Global Research
& Risk Solutions

CRISIL
An S&P Global Company

The future of financial services sustainability

What you need to know

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Executive summary

The Intergovernmental Panel on Climate Change (IPCC) has time and again warned about the catastrophic effects of global warming beyond 1.5°C above pre-industrial times.

Its latest report[1] says there is more than a 50% chance that global temperature rise will reach or surpass this threshold between 2021 and 2040 across studied scenarios, or even sooner on a higher emission pathway.

The consequences of the climate change for the global economy and financial system are already playing out in the form of extreme weather events, loss and damage to life, property and ecosystems. This is leading to rising insurance and economic losses, stranded assets, and balance sheet risks. How these risks progress will depend, in large part, on the speed and path of transition to carbon neutrality.

Given their pivotal role in enabling economic growth, financial institutions (FIs) are in a position of both responsibility and power to influence the direction of that growth in a more sustainable manner through their business decisions.

That is indeed no more a matter of their choice, with increasing pressure to adhere to global guidelines and targets such as under the Paris Agreement and the United Nations (UN) Sustainable Development Goals (SDGs), and sustainability regulations of central banks and financial authorities across developed and emerging economies.

Customers, investors, and activists are also simultaneously pushing FIs to build sustainability into their overall business strategy, in the form of environmental, social and governance (ESG) disclosures and practices.

In summary, the report underscores the imminent threat of global warming and its severe consequences for our world. FIs find themselves in a pivotal position to drive change through sustainable solutions, as global guidelines, targets like the Paris Agreement and UN Sustainable Development Goals, and increasing pressure from customers, investors, and activists all demand a shift towards more responsible and sustainable business practices. The urgency is clear, and financial institutions must act decisively to navigate the challenges posed by climate change and contribute to a more sustainable future for us all.

1 IPCC report

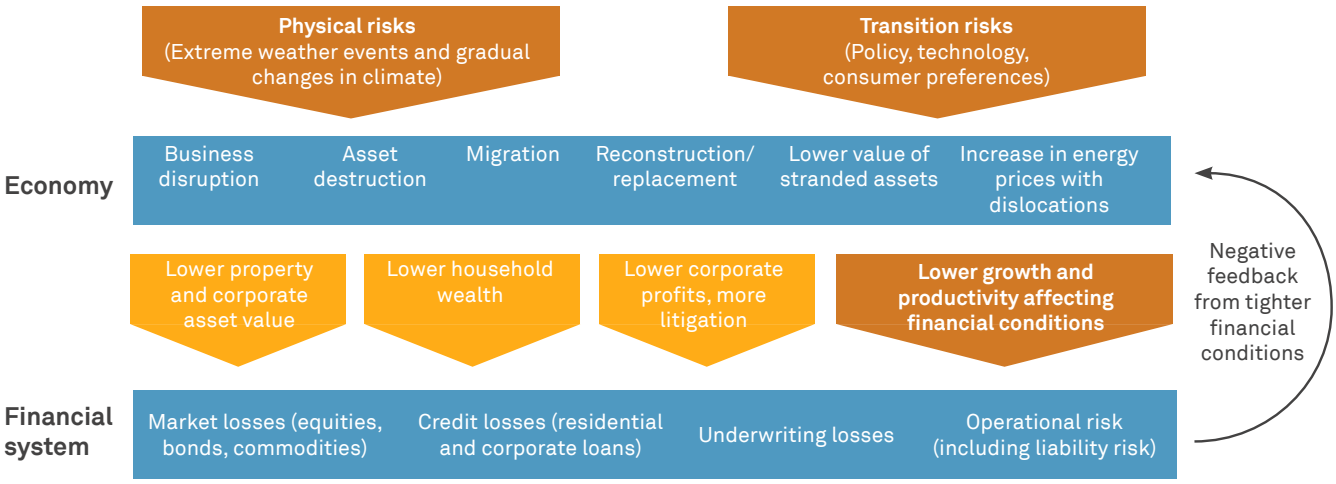
Why sustainability is critical for financial services

Climate change is an existential threat with large, systemic costs

Climate change is a real and present danger that can negatively impact businesses, financial markets, and the broader economy. FIs are specifically susceptible to two broad categories of risk related to climate change — physical and transition risks, that in turn create credit and systemic risks.

