissions (IOSCO), International Monetary Fund (IMF),[11] and the World Bank[12] have launched several initiatives on addressing financial risks and financial stability risks emanating from climate change. Climate change has further become an important area of focus in the Group of Twenty(G20) and World Economic Forum agenda in recent years.

2.2 The NGFS[13] noted that climate-related risks are a source of financial risk, and it is therefore within the mandates of central banks and supervisors to ensure the financial system is resilient to these risks. In this regard, central banks and supervisors should maintain an orderly transition in the financial system, assess the systemic risk and where necessary address it with regulatory and supervisory tools to maintain financial stability. Understanding of the links between broader climate policies and the mandates of central banks and supervisors is crucial.

2.3 The Prudential Authority (PA) of the SARB established the PA Climate Task Team (PACTT) in 2019, to promote, develop and coordinate the PA's regulatory and supervisory response to climate risks. In 2021, the SARB formulated a Climate Change Programme (CCP) with seven thematic areas. Additionally, the Intergovernmental Sustainable Finance Working Group (ISFWG) was established in 2021 to leverage existing climate

[9] Financial Stability Board (FSB). 'FSB Roadmap for Addressing Financial Risks from Climate Change Progress report'. July 2023. Progress report
[10] Bank for International Settlements (BIS). 'Focus on the BIS's work on climate'. November 2024. Focus on the BIS's work on climate
[11] International Monetary Fund (IMF). The IMF and climate change webpage. The IMF and climate change
[12] World Bank. Climate change webpage. News research and data
[13] NGFS. NGFS First Progress Report. October 2018. Progress Report

structures, within the SARB, PA, Financial Sector Conduct Authority (FSCA), South African Revenue Service (SARS), NT and the Department of Forestry, Fisheries and the Environment (DFFE) to collaborate on climate initiatives and develop and coordinate South Africa's climate positions. The SARB's strategy and work programme are guided by the recommendations of the NGFS, which are also informed by the FSB and the G20.[14] While efforts are coordinated within the SARB, each department is responsible for developing and executing its own climate-related work programme.[15]

2.4 The Financial Stability Department of the SARB developed a drought scenario for the main systemic banks to assess its potential impact on their operations and balance sheets. These findings were shared in the second edition of the 2021 Financial Stability Review (FSR).[16] Furthermore, the results of the 2023/24 Insurance Common Scenario Stress Test were shared in the first edition of the 2024 FSR[17]. The SARB has collaborated with the International Food Policy Research Institute, the University of Cape Town and the National Institute for Economic and Social Research in London to develop models and scenarios for stress testing. The SARB's Economic Research Department has produced various working papers examining how technological and policy developments, such as carbon pricing in other countries might impact financial and monetary policy, as well as establishing a climate change modelling framework for financial stress testing.

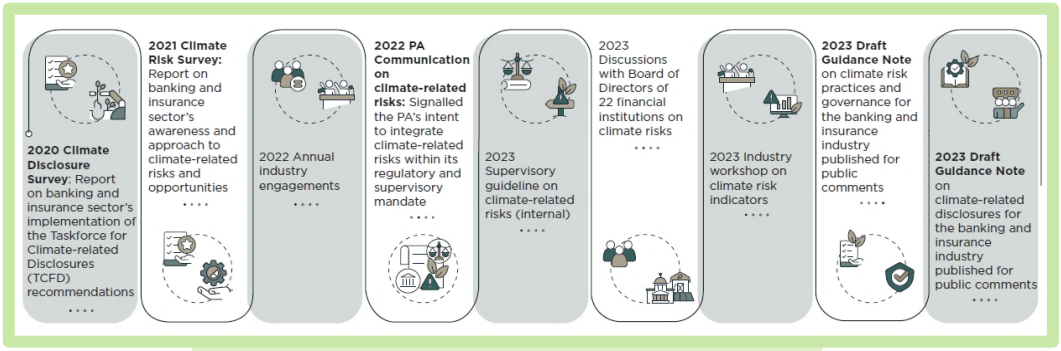
2.5 The PA has conducted industry surveys, held several industry engagements and issued numerous publications on climate-related risks. It also published the Prudential Communication 10 of 2022 Climate-related Risks[18] which outlines its initial views on climate-related risks and their potential impact on financial institutions supervised by the PA. The

[14] South African Reserve Bank (SARB). SARB Annual Report 2021/22. SARB Annual Report 2021/22
[15] SARB Annual Report 2021/22. SARB Annual Report 2021/22
[16] SARB. Financial Stability Review. Second edition. 2021. Financial Stability Review Second Edition
[17] SARB. Financial Stability Review. First edition. 2024. Financial Stability Review First Edition
[18] Prudential Authority (PA). Prudential Communication 10 of 2022 – Climate-related Risks. August 2022. Prudential Communication 10 of 2022

communication highlighted the importance of considering the potential impacts from climate-related risks on the business of financial institutions.

2.6 In 2023, the PA[19]. conducted 2 Board engagements focused on climate-related risks and the observations were published in a Climate Risk Observations report.[20] In 2024, the PA published a Guidance on climate-related disclosures, governance and risk practices, which are aligned to international standards from the International Sustainability Standards Board (ISSB), the Basel Committee on Banking Supervision (BCBS) and the International Association of Insurance Supervisors (IAIS). The PA developed a supervisory guideline on climate-related risks is developing climate risk indicators to be used supervision of climate-related risks.

Figure 1: Timeline of activities to date



Representation and participation in key committees:

- Basel Committee on Banking Supervision (BCBS) Taskforce on Climate Risks
- International Association of Insurance Supervisors (IAIS) Climate Risk Steering Group

And key networks

- Network for Greening the Financial System (NGFS)
- Sustainable Banking and Finance Network (SBFN)
- Sustainable Insurance Forum (SIF)
- Intergovernmental Sustainable Finance Working Group (ISFWG)

Source: SARB PA

[19] PA. G2-2023 – Guidance note issued regarding matters related to the Flavour of the year. https://www.resbank.co.za/content/dam/sarb/publications/prudential-authority/pa-deposit-takers/banks-guidance-notes/2023/2-of-2023/G2-2023%20-%20Flavour%20of%20the%20year.pdf and Prudential Communication 1 of 2023 – Flavour-of-the-year topic communication to insurers. March 2023. https://www.resbank.co.za/en/home/publications/publication-detail-pages/prudential-authority/pa-public-awareness/Communication/2023/Prudential-Communication-1-of-2023-Flavour-of-the-year-Insurers

[20] PA. G3-2024 – Guidance on climate-related disclosures for banks. May 2024. https://www.resbank.co.za/en/home/what-we-do/Prudentialregulation/climate-related-risk

2.7 Against this backdrop, the NPSD[21] of the SARB was tasked to develop a climate change policy and regulatory framework/position paper on climate change-related risks that may negatively impact the NPS, while exploring the accompanying opportunities.

3. Introduction

3.1 Various risks that impact the efficiency and safety of payment systems and payment institutions, including credit, liquidity, operational and settlement risks. These risks[22] have been mitigated over decades to ensure minimal disruption to the NPS and the financial sector. Natural drivers of climate change such as changing weather patterns and long-term temperature shifts were traditionally mitigated by and managed under operational risk management. However, human activities like burning fossil fuels like natural gas, oil and coal and deforestation have increased greenhouse emissions and global warming, exacerbating the severity of climate change.

3.2 Climate change has various consequences, both natural and economic. Natural consequences include drought, floods, high temperatures and scarcity of fresh water, all of which impact humans and infrastructure, including operating payment systems. Natural disasters such as floods may damage properties and infrastructure, disrupting the operations of payment systems and payment institutions and the overall functioning of the NPS.

3.3 Climate change may impact the economy in various ways. For example, natural disasters caused by climate change may negatively impact output in sectors such as agriculture, forestry and tourism which may lead to slower economic growth. Furthermore, climate change could undermine the

[21] In terms of section 10(1)(c) of the South African Reserve Bank Act 90 of 1989, as amended (SARB Act), the SARB is required to perform such functions, implement such rules and procedures, and, in general, take such steps as may be necessary to establish, conduct, monitor, regulate and supervise payment, clearing or settlement systems. The SARB plays an important role in ensuring the safety, efficiency and resiliency of the national payment system (NPS).

[22] Traditional risks are risks categories to which payment institutions are exposed (operational, credit, liquidity and settlement) and that are generally incorporated in their risk management plans and processes.

ability of policymakers to maintain macroeconomic stability due to increasing supply-side shocks from weather events such as tropical storms or coastal flooding. It can also affect price stability through carbon pricing, which may impact monetary policy.

3.4 Disruptions emanating from the natural consequences of climate change may result in climate-related shocks[23] on the global economy spilling over to domestic economies due to their interconnectedness. Macroeconomic policies may need to be adjusted or new policies introduced to address the economic impact of these climate shocks.

3.5 Climate change poses a systemic risk to payment institutions, payment system FMIs, the NPS and the broader financial system. Disruptions resulting from the natural consequences of climate change can affect the operations of payment systems and business continuity of payment institutions. Such disruption could affect the NPS and financial system potentially leading to a systemic event.

3.6 Extreme weather events may impact the operations and availability of payment systems, infrastructure, and critical payments services provided by payment system FMIs, resulting in disruption to the NPS. For example, floods may damage infrastructural, properties and information technology (IT) hardware, impacting the operations of payment institutions and payment system FMIs. Furthermore, such damage may hinder the ability of payment system FMIs to clear and settle payment obligations, potentially resulting in a systemic event.

3.7 The financial sector, which includes the NPS, has played an essential role in mitigating climate change by developing initiatives to supporting climate change initiatives. One main effort is the adoption of green finance

[23] Climate-related shocks are unexpected deviations from normal weather and environmental patterns that are induced by climate change which may result in natural disasters, floods, droughts, heatwaves, rising sea levels and extreme weather events. Climate-related shocks may negatively impact the economy.

initiatives. Notably the South African banking industry voluntarily adopted the Task Force on Climate-related Financial Disclosures' (TCFD) framework for the disclosure of climate-related risks[24].

3.8 Building resiliency to climate related risks and shocks is vital for payment institutions, payment system FMIs, the NPS and the broader financial system. In this regard, the SARB, as the regulator, supervisor and overseer of the NPS, requires that payment institutions, particularly payment system FMIs, implement measures to mitigate the risk of climate change and promote a greener NPS that is environmentally friendly and contributes to addressing climate-related risks.

4. Purpose

4.1 The purpose of this consultation paper is to propose a policy and regulatory framework for managing climate-related risks for payment institutions and payment system FMIs in the NPS, and to gather feedback from the industry and stakeholders.

4.2 The paper seeks to promote the contribution of the NPS in the transition to a low-carbon economy and creating a climate resilient NPS.

4.3 The paper promotes a greener NPS that is environmentally friendly and contributes to addressing climate-related risks.

5. Scope

5.1 The scope of the consultation paper covers all payment institutions, including payment system FMIs in the NPS.

[24] PA. Climate Risk Practices Observation Report. 2024: Observation Report

6. Policy objectives

6.1 The consultation paper aims to ensure that the proposed policy and regulatory framework for climate change risks and greener payment institutions and NPS. The consultation paper is focussed on supporting the following objectives, which are aligned to the SARB's mandate[25] and the goals of the National Payment System Framework and Strategy[26] (Vision 2025).

6.1.1 **Safety, efficiency, and integrity of the NPS:** The mitigation of climate change risks must be implemented with a robust risk and governance framework that prioritises the safety, efficiency and integrity of payment institutions, payment system FMIs and the NPS. If not managed properly, these risks associated with climate change discussed in this consultation paper, may disrupt payment institutions, payment system FMIs, the NPS, and the broader financial system. This could further undermine public confidence in the safety, efficiency and integrity of the NPS.

6.1.2 **Financial stability:** The SARB is responsible for protecting and enhancing financial stability, and payment institutions, especially payment system FMIs, are integral to maintaining financial stability**.** Climate change risks discussed in this consultation paper may impact the ability of payment institutions and payment system FMIs to operate effectively and efficiently in the NPS. In addition, climate change risks can contribute to and exacerbate a systemic risk event if the climate change risks are not

[25] In terms of section 10(1)(c) of the SARB Act, the SARB is required to perform such functions, implement such rules and procedures, and, in general, take such steps as may be necessary to establish, conduct, monitor, regulate and supervise payment, clearing and settlement systems. Furthermore, the NPS Act provides for the management, administration, operation, regulation and supervision of payment, clearing and settlement systems in the Republic of South Africa, and for connected matters. The power to perform the functions as provided in the SARB Act and NPS Act is performed by the National Payment System Department (NPSD) within the SARB. The SARB plays an important role in ensuring the safety, efficiency and resiliency of the NPS.
[26] SARB. The National Payment System Framework and Strategy – Vision 2025. Vision 2025 .(The Vision 2025 framework maps out the overarching industry vision for the future of South African payment systems. The framework captures nine goals that industry stakeholders should pursue collaboratively to achieve the vision outlined in the framework.)

adequately monitored, managed and mitigated by payment institutions and payment system FMIs. As a result, financial shocks could be passed from one payment institution or payment system FMI to others. The effects of such a disruption could extend well beyond the payment system FMIs and their participants, threatening the stability of domestic and international payment systems, financial systems and the broader economy. The business continuity plans (BCPs) of Payment institutions and payment system FMIs should be resilient to climate-related risks as this could prevent a systemic event and reduce the impact of climate-related risks on financial stability.

6.1.3 **Clear and transparent regulatory and governance framework:** This consultation paper aims to establish a clear and transparent policy and regulatory framework for addressing climate change risks and promoting a greener NPS. To ensure the stability and safety of payment systems, all payment institutions and payment system FMIs should adhere to clear and transparent regulations and governance frameworks for climate change risks and a greener NPS**.** The proposed policy and regulatory framework for climate change risks and a greener NPS will highlight the importance of climate change adaptation in the NPS and foster climate change mitigation and green payment initiatives.

6.1.4 **Transparency and public accountability:** Climate change disclosures applicable to payment institutions and payment system FMIs are included in the proposed policy and regulatory framework for climate change risks and a greener NPS to ensure payment institutions and payment system FMIs are publicly accountable for any contributions to climate change and are transparent about initiatives to contribute to a greener NPS and climate change mitigation.

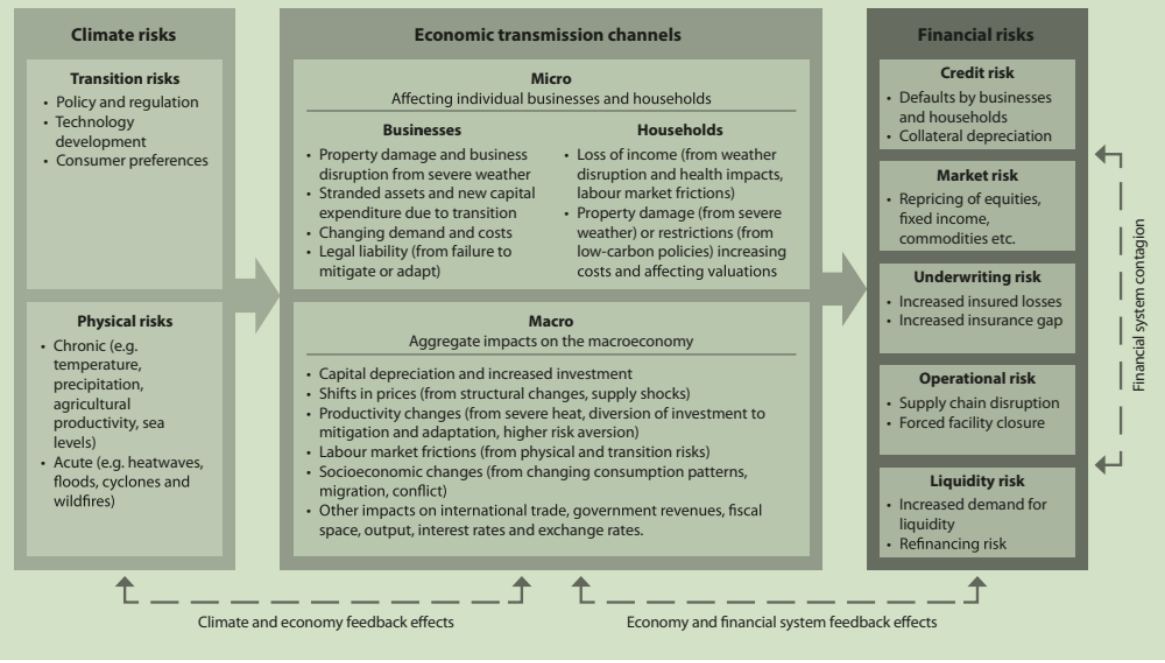
6.1.5 **Promoting competition and innovation:** The SARB supports efforts to increase competition in specific layers of the payment services value chain to foster the development of innovative services while continuing to ensure the safety and efficiency of the NPS. Greener payment activities, systems,

infrastructures, products and services could increase competition and innovation in the NPS and introduce new players in the payments ecosystem.

7. Risks and challenges of climate change to the NPS

7.1 Climate risks as illustrated in Figure 1 could affect the NPS, economy and financial system through a range of different transmission channels. The ability to identify and price climate-related risks is a key enabler for payment institutions and payment system FMIs in integrating climate-related risks and opportunities into their risk management and business strategies. Furthermore, the climate-related risks and transmission channels can aid regulators in integrating climate-related risks into their policy and regulatory frameworks. Paragraphs 7.2 to 7.5 below elaborate further on how some of the risks illustrated below may impact the NPS.