Physical and transition risks

The risks from climate change to the economy have two basic channels, but many potential impacts.



Source: IMF[2] , CRISIL GR&RS

Physical risks

The recent past has seen a slew of catastrophic events – from rising average global temperatures and tropical cyclones and autumn fires in the US to heat waves in Asia and record levels of rainfall in the UK. The frequency of these extreme events has also increased, fueled by global warming and the looming climate change crisis. Such events cause significant damage to material assets in addition to endangering all forms of life.

Physical risks refer to the direct impact of extreme climate change events such as fires, floods, storms, and droughts, which can damage physical assets and disrupt business operations and supply chains. They can also lead to financial losses for businesses and FIs that invest in or lend to them.

Some examples of these risks include: i) damage to physical assets such as offices, data centers and ATMs, leading to higher costs; ii) obstruction in power and communication networks, leading to business disruptions; and iii) loan defaults by affected customers, which can result in increased credit risk.

For any business, especially FIs, continuity of operations is crucial. Any outage or system crash impacts users across geographies, thereby putting the FI's reputation at risk. There are over 2bn[3] active online banking users worldwide. Any disruption in a particular region or nation can impact millions of users, which will have a ripple effect on the global banking system and economy.

FIs depend considerably on technology to maximize their global reach, and data centers are a critical aspect of their operations and ability to remain accessible. However, the rise in average global temperatures has had an impact on data centers.

2 *Climate Change, Central Banks and Financial Risk – IMF F&D | December 2019*
3 *Number of active online banking users worldwide in 2020 – Statista, 2023*

Frequency of shutdowns and outages has increased due to the inability of these centers to cope with spike/rise in temperature. For example, July 2022 saw two data centers in London going offline due to extreme heat, resulting in outages in the US and APAC[4] .

In 2022, it was noted[5] that 3.3GW of colocation data center capacity in the US fell within the risk zone for hurricanes as categorized by the National Oceanic and Atmospheric Administration. Additional 1GW under-construction and 5GW planned facilities fall within the risk zone. Any materialization of the extreme event threat will result in outages across several facilities, jeopardizing several megawatts of capacity.

Data centers also require large quantities of water for their cooling towers, ACs, chillers and pumps in addition to maintenance and upkeep of the facilities. Hyperscale data centers consume ~164mn[6] gallons (622mn liters) of water annually, while an average wholesale/retail data center uses ~7mn[7] gallons (25mn liters) per year. Given 50% of the world's population is expected to live in water-stressed regions by 2025[8] , it is vital to ensure data centers use water in a responsible and optimal way.

While droughts are a major threat to the availability of water to service data centers, floods, storms, wildfires, and other extreme events can also cause direct physical damage to data centers. This could result in outages and physical asset losses, consequently impacting end users, FIs' reputation, and more.

Ensuring the business resumes operations as quickly as possible after any adverse event, is critical for FIs; thus, resilience is the keyword for the sector. However, these systemic risks are yet to be broadly addressed and talked about. It is, therefore, imperative that FIs engage with providers and adopt IT infrastructure that adapts to changing times and employs advanced cooling techniques, reduces energy use and carbon emissions, and contributes positively to climate well-being.

Transition risks

These encompass challenges encountered due to the transition efforts to a low-carbon economy. They may include the effects of changes in federal or global policies, swings in consumer and market preferences/sentiment, and adapting to newer technologies. These drivers of transition could potentially impact FIs that have higher exposure to such companies in their portfolio.

Some examples of transition risks include: i) exposure to financed emissions and increasing regulations around carbon emissions that could drive down the value of fossil fuel assets in FIs' portfolios, ii) policy changes that could impact the way funding is accessible or not, for certain sectors, and iii) rise in the cost of funds for companies with higher risks.