Figure 2: Climate change risks and the transmission channels



Source: NGFS

7.2 Operational risks

7.2.1 **Physical risk**: Extreme weather events emanating from climate change directly impact the operational risks payment institutions and payment system FMIs face, leading to the disruption of critical payment services such as clearing and settlement. Climate change also impacts payment system FMIs' compliance with Principle 17 of the Principles for Financial Market Infrastructures (PFMI), which relates to operational risk. Therefore, payment system FMIs must ensure that their BCPs make provision for climate change-induced disasters and the extent to which it will affect the recovery of operations to enable the fulfilment of obligations.

7.2.2 **Loss of key resources**: Climate change can potentially lead to loss of key resources due to adverse weather events such as floods, droughts and hurricanes, which may potentially destroy important resources such as water supply, agricultural production as well as infrastructure. Payment institutions and payment system FMIs may be adversely impacted by lack of access to key resources which may affect the normal daily operations and as a result potentially impact the provision of critical services.

7.3 Financial risks

7.3.1 **Credit risk**: The PFMI define credit risk as the possibility that a counterparty will be unable to fulfil its financial obligations when they are due or at any time in the future. The default of a participant (and its affiliates) has the potential to cause severe disruptions to a payment system FMI, its participants, the NPS and financial system. Therefore, an FMI should establish a robust framework to manage its credit exposures to participants and the credit risks arising from its payment, clearing and settlement processes. Climate change increases the severity and frequency of extreme weather events, which heighten the possibility of credit risk. Such weather events can lead to participants defaulting on their obligations due to operational disruptions. In severe cases if the business continuity sites are located within the same region as the participants, disruptions to these

BCP sites may further impact participants' ability continue operations and settle obligations.

7.3.2 **Liquidity risk**: According to the PFMI, liquidity risk arises when an FMI, its participants, or other entities cannot settle their payment obligations when they are due during clearing or settlement process. Depending on the design of an FMI, liquidity risk can arise between the FMI and its participants, between the FMI and other entities (such as its settlement banks, nostro agents, custodian banks, and liquidity providers), or between participants in an FMI. It is particularly important for an FMI to manage its liquidity risk carefully, especially if, as is typical in many systems, it relies on incoming payments from participants or other entities during the settlement process to make payments to other participants.

a. Climate change increases the risk of liquidity issues for payment institutions in meeting their settlement obligations in the real time gross settlement (RTGS) system. For example, an event related to climate change may disrupt payment systems and infrastructures, causing payment institutions to be unable to process payment instructions to fund their RTGS accounts for batch settlement. This could lead to the batch being discarded, impacting other payment institutions that are relying on those funds to meet their own settlement obligations in the system.

b. In addition, a climate change event may disrupt the operator of a clearing or settlement system, causing payment institutions to struggle with initiating and receiving funds in the NPS. This disruption could impact the flow of liquidity in both the NPS and financial system.

c. The liquidity levels of participants may be impacted by acute physical risk. For example, recovering from climate-induced floods or hurricanes may disrupt normal operations and affect the participants' liquidity, potentially preventing. them from settling their obligations.

7.3.3 **Underwriting risk for insurance and reinsurance**: Insurance liability in particularly for property and business interruption insurance, will rise significantly rise as more frequent and severe weather events occur. This poses a risk to insurers if their insurance liabilities are not adequately covered. In response, insurers may raise premiums or restrict cover, which could transfer more risk to households, companies and their lenders. Consequently, payment institutions and payment system FMIs could be negatively impacted by the increased cost of mitigating climate risk due to increased insurance expenses. During post-disaster recovery phases, they might receive less insurance funding to rebuild infrastructure, potentially impacting their payment services and participation in the NPS. Furthermore, if insurers are also negatively impacted by severe weather events and unable to provide insurance services, payment institutions and payment system FMIs may dace limited access to insurance, or in extreme scenarios no access to insurance services.

7.3.4 **Transition risk:** The shift to low-carbon economies requires policy adjustments and changes in consumer preferences towards greener environments and eco-friendly payment services. As consumer behaviour evolve and policies change, payment institutions may be required to adjust their strategies and ensure that the strategies do not potentially lead to negative impacts on consumers who are dependent on payment products or activities that may be contributing to climate change. Furthermore, payment institutions and payment system FMIs may need to adapt, develop and implement initiatives supporting the transition to net-zero emissions. Transition risk may also lead to legal liability risk.

a. Legal liability risk may arise from litigation aimed at central banks for their efforts to mitigate climate-related risks or for financing of greenhouse gas emissions. With the urgent need to dramatically reduce greenhouse gas emissions and a perceived lack of sufficient climate action and ambition around the globe, non-profit organisations and individuals are increasingly turning to sue governments and regulatory authorities and private entities internationally.

b. Legal cases may emanate from the notion that the afore -mentioned institutions are failing to take appropriate climate action and should be held accountable for their past actions and, for failing to comply with existing climate obligations and regulations. These cases may be brought against entities alleged to be responsible indirectly or directly, for a climate-related extreme events or impacts.[27] The SARB and payment institutions might face this type of legal liability risk. Additionally, there may be an increased risk of litigation against participants in the due to force majeure clauses in agreements. These clauses typically exempt parties from liability in the event of a catastrophic incident, which is beyond their control, that adversely impacts their ability to fulfil their obligations under the agreement.

7.4 **Financial stability**: Climate change events and conditions can disrupt the operations of payment institutions and payment system FMIs, potentially affecting their ability to clear and settle payments, which could be systemic and adversely affect the entire financial system. These risks are global and impact all entities, sectors and economies. Extreme climate events, as well as a disorderly transition to a low-carbon economy, could destabilise the financial system.

8. The impact of climate change resilience of the NPS on the South African economy

8.1 Payment systems are vital to the South African economy, playing a significant role in fostering economic growth and development, promoting financial inclusion and enabling a digital economy. Therefore, the resilience of payment institutions and payment system FMIs to climate change induced risks is important, as the efficiency of the NPS contributes to a well-functioning economy.

[27] NGFS. 'Climate-related litigation: Raising awareness about a growing source of risk'. November 2021. Climate Related Litigation

8.2 It is vitally important for the payments industry to contribute to climate change mitigation and to support the initiatives outlined in this consultation paper. This can be achieved through the proposed climate change policy and regulatory framework, which will ensure that payment institutions and payment system FMIs help climate change mitigation and minimise the risk of climate change-induced economic shocks.

8.3 Promoting green payments in South Africa and adopting digital payments to mitigate climate change risks will assist in achieving sustainable economic growth. This approach would ensure that consumers and suppliers of goods and services can access payment services even during climate-induced disasters. Consequently, it will enhance the economy's resilience to climate change, enable continuous economic activity and minimise potential losses.

8.4 The payments industry can further contribute to South Africa's low-carbon economy as outlined in the National Development Plan 2030. This can be achieved by developing and implementing payment solutions with lower energy requirements and adopting renewable energy solutions to reduce high electricity demand, which contributes to greenhouse gas emissions. Furthermore, the production and disposal of plastic cards contribute to increased greenhouse emissions. Transitioning payments industry to green payment solutions will help mitigate its impact on climate change.

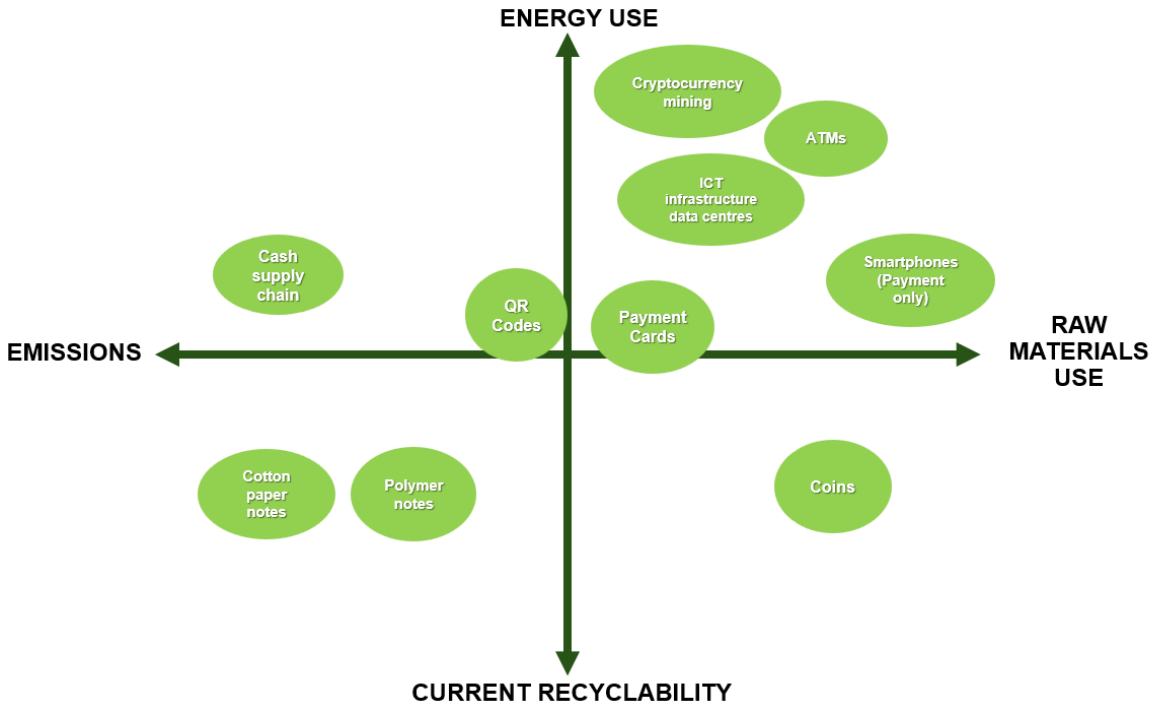
8.5 Innovative environmentally sustainable digital payment solutions are potentially more energy-efficient than using cash, resulting in climate co-benefits. Cashless payments more environmentally friendly because physical cash production and transportation are costly to the environment.[28] See Figure 3 below.[29] Additionally, digital payment services can support

[28] Biagio Bossone. Blog: 'The oversight of payment systems and the green agenda: Part 1.' December 2023. Oversight of payment systems and the green agenda

[29] Biagio Bossone. Blog: 'Central banks, FMIs and the 'green' agenda - Central Banking'. February 2024. Green Agenda

other green finance initiatives. For example, some non-profit organisations leverage on digital payments for project funding.

Figure 3: Means of payment and underlying infrastructure: environmental footprint



Source: Environmental Sustainability of a Cashless Society." Institute and Faculty of Actuaries, London - Rochemont 2018

9. Benefits of climate change mitigation and greener NPS

9.1 Greener NPS

9.1.1 A greener NPS contributes to climate change mitigation initiatives, resulting in improved environmental conditions and a reduced likelihood of extreme weather events causing disruptions. Furthermore, climate change adaptation strategies and initiatives can enhance the resilience of the NPS to climate change by decreasing the chances of climate-induced disasters.

9.1.2 Consumers of payment services may prefer environmentally friendly payment methods and services that support the transition to a greener

economy. The availability of such payment services can improve consumer confidence in payment institutions and their commitment to sustainable payment solutions.

9.1.3 Payment systems depend on technological services and infrastructure for data processing, which currently consume large amounts of electricity. Since coal and other fossil fuels are major sources of electricity worldwide, they contribute substantially to the carbon footprint. Adoption renewable energy in the operations of payment institutions and payment system FMIs, can help reduce the industry carbon footprint.

9.2 Resilient NPS

9.2.1 Climate change could lead to extreme weather events, which can disrupt the operation of payment system FMIs. These disruptions may hinder their ability to continue operations and settle obligations, negatively impacting the safety and efficiency of the NPS and financial systems. Enhancing climate change resilience and adaptation within the NPS improves financial stability, safety and efficiency, ensuring the continuous provision of payments services and fostering a resilient financial system.

10. South Africa's response to climate change and climate change initiatives

10.1 This section of the consultation paper outlines the current state of climate change in South Africa and initiatives developed by various stakeholders to address climate change.

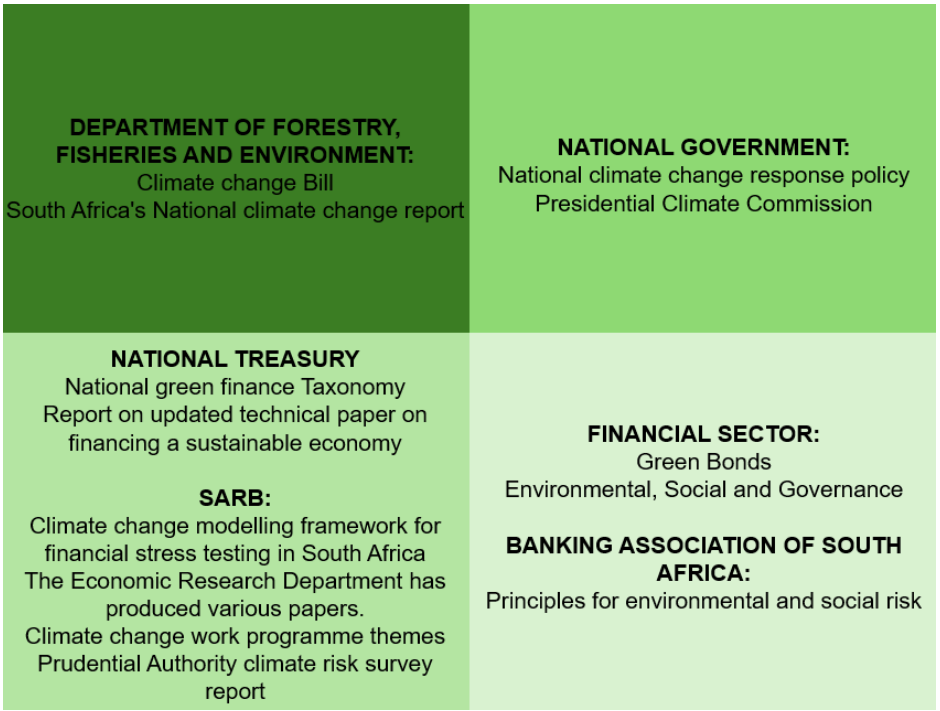
10.2 Climate change poses significant environmental, social and economic challenges around the globe, and South Africa is not exempt to their impacts**.** According to the 2021 World Bank climate risk country profile,[30]South Africa faces challenges such as changing precipitation

[30] World Bank. Climate Risk Country Profile – South Africa. 2021. Country Profile

patterns, which impact the availability of water resources. Extreme weather events such as floods, tropical storms, drought and heatwaves due to rising temperatures are likely to continue in South Africa. These rising temperatures also impact the country's energy generation as they limit the cooling capacities of power stations that generate electricity.

10.3 The impact of climate change in South Africa has led to f various initiatives by both the private and public sectors. The public sector, particularly national government, has prioritised climate change following the Paris agreement. Figure 4 below depicts the various initiatives which are further discussed in the consultation paper.

Figure 4: Climate change initiatives in South Africa



10.4 The South African government issued the National Climate Change Response Policy[31], to ensure the country has a comprehensive medium-to long-term plan and strategies for mitigating and adapting to climate change.

[31] Department of Forestry, Fisheries and the Environment (DFFE). National Climate Change Response White Paper. 2012. White Paper

Furthermore, in 2020, the President of South Africa (President) established the Presidential Climate Commission (PCC). This independent, multi-stakeholder body is chaired by the President and is designed to oversee and facilitate a just and equitable transition towards a low-emissions and carbon-resilient economy. The PCC developed and adopted the Just Transition Framework which sets out policy measures by different social partners to minimise the economic and social impacts of the climate transition.

10.5 NT published the *Updated Technical Paper on Financing a Sustainable Economy* in October 2021, which includes South Africa's response to climate change. In addition, NT launched the South African Green Finance Taxonomy in 2022.[32] The objective of the taxonomy is to ensure that financial sector participants track and monitor the credentials of their green activities in a consistent and comparable way.

10.6 In February 2022, the DFFE introduced the Climate Change Bill (Bill) to Parliament. It aims to create a legal framework that addresses the climate change impact and supports a long-term transition to a low-carbon and climate-resilient economy. Parliament passed the Bill on 25 April 2024.

10.7 In 2022, the SARB published a working paper titled 'A climate change modelling framework for financial stress testing in Southern Africa'. The paper outlines the modelling frameworks available for the assessment of the impact of climate change in South Africa. These frameworks will assist the financial sector and its regulators forming partnerships to develop scenarios that can assess the impact of climate-related risks. Additionally, the SARB has issued other working papers discussion the effect of national and international carbon-pricing policies.

[32] NT. *South Africa's Green Finance Taxonomy*. 2022. https://sustainablefinanceinitiative.org.za/wp-content/downloads/SA-Green-Finance-Taxonomy-1st-Edition-Final-01-04-2022.pdf

10.8 The SARB Annual Report 2022/23[33] highlights seven climate change work programme themes that are coordinated by a steering committee and managed by various departments in the SARB. The themes include regulatory, macroprudential and supervisory frameworks, monetary policy as well as a net-zero strategy for central banks. As a central bank, the SARB is taking measures to reduce its own carbon footprint and developing a net-zero strategy which will be achieved under work programme seven.

10.9 The FSCA issued a Statement on Sustainable Finance and Programme of Work. The statement highlights the FSCA's positions on sustainability which includes ensuring that sustainability is entrenched in the FSCA's business operations and the strategic objective of promoting the development of an inclusive and sustainable financial system. Furthermore, the FSCA issued the FSCA Sustainable Finance Consumer Risk Report and Roadmap 2024 (the Roadmap).The Roadmap highlights consumer risks in relation to sustainable finance as well as policy recommendations to address the risks identified. The second part of the Roadmap outlines the FSCA programme of work on sustainable finance.