Overall, climate risk is a growing concern for FIs, as it can impact their financial performance, reputation, and long-term viability.

Hence, FIs need to take steps to manage and mitigate climate risks, including conducting climate risk assessments, developing climate risk management strategies, and investing in sustainable infrastructure and businesses.

4 Data center outages – GCP and Oracle
5 Data center colocation capacity under risk due to hurricanes in the US
6 Water usage in hyperscale data centers
7 Water usage in wholesale / retail data centers
8 Water stressed regions - UN study

Regulations on emissions are tightening, and so is the need for sustainability assessment of vendors

Sustainability regulation refers to laws, policies, and other measures designed to promote sustainable practices and protect the environment, social and economic systems. They are implemented by governments and other bodies to address issues such as climate change, pollution, resource depletion, and social inequality.

Some notable guiding principles globally are:

1. **The Paris Agreement:** The UN's Intergovernmental Panel on Climate Change (IPCC) found that global warming threshold exceeding 1.5°C can have severe climate change impact including greater threat of physical risks such as frequent floods, droughts, and rainfall. The Paris Agreement is an international treaty under the United Nations Framework Convention on Climate Change (UNFCCC) aimed at limiting global warming to well below 2°C above pre-industrial levels. The agreement has been ratified by 197 countries[9].

2. **UN SDGs:** They are a set of 17 goals aimed at ending poverty, protecting the planet, and ensuring peace and prosperity for all. The goals cover a range of sustainability issues, including climate change, gender equality, and sustainable consumption and production[10].

3. **EU taxonomy:** It was first proposed in 2018 as part of the European Union's (EU) Action Plan on Sustainable Finance and has come into force since January 2022. It will be implemented in phases[11] across companies of varying size and turnover as per regulations published intermittently. The taxonomy aims to establish a common language and criteria for identifying environmentally sustainable economic activities by defining a set of technical screening parameters. The framework focuses on six environmental objectives: climate change mitigation, climate change adaptation, sustainable use and protection of water and marine resources, transition to a circular economy, pollution prevention and control, and protection and restoration of biodiversity and ecosystems[12].

Sustainability regulations vary significantly across countries and regions, but are primarily derived from the above.

Other critical announcements by regulatory bodies at the country/regional level include the following:

- **The Securities and Exchange Commission (SEC)** has proposed rules that require companies to disclose material climate-related risks and opportunities in their public filings, including their annual 10-K reports. This applies to publicly traded FIs as well. The disclosures to be made include climate-related risks, GHG emissions, human capital management, and other ESG topics that are material to their business. Companies are allowed to use existing reporting frameworks, such as the Task Force on Climate -Related Financial Disclosures (TCFD) recommendations, Global Reporting Initiative (GRI) standards, and Sustainability Accounting Standards Board (SASB) standards, to fulfill their reporting requirements. The proposed rules are subject to a public comment period and could be revised before they are finalized. If approved, the rules would be phased in over time, with larger companies required to comply first[13] .

- **The United States Federal Reserve (Fed)** has indicated that it plans to consider climate-related risks in its supervision of banks and other FIs. This could include assessing the exposure of banks to climate risks and encouraging management practices that account for such risks. As part of a pilot initiative, the six largest US banks will analyze the impact of scenarios for both physical and transition risks related

9 Key aspects of the Paris Agreement | UNFCCC
10 THE 17 GOALS | Sustainable Development (un.org)
11 EU - phased implementation
12 EU taxonomy for sustainable activities (europa.eu)
13 SEC.gov | SEC Proposes Rules to Enhance and Standardize Climate-Related Disclosures for Investors

to climate change on specific assets in their portfolios. To support the exercise's goals of deepening understanding of climate risk-management practices and building capacity to identify, measure, monitor, and manage climate-related financial risks, the Federal Reserve Board will gather qualitative and quantitative information over the course of the pilot, including details on governance and risk management practices, measurement methodologies, risk metrics, data challenges, and lessons learned[14].