10.10 The Banking Association South Africa has developed principles for managing environmental and social risk. These principles recognise the role of banks in promoting and fulfilling economic and environmental rights. Some of South Africa's banks offer sustainable financing to support climate change initiatives, particularly the transition to a lower-carbon economy. The South African banking sector voluntarily, prioritise ESG compliance, integrating it into business operations and disclosing this compliance to the public through sustainability development reporting.

10.11 The Johannesburg Stock Exchange is developing the Sustainability and Climate Disclosure Guidance alongside the Climate Change Disclosure Guidance. The guidance aligns with, global initiatives on sustainability and

[33] SARB Annual Report 2022/23: SARB 2022/23 Annual Report

climate change disclosure including the TCFD recommendations. It aims to assist listed companies navigate sustainability thinking and disclosure more confidently and meaningfully.

10.12 South Africa's National Climate Change Adaptation Strategy: the development and transition of payment institutions and payment system FMIs to greener NPS will contribute to South Africa's National Climate Change Adaptation Strategy,[34] by strengthening resilience to climate change.

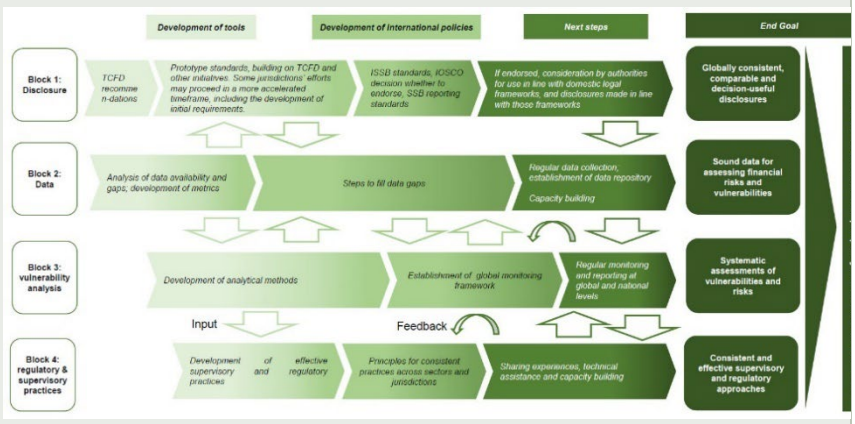
11. International analysis

11.1 There are various global initiatives focused on addressing climate-related financial risks across different jurisdictions. It highlights the role of major financial regulatory bodies and various national authorities, in developing frameworks and guidelines for managing these risks. The table below provides detailed information on the specific initiatives and progress made by each jurisdiction.

Table 1: Overview of interventions on climate related risks in selected jurisdictions and standard-setting bodies

Jurisdiction/Organisation	Initiative
FSB	In 2017, the TCFD, established by the FSB at the request of the G20 finance ministers and central banks, published recommendations to better understand the financial risks related to climate change.[35] It recommended to the G20 that for financial disclosure, global warming scenarios should be used to model the potential risks to companies and economic systems. The FSB is coordinating the work internationally to address climate-related financial risks. In July 2021, the FSB published a comprehensive roadmap to address these risks.[36] The roadmap was endorsed by G20 Finance Ministers and Central Bank Governors and subsequently by G20 Leaders at the Rome Summit. It addressed the need for

[34]DFFE. National Climate Change Adaptation Strategy. October. 2020. Adaptation Strategy
[35]Task Force on Climate-related Financial Disclosures (TFCD). Final Report: Recommendations of the Task Force on Climate-related Financial Disclosures. June 2017. Final Report
[36] FSB. FSB Roadmap for Addressing Financial Risks from Climate Change. 2022. Progress Report

Jurisdiction/Organisation	Initiative
	coordinated action with the large and growing number of international initiatives underway by outlining key actions to be taken by SSBs and other international organisations over a multi-year period in four key policy areas: firm-level disclosures, data, vulnerabilities analysis, and regulatory and supervisory practices and tools depicted in the diagram below.  In October 2022, the FSB published *the Supervisory and Regulatory Approaches to Climate-related Risks: Final report.*[37] In July 2023, the FSB published the *FSB Roadmap for Addressing Financial Risks from Climate Change Progress re*port.[38] The annual report takes stock of progress by SSBs and other international organisations on the actions coordinated through the FSB Roadmap and outlines areas for further attention. In October 2023, the FSB published the *Progress Report on Climate-related Disclosures*.[39] The annual report takes stock of progress made over the past year by the ISSB, national and regional authorities, and firms in making disclosures. The ISSB issued the inaugural International Financial Reporting Standards Sustainability Disclosure Standards in June 2023. The standard disclosure requirements will enable firms to communicate to investors about the sustainability-related risks and opportunities that they will encounter over the short, medium and long term.
NGFS and FSB	In November 2022, the FSB published a joint report with the NGFS on climate-related scenario analysis. The report summarises the findings from various climate scenario analysis exercises undertaken by financial authorities. These analyses were performed at the individual firm level, the financial sector level, and the overall financial system level. The NGFS updated its *Guide for Supervisors* covering both banks and insurers.[40]
BCBS	The BCBS's *Principles for the Effective Risk Management and Supervision of Climate-related Risks,* issued in June 2022, addresses expectations for banks. In particular, the principles set expectations on

[37] FSB. Supervisory and Regulatory Approaches to Climate-related Risks: Final report. October 2022. Progress Report

[38] FSB. FSB Roadmap for Addressing Financial Risks from Climate Change Progress report. 2023. Roadmap

[39] FSB. Progress Report on Climate-Related Disclosures. 2023. Progress Report

[40] NGFS. Progress report on the Guide for Supervisors. October 2021. https://www.ngfs.net/en/publications-and-statistics/publications/progress-report-guide-supervisors

Jurisdiction/Organisation	Initiative
	banks' data aggregation capabilities and internal risk reporting practices to allow the identification and reporting of climate-related risks and exposures. This includes the expectation that banks will report such information in a timely manner, engage with clients and counterparties to collect additional data, and develop the necessary qualitative and quantitative metrics. The BCBS intends to monitor implementation across its member jurisdictions to promote a common understanding of expectations, support the development of harmonised practices and facilitate the implementation of the principles as soon as possible.
IAIS	In 2021, the IAIS published an Application Paper that included several recommendations related to governance, including the role of control functions, noting that insurers need to integrate climate risk into their governance and enterprise risk management.[41] In early 2022, the IAIS concluded an analysis of its Insurance Core Principles (ICPs) and concluded that the ICPs are sufficiently broad to cover climate risks. In the coming years, it will make a limited number of changes to the explanatory guidance in the ICPs and develop supporting material.
Brazil	The Banco Central do Brasil (BCB) sent questionnaires to key Brazilian financial institutions to gather insights on how banks are considering climate-related risks within their risk management processes. Aspects such as exposure assessments, climate scenarios and stress testing as well as internal governance have been included in these surveys. In Brazil, BCB has developed regulatory reporting for social, environmental and climate risks (DRSAC) to be in effect in 2023.[42] Large- and medium-sized financial institutions will be required to send, on a semi-annual basis, qualitative and quantitative information related to the exposure of their loan book and securities to social, environmental and climate risks. The BCB will also require information on counterparties, such as the economic sector, risk amplifiers and mitigators, geographical location of assets and net GHG emissions. This reporting aims to help the BCB in mapping exposures of the financial system to these risks, supporting the development of its micro and macroprudential actions.
France	In 2016 and 2018, the Autorité de Contrôle Prudentiel et de Résolution (ACPR) conducted surveys to measure the exposures of French banks and insurance companies to various climate change risks, including physical, transition and liability risks. The findings were published in 2017 in a joint report with the French Treasury and the Banque de France, and again in April 2019.[43] This data collection was part of the regular assessment of disclosure obligations under Article 173 of the French Law on Energy Transition and Green Growth, which was implemented in 2015. In addition, since 2020, the ACPR has conducted an annual survey on the banking and insurance sectors to assess the public climate commitments made by French banks, insurers and asset

[41] Sustainable Insurance Forum (SIF) and IAIS. Application paper on the supervision of climate-related risks in the insurance sector. May 2021. https://www.iais.org/uploads/2022/01/210525-Application-Paper-on-the-Supervision-of-Climate-related-Risks-in-the-Insurance-Sector.pdf

[42] BCB. Report on Social, Environmental and Climate-related Risks and Opportunities. September 2021.