- **The Network for Greening the Financial System (NGFS)**, a global coalition of central banks and supervisors, has published a set of recommendations for FIs to assess and manage climate-related risks. While not mandatory, these recommendations could inform regulatory expectations and best practices[15].
- **The European Banking Authority's (EBA)** binding standards on Pillar 3 disclosures have updated the requirements to include green asset ratio (GAR) and a banking book taxonomy alignment ratio (BTAR), to showcase how FIs are embedding sustainability in their risk management, business models and strategy and to assess their pathway and progress towards the Paris Agreement goals[16].

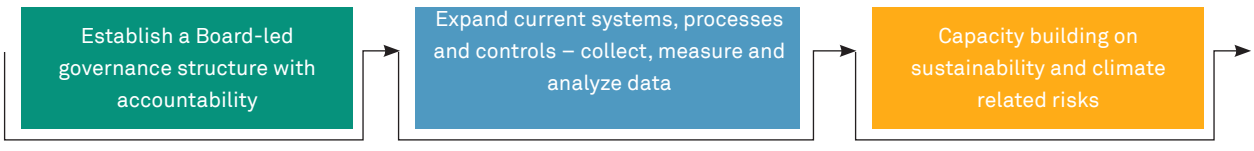
There is also a tremendous push from regulators to incorporate non-financial key performance indicators (KPIs) within business strategy and public disclosures. Hence, there is an immediate ask from FIs to align and comply with the dynamic changes in regulations and disclosure frameworks.

This is driving major global players in the sector to adopt standard practices/alliances to collaborate and set out a path towards achieving sustainability outcomes such as Net-Zero emissions. One such organization is the Net-Zero Banking Alliance, which is a UN-convened, industry-led collaboration of global banks representing over 40% of global banking assets. Members are committed to aligning their lending and investment portfolios to achieve Net-Zero by 2050. Major US banks such as JP Morgan, Bank of America, Citibank, Amalgamated Bank, Morgan Stanley, Wells Fargo, and Goldman Sachs are members of this alliance.

Meeting the commitments will require FIs to set up a complete governance framework along with accountability within the organization to oversee risks arising from climate change and sustainability, and to establish strategies to address those. Further, they will need to set up infrastructure which would enable them to collect, measure and analyze the relevant data for disclosures.

These data points will not only include details of their own emissions and sustainability metrics but also that across their supply chain, including vendors. Selection of vendors would thus become crucial and also involve a higher level of due diligence, as FIs seek to reduce their Scope 3 emissions arising from supply chain partners.

What FIs need to do



Source: CRISIL GR&RS

14 Federal Reserve Board - Federal Reserve Board provides additional details on how its pilot climate scenario analysis exercise will be conducted and the information on risk management practices that will be gathered over the course of the exercise
15 capturing_risk_differentials_from_climate-related_risks.pdf (ngfs.net)
16 EBA publishes binding standards on Pillar 3 disclosures on ESG risks | European Banking Authority (europa.eu)

FIs are focusing on reducing in-house and supply chain emissions, not only financed emissions