[43] ACPR. Analysis and synthesis no. 101: French banking groups facing climate change-related risks; Analysis and synthesis no. 102: French insurers facing climate change risk. 2019. https://acpr.banque-france.fr/sites/default/files/medias/documents/as_102_climate_change_insurers_en.pdf

Jurisdiction/Organisation	Initiative
	managers. The results are published in a joint report with the French Autorité des Marchés Financiers (AMF). In France, the ACPR regularly collects reports to monitor the climate commitments of French financial institutions, including banks, insurers and asset management companies.[44] This involves gathering both quantitative and qualitative data on how institutions are accounting for climate change. They track metrics related to assets, such as loans, investments and derivatives, especially those connected to fossil fuel extraction and production. The ACPR also asks for information on specific polices and commitments that financial institutions have implemented to reduce their carbon footprint. They also inquire about the climate-related requirements financial institutions impose on firms in which they invest or engage as counterparties. The data collection is mainly focused on transition risks, assessing the risks to the institution's assets during the energy sector transition and examining the steps taken by the institution in its investments and equity portfolios to adapt to these changes.
Germany	In December 2019, the Federal Financial Supervisory Authority (BaFin) issued, in close cooperation with Bundesbank, its Guidance Notice on Dealing with Sustainability Risks[45] for various financial institutions, including credit institutions, insurance firms, pension funds, asset management companies and financial services institutions. This notice led to the development of a questionnaire with predefined response options to help supervisors in supervisory dialogues. The aim of the questionnaire is to gather information to assess supervised entities' efforts to implement sustainability risks strategically and organisationally into their risk management. BaFin also conducted an ad hoc survey in the second quarter of 2021 among a representative group of 400 supervised entities from all three financial sectors. The survey included 11 high-level questions that covered the scope and motivation for dealing with sustainability risks, the consideration of such risks in strategies, risk management, internal stress testing, business organisation, outsourcing and the use of ESG ratings. BaFin published the survey results in November 2021.[46]
Hong Kong	In 2019, the Hong Kong Monetary Authority (HKMA) conducted a stock take exercise on 50 banks, representing about 90% of the banking sector's total assets, to evaluate local developments in green and sustainable banking. Based on the findings, a common assessment framework was created to assess the 'greenness baseline' of individual banks. The framework aims to collect information about a bank's stage of development in six areas: (i) governance; (ii) corporate planning and

[44] ACPR and AMF. Second ACPR and AMF's joint report: Sectoral policies and fossil fuel exposure of French financial market participants. November 2021. https://www.amf-france.org/en/news-publications/publications/reports-research-and-analysis/second-acpr-and-amfs-joint-report-monitoring-and-assessment-climate-related-commitments-french

[45] Federal Financial Supervisory Authority (BaFin). Guidance Notice on Dealing with Sustainability Risks. 2019. https://www.bafin.de/SharedDocs/Downloads/EN/Merkblatt/dl_mb_Nachhaltigkeitsrisiken_en.html?nn=8813520

[46] BaFin. Germany's financial sector and the issue of sustainability risks. 2021. https://www.bundesfinanzministerium.de/Content/EN/Standardartikel/Press_Room/Publications/Brochures/sustainable-finance-strategy.pdf?__blob=publicationFile&v=8

Jurisdiction/Organisation	Initiative
	tools; (iii) risk management process; (iv) business policies, products and services; (v) performance and resources; and (vi) disclosure and communication. The results of this exercise and the assessment were published in a white paper and quarterly bulletin.[47] HKMA also held discussions with banks to understand their climate risk management approaches and readiness.
Japan	The Japan Financial Services Agency (FSA) has issued a draft supervisory guidance on climate-related risk management for public consultation. It encourages financial institutions to actively support their clients' transition, with a view to help maintain financial stability under transition to a low-carbon society.[48]
Singapore	The Monetary Authority of Singapore (MAS) has engaged with key financial institutions in Singapore to better understand their environmental and climate-related risk management, monitoring and analysis processes. A thematic review was conducted, using a questionnaire and further bilateral discussions. Based on this review, MAS will publish an information paper sharing observed good practices to help improve the risk management standards across the industry. MAS will also determine next steps in supervisory engagement, including developing metrics for environmental risk supervision, considering global developments in climate-related and environmental risk disclosures. In December 2020, MAS issued guidelines on environmental risk management for banks, insurers, and asset managers, outlining expectations for governance, strategy, risk management and disclosure. In May 2022, MAS published information papers on the progress made in the implementation of these guidelines, based on a thematic review done in 2021.
Saudi Arabia	Saudi Arabia Central Bank (SAMA) has initiated a preliminary assessment of climate-related financial risks to the financial system, focusing first on the banking sector due to its significance within the country's financial framework. SAMA's assessment aimed to understand the nature, level and impact of exposures of Saudi banks' exposures, particularly to sectors contributing the most to GHG emissions. The data collected included banks' exposures through their credit and investment activities, such as debt and equity instruments in both the banking and trading books. These exposures were also mapped to economic sectors using the International Standard Industrial Classification Revision 4 (ISIC4) classifications, and their GHG estimates were analysed accordingly.
Switzerland	In Switzerland, significant financial institutions are now required to regularly report on climate-related financial risks, in line with the FSB's TCFD recommendations. Since 2022, the largest banks and insurance

[47] Hong Kong Monetary Authority (HKMA). 'White Paper on Green and Sustainable Banking'. June 2020. https://www.hkma.gov.hk/media/eng/doc/key-information/guidelines-and-circular/2020/20200630e1a1.pdf HKMA. Green and Sustainable Banking: Latest Developments. September 2020. https://www.hkma.gov.hk/media/eng/publication-and-research/quarterly-bulletin/qb202009/fa1.pdf

[48] Japan Financial Services Agency (FSA). 'Supervisory Guidance on Climate-related Risk Management and Client Engagement'. 2022. https://www.fsa.go.jp/en/news/2022/20220715/20220715.html#:~:text=This%20guidance%20documents%20viewpoints%20of%20supervisory%20dialogues%20regarding,opportunities%20and%20risks%2C%20including%20possible%20approaches%20and%20c

Jurisdiction/Organisation	Initiative
	companies must detail their material climate-related financial risks and how they manage them with regards to governance, risk management and strategy. They must also disclose relevant quantitative data, including the methodologies used for these disclosures. This information enhances transparency and comparability between financial institutions, allowing for a general benchmarking that informs the Swiss Financial Market Supervisory Authority (FINMA) in both institution-specific and sector-wide risk assessments. In addition, these disclosures serve as a basis for further discussions and assessments in the supervisory process.
United Kingdom (UK)	The Bank of England's (BoE) Prudential Regulation Authority (PRA) currently applies a proportionate approach to assessing firms' management of climate-related financial risks. The collation of climate-related data has mainly focused on reviewing the Internal Capital Adequacy Assessment Process (ICAAP) for banks and the Own Risk and Solvency Assessment (ORSA) for insurers, where firms can address climate-related risks. Other sources of information include financial institutions' internal management data and presentations given during supervisory meetings. The PRA has assessed the extent to which firms have met its climate risk management expectations through a series of questionnaires that were summarised in the PRA *Climate Change Adaptation Report* published in 2021. The report indicates that the BoE will consider using regulatory returns focused on climate data and metrics in 2022. In the UK, the PRA has shifted from assessing the extent to which its expectations have been embedded to actively supervising climate-related risks. In its 2021 *Climate Change Adaptation Report*,[49] the PRA committed to considering what regular data supervisors might need from firms and whether this information should be obtained through regulatory returns. Any proposed changes to the scope of its regulatory returns would follow the usual processes, including public consultation. This work will be in addition to the PRA's existing commitment to review the utility of Pillar 3 disclosures for climate-related financial risks during the first half of 2022 as part of the UK joint government-regulator TCFD taskforce. In addition, the Financial Conduct Authority (FCA) plans to consult on ESG disclosures as part of its Investment Firm Prudential Regime in 2023 and envisages that it will include prudential considerations with respect to climate change, particularly the disclosure of material micro-prudential risks.
European Central Bank (ECB)	The ECB conducts stress tests to assess climate-related risks on banks under its supervision, the economy and the euro system balance sheet. In 2020, the ECB published a Guide on climate-related and environmental risks, outlining its supervisory expectations for significant institutions. These include that institutions should: a. assess their business environments to identify risks emanating from climate change; b. integrate climate-related risks in their business strategy; and

[49] Bank of England (BoE) Prudential Regulation Authority (PRA). Climate Change Adaptation Report 2021– Climate-related financial risk management and the role of capital requirements. October 2021. https://www.bankofengland.co.uk/-/media/boe/files/prudential-regulation/publication/2021/october/climate-change-adaptation-report-2021.pdf

Jurisdiction/Organisation	Initiative
	c. embed climate change-related risks in their governance and risk management frameworks.
Reserve Bank of Australia (RBA)	The RBA chairs the Council of Financial Regulators (CFR), established to collaborate on climate change-related risks. The working group comprises the RBA, CFR agencies, the Australian Prudential Regulation Authority (APRA), the Australian Securities Investments Commission (ASIC) and the Australian Treasury. The group's initiatives include: a. Measurement of climate-related risks: This includes a vulnerability assessment on climate change for Australia's largest banks. b. Supervisory expectations: APRA and ASIC are developing expectations for climate-related risks disclosures and management by supervised entities. In November 2021, they published the Prudential Practice Guide (PPG) on climate change financial risk, aiming to guide entities on developing monitoring and assessment frameworks. c. Climate-related risks disclosure: CFR agencies collaborated to identify ways for Australia firms to improve their disclosure of climate-related risks. d. Impact analysis of standards and taxonomies: CFR agencies are analysing the impact of taxonomies from other countries on Australian firms and the possibility of adapting sustainable finance standards in Australia.
Federal Reserve (Fed)	In December 2022, the Fed published the proposed principles for a framework to safely manage climate-related financial risks for large banking organisations. The principles aim to address both transitional and physical risks associated with climate change. The Fed aimed to commence with the pilot climate scenario exercise in 2023 with the participation of the six largest banks.
Italy	In May 2021, the Bank of Italy published its fifth issue of the series *Markets, infrastructures, payment systems* titled 'The carbon footprint of the Target Instant Payment Settlement (TIPS) system: a comparative analysis with Bitcoin and other infrastructures'. The study assessed the carbon footprint of the TIPS system and compared it to one of the payment systems based on the Bitcoin crypto currency. The study concluded that the environmental impact of TIPS is lower than that of Bitcoin.[50]

12. Policy recommendations for climate change in the NPS

12.1 The increasing frequency and severity of extreme weather and climate-related events, alongside their impact on the financial sector, highlight the

[50] Banca D'Italia. P Tiberi. 'The carbon footprint of the Target Instant Payment Settlement (TIPS) system: a comparative analysis with Bitcoin and other infrastructures'. May 2021. https://www.bancaditalia.it/pubblicazioni/mercati-infrastrutture-e-sistemi-di-pagamento/approfondimenti/2021-005/N.5-MISP.pdf?language_id=1

challenges ahead. This underscores the importance of continuing to embed effective risk management practices and bolstering the financial system's resilience against the risks posed by climate change.

12.2 Aligned with the international community, the SARB should develop an effective, appropriate, consistent policy and regulatory framework to address climate-related risks for payment institutions and the NPS, promoting a greener, more environmentally friendly NPS.

12.3 **The policy and regulatory framework should consist of the following requirements for payment institutions and payment system FMIs to monitor, manage and mitigate risks arising from climate change:**

A. Governance:

12.3.1 To effectively manage climate-related and environmental risks, the SARB expects payment institutions and payment system FMIs to clearly define and assign responsibilities within existing governance arrangements**.** The board, senior management and governing body should identify responsibilities for climate-related risk management throughout the organisational structure and ensure that their governance framework makes provisions for climate change and a greener payment system. In this regard, the board and senior management are responsible for the following:

a) Ensure that the payment institution and payment system FMI conduct a risk assessment of climate change-related risks.

b) Incorporate climate change-related risks into the payment institution and payment system FMI's risk management framework, business plans and strategies so that climate change-related risk exposures beyond the payment risk appetite can be promptly addressed.

c) Designate senior management to oversee climate-related risks, ensuring sufficient accountability where payment institutions and payment system FMIs consider climate change-related risks significant.

d) Develop and implement climate change policies that contribute to a greener NPS and ensure that the responsibility of the board and senior management is clearly outlined in the policies.

e) Regularly review the effectiveness of climate change and greener payment policies to ensure that adequate resources are allocated to manage climate change-related risks and implement green payments initiatives.

12.3.2 The payment institutions and payment system FMIs should adopt appropriate policies, procedures and controls that are implemented across the entire institution to ensure the effective management of all climate-related risks.

B. Strategy:

12.3.3 Payment institutions and payment system FMIs should integrate climate change-related risks in their strategies to ensure that climate change initiatives and greener payments are developed and implemented.

12.3.4 The SARB expects payment institutions and payment system FMIs to remain vigilant of potential changes in their business environment and to adopt a strategic approach to address climate change-related risk and other environmental risks.

C. Risk management:

12.3.5 The SARB expects payment institutions and payment system FMIs to have policies and procedures to identify, assess, monitor, manage and report climate change-related risks. The SARB also expects payment institutions

and payment system FMIs to incorporate climate change and other environmental related risks into their processes and procedures for managing credit, market, liquidity, operational, insurance and other risks, as well as to develop adequate metrics for their internal monitoring, external reporting and management of their operations.

12.3.6 Payment institutions and payment system FMIs should:

a. Assess the potential impact of climate change-related risks on their businesses and the environments in which they operate. They should consider these risks, which could materialise over various time horizons, and incorporate them into their overall business strategies and risk management plans.

b. Incorporate climate change-related risks into their internal control frameworks across the lines of defence. This ensures sound, comprehensive and effective identification, measurement and mitigation of material climate change-related risks.

c. Ensure that their internal reporting systems are capable of monitoring material climate change-related risks and producing timely information for effective board and senior management decision-making.

d. Understand the impact of climate change-related risk drivers on their credit risk profiles and ensure their credit risk management systems and processes consider material climate change-related risks.

e. Understand the impact of climate change-related risk drivers on their market risk positions and ensure their market risk management systems and processes consider material climate change-related risks.

f. Understand the impact of climate change-related risk drivers on their liquidity risk profiles and ensure their liquidity risk management systems and processes consider material climate change-related risks.

g. Understand how climate change risks drivers affect their operational risk and ensure their risk management systems and processes take material climate changes related risks into consideration. They should also understand the impact of climate change-related risks drivers on other risks and implement adequate measures for these risks if deemed material. This includes climate change-related risk drivers that increase strategic, reputational and regulatory compliance risk, as well as legal risks associated with climate-sensitive investments and businesses.

h. Identify and quantify climate change-related risks and incorporate those assessed as material over relevant time horizons into their internal capital and liquidity adequacy assessment processes, including their stress testing programmes, where appropriate.

i. Identify, monitor and manage all climate change-related risks that could materially impair their financial condition, including their capital resources and liquidity positions. These payment institution and payment system FMIs should ensure that their risk appetite and risk management frameworks consider all material climate change-related risks they face and establish a reliable approach to identifying, measuring, monitoring and managing those risks.

j. Integrate physical risk related disruptions in their BCP and disaster recovery plans. They should periodically test these plans to ensure they can recover and resume critical operations within a reasonable timeframe.

D. Scenario analysis and stress testing:

12.3.7 Given the forward-looking nature of the risks and the inherent uncertainties associated with climate change and environmental risks, the SARB expects payment institutions and payment system FMIs to develop methodologies and tools, such as scenario analysis and stress testing to measure the impact and scale of climate change-related and environmental risks.

12.3.8 Payment institutions and payment system FMIs should conduct self-assessments and conduct stress testing on risks that emanate from climate change and their potential impact on the operations of the payment system FMIs and their ability to fulfil their obligations.

E. Disclosure:

12.3.9 The SARB requires payment institutions and payment system FMIs to disclose information and metrics on their exposure to climate change and environmental risks. They must also detail their potential impact of these risks on their safety, efficiency and integrity as well as how they manage those risks.

12.3.10 The payment institutions and payment system FMIs should have education and awareness building initiatives focused on developing climate risk understanding at all levels in an organisation.

12.3.11 Payment institutions and payment system FMIs should annually disclose to the SARB their initiatives relating to climate change risk and disclose the contribution of their operations to climate change and how they plan to mitigate their contribution and adapt to eco-friendly operations.

12.3.12 Payment institutions and payment system FMIs should ensure that the disclosures are in accordance with international reporting frameworks such as the FSB's TCFD recommendations on climate related financial disclosures. The disclosures should at minimum include the following:

a. Institutional governance in relation to climate change, such as the board's oversight of climate related risks and the role and responsibilities of senior management in relation to the assessment and monitoring of climate related issues.

b. Climate related risk impact and opportunities on the institutions' strategy and financial planning. The disclosure should include short-, medium- and long-term time horizons. Further, payment institutions and payment system FMIs should disclose the resiliency of their strategies to climate related risks and consider different climate related scenarios which include a two degree Celsius or lower scenario.

c. How climate related risks are integrated into the risk management processes and how climate related risks are identified, assessed and mitigated.

d. The metrics and targets to assess and manage climate related risks including physical and transition risks. The disclosures should include a description of key targets such as greenhouse gas emissions, energy and water usage.

12.4 **The policy, regulatory oversight and supervisory recommendations for the SARB to monitor, manage and mitigate risks arising from climate change and environmental risks in the NPS**

A. Integrating climate-related risks into the SARBs oversight and supervision framework:

12.4.1 The SARB should integrate climate-related risks into the oversight and supervision framework.

B. Raising awareness and building capacity on climate change in the SARB and specifically the NPS, including technical assistance and knowledge sharing:

12.4.2 The NGFS encourages Central Banks and financial institutions to build in-house capacity and to collaborate within their institutions, with each other and with wider stakeholders to improve their understanding of how climate change-related factors translate into financial risks, financial stability risks

and opportunities. The SARB plans to implement this recommendation by implementing a climate change committee that includes relevant payment industry stakeholders such as regulatory authorities, payment industry associations and payment institutions and payment system FMIs. The NPSD is a member of the SARB climate change steerco and training is a focus area for the steerco.

12.4.3 The SARB, payment institutions and payment system FMIs should:

a. Allocate sufficient internal resources to address climate change-related risks and opportunities.

b. Develop training to equip employees with the necessary skills and knowledge on climate change risk and environmental risks.

c. Raise awareness by sharing knowledge within the NPS on climate change.

12.5 **Requirement in relation to the contribution of payment institutions and payment system FMIs to green payments and environmental sustainability**

12.5.1 Payment institutions and payment system FMIs should:

a. Develop greener payment instruments such as environmentally friendly cards to contribute to the reduction of the greenhouse emissions and green payments.

b. Assess the contribution of their infrastructure and operations to climate change and develop plans on how to adopt to environmentally sustainable operations.

c. Assess their contribution to climate change by specifically assessing their hardware energy requirements and how they can adopt more

environmentally friendly hardware or adopt to alternative environmentally friendly produced energy.

d. Develop digital payment instruments, methods that promote the reduction of both card usage and cash to foster adoption of environmentally friendly digital and green payments.

e. Promote environmental sustainability by encouraging consumers to adopt digital payment solutions such as virtual cards, Quick Response code payments and digital receipts as opposed to paper receipts in light of promoting green payments.

f. Develop and promote merchant acquiring devices such as wireless portable point of sale devices that are environmentally friendly, have less energy requirements and are sustainably powered with renewable energy or are not connected to the ethernet for less energy requirements.

g. Ensure that they assess the potential cyber risk introduced by their greener payment initiatives such as digital payment methods and services. Any new threats should be mitigated and integrated into their cyber resilience frameworks and risk appetite.

13. Conclusion

13.1 The efficiency, safety and integrity of the NPS are susceptible to the effects of climate change. It is imperative for all participants in the NPS to enhance its resilience to climate change. Payment institutions and payment system FMIs have a role to play in the South African transition to a low-carbon economy.

13.2 The requirements outlined in this consultation paper are intended to enhance the climate change initiatives in the NPS and the SARB. This will help reduce the payment sector's contribution to climate change. The

development of eco-friendly payment instruments and solutions will mitigate the sectors environment impact. Furthermore, payment institutions and payment system FMIs should stay abreast of climate change-related risks to ensure that such risks are mitigated effectively.

13.3 The adverse effects of climate change will continually test the NPS's ability to withstand extreme weather events that result in disasters. It is important for all payment institutions and payment system FMIs to build resilience against climate change-induced disasters and ensure the ability to resume critical operations with minimal disruption to the ecosystem, the NPS and the economy.

14. Comments, consultation questions and contact details

14.1 Stakeholders and other interested parties are invited to forward their comments on this consultation paper by **30 April 2025.** Comments should be addressed to npsdirectives@resbank.co.za.

14.2 Stakeholders and other interested parties are encouraged to respond to the questions below as part of the consultation feedback to the SARB:

A. General information and familiarity of the payment institution and payment system FMIs with climate change-related risks

14.3 What is your institution's overall opinion on the impact of climate change on payment institutions, payment system FMIs and the NPS?

14.4 How does your institution perceive climate change risks and opportunities?

B. Strategy and governance

14.5 Has your board or senior management determined how to effectively integrate the management of climate change-related risks into the board committee structures?

14.6 What processes are in place to inform the board or senior management (and relevant committees) about climate change-related risks and what is the frequency of such engagements?

14.7 Are climate change-related risks incorporated into your institutions' strategic planning, business models, financial planning, business continuity planning and other decision-making processes?

14.8 Does your payment institution and payment system FMI have a climate-related risk policy in place or is it integrated into other policies?

14.9 Does your payment system FMI and payment institution's strategy include a holistic climate change strategy informed by scenario analysis (i.e. climate risk mitigation and adaptation, as well as business continuity and opportunities)?

14.10 What are the key climate change drivers your institution considers relevant to your strategy and the NPS?

14.11 Does your payment system FMI and payment institution's strategy make provision for measuring its own carbon footprint?

14.12 Is your payment system FMI and payment institution planning to become carbon neutral and how is this integrated into their strategy?

C. Risk management, scenario analysis and disclosure

14.13 How does your institution incorporate climate change risk into your risk management framework?

14.14 Does your institution expect climate risks discussed in this consultation paper to affect payment systems, payment operations and your business performance across different business lines through impacts on customers, claims or values of assets or collateral? If yes, please explain how and over what timeframes and whether risk mitigation strategies are in place. If not,

please explain why not. How do you expect these risks to materialise over the short, medium, and long term?

14.15 Does your institution expect that transition risks will affect business performance across different business lines in terms of market demand, impacts on customers, values of assets/collateral or other factors? If yes, please explain how and over what timeframes.

14.16 Does your institution expect climate change to impact people, processes and systems? If yes, how will climate change impact your people, processes and systems?

14.17 Does your institution expect climate change liability risks to affect business performance across different business lines in terms of market demand, customer impacts, values of assets/collateral or other factors? If yes, please explain how and over what timeframes.

14.18 How does your institution perceive the potential for reputational risks arising from its investment or underwriting decisions in climate-related sectors (i.e. high-carbon assets)?

14.19 Are different climate scenarios being used to inform the assessment of climate change materiality at your institution? What types of scenarios is your institution seeking to apply? What are the data inputs and key assumptions applied?

14.20 Are climate scenarios conducted in such a way that the results can be used to inform the payment system FMI and payment institution or senior management or board's response to climate change risks?

14.21 What gaps and barriers (information, data, scenarios) might complicate your efforts to undertake climate scenario analysis?

14.22 Does your payment system FMI and payment institution publicly disclose information on the material financial risks and opportunities associated with climate change? If yes, what type of information is disclosed (institution strategy, processes for identifying, assessing and managing climate-related risks, exposures, impact, metrics; qualitative information only or also quantitative)? If no, what are the main reasons for not disclosing climate-related risk information?

14.23 What are the key challenges your institution is facing in its efforts to enhance disclosure of information relating to climate-related factors?

D. The role of regulators and supervisors

14.24 What is your institution's opinion on:

14.24.1 The role of the SARB on climate change-related matters in the NPS?

14.24.2 The potential guidance from the SARB with respect to the identification, assessment, and management of climate change-related risks in the NPS?

E. The contribution of payment institutions and payment system FMIs to green payments

14.25 Does your institution have plans to develop a greener payment instrument, products, and services?

14.26 Does your institution assess the contribution of your operations to climate change?

14.27 Are there any initiatives your institution is developing in relation to contributing to environmentally sustainable operations in providing your payment services?

ABBREVIATIONS

ACPR	Autorité de Contrôle Prudentiel et de Résolution (Prudential Supervision and Resolution Authority)
AMF	Autorité des Marchés Financiers (Financial Markets Regulator)
APRA	Australian Prudential Regulation Authority
ASIC	Australian Securities Investments Commission
BaFin	Federal Financial Supervisory Authority
BASA	Banking Association South Africa
BCB	Banco Central do Brasil
BCBS	Basel Committee on Banking Supervision
BCP	business continuity plan
BIS	Bank for International Settlements
BoE	Bank of England
CCP	Climate Change Programme
CFR	Council of Financial Regulators
CPMI	Committee on Payment and Market Infrastructures
DFFE	Department of Forestry, Fisheries and the Environment
ECB	European Central Bank
E&S	environmental and social
ESG	environmental, social and governance
Fed	Federal Reserve
fintech	financial technology
FMI	financial market infrastructure
FSA	(Japan) Financial Services Agency

FSB	Financial Stability Board
FSCA	Financial Sector Conduct Authority
FSR	Financial Stability Review
G20	Group of Twenty
GHG	greenhouse gas (emissions)
HKMA	Hong Kong Monetary Authority
IAIS	International Association of Insurance Supervisors
IMF	International Monetary Fund
IOSCO	International Organisation of Securities Commissions
ISFWG	Intergovernmental Sustainable Finance Working Group
ISSB	International Sustainability Standards Board
IT	information technology
MAS	Monetary Authority of Singapore
NGFS	Network of Central Banks and Supervisors for Greening the Financial System
NPS Act	National Payment System Act 78 of 1998, as amended
NPS	national payment system
NPSD	National Payment System Department
NT	National Treasury
PA	Prudential Authority
PACTT	PA Climate Task Team
PCC	Presidential Climate Commission
PCH SO	payment clearing house system operator
PFMI	Principles for Financial Market Infrastructures
PRA	Prudential Regulation Authority

QR	quick response
RBA	Reserve Bank of Australia
RTGS	real-time gross settlement (system)
SAMA	Saudi Arabia Central Bank
SARB Act	South African Reserve Bank Act 90 of 1989, as amended
SARB	South African Reserve Bank
SARS	South African Revenue Service
SIF	Sustainable Insurance Forum
ICPs	Insurance Core Principles
SO	system operator
SSB	standard-setting body
TCFD	Task Force on Climate-related Financial Disclosures
TIPS	Target Instant Payment Settlement
TPPP	third-party payment provider
UK	United Kingdom
WEF	World Economic Forum