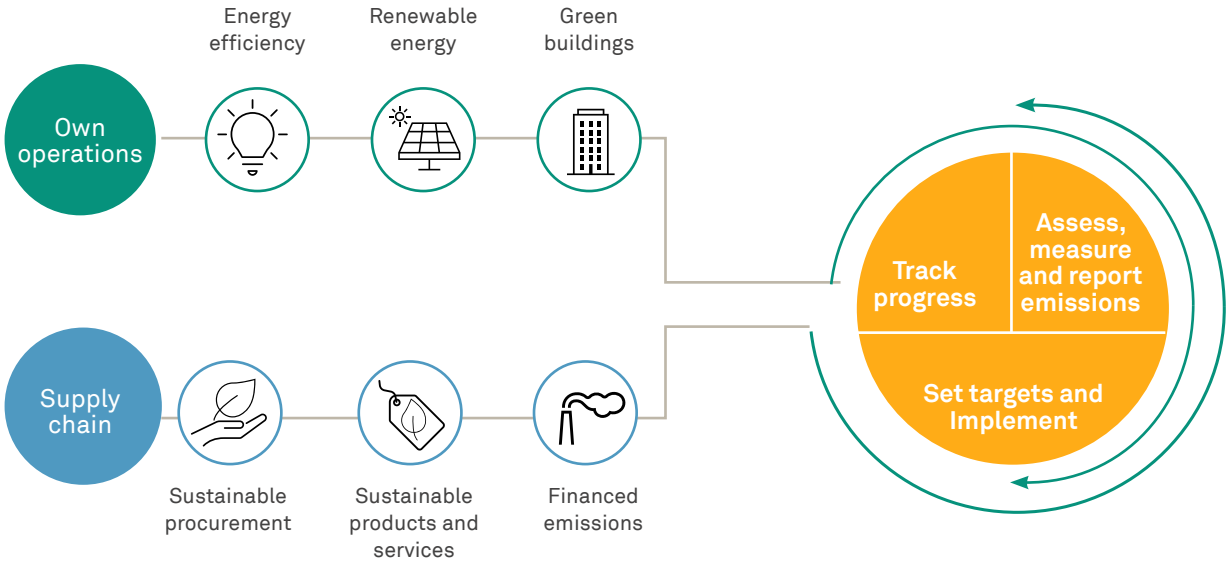
FIs contribute to carbon emissions through:

- Own operations, i.e., emissions from its business operations through its data centers and offices
- Financed emissions (financing and investment activities), i.e., emissions associated with the activities of companies or projects that are financed by the institutions, such as lending to companies with fossil fuel exposure

Portfolio emissions of global FIs, on average, are over 700 times larger than direct emissions, as per a CDP study[17] implying they make up the bulk of the carbon footprint for these institutions.

However, the ability of an FI to control its own emissions in addition to having a faster positive environmental impact in the near-term, is higher. Consequently, the immediate priority should be to focus on reduction in emissions from own operations, while simultaneously developing strategies to de-risk their portfolio.

To reduce carbon emissions, FIs could take several steps, which involve assessing emissions from direct sources, such as office buildings and company vehicles, as well as indirect sources, such as energy use in data centers or emissions from financed projects.



Source: CRISIL GR&RS

Some examples of how FIs can achieve emissions reduction targets in their own operations and in their supply chains, include:

Own operations

- **Energy efficiency:** FIs can achieve emissions reduction targets through two key approaches: improving efficiencies outside the rack (power usage effectiveness, PUE) and optimizing efficiencies inside the rack (reducing IT demand).
- **Improving efficiencies outside the rack (PUE):** FIs can achieve improved energy efficiency in

17 Finance sector's funded emissions over 700 times greater than its own - CDP

their data centers and facilities by focusing on measures outside the rack, commonly referred to as PUE. To accomplish this, FIs can:

1. Upgrade their cooling systems, and implement hot and cold aisle containment strategies, which optimize temperature control and reduce energy consumption.
2. Enhance power distribution infrastructure to minimize energy losses during transmission.
3. Select data center locations with access to renewable energy sources, which will enable FIs to tap into cleaner and more sustainable power options.
4. Virtualize servers and consolidate IT resources, which leads to better resource utilization and lower energy consumption.
5. Adopt energy-efficient lighting and incorporate motion sensors in offices and data centers, which will contribute to reducing unnecessary energy usage.

By implementing these strategies, FIs can reduce their carbon footprint and work towards achieving their emissions reduction targets.

- **Optimizing efficiencies inside the rack (minimizing IT energy demands):** FIs can effectively decrease the power consumption of their IT equipment through targeted strategies.
    1. Adopting energy-efficient servers, storage systems and networking equipment, which consume less power while maintaining performance.
    2. Optimizing software applications and workloads for energy efficiency further contributes to reducing energy usage.
    3. High utilization levels for servers and IT equipment ensure that resources are utilized to their maximum potential, minimizing wasted energy.
    4. To identify and address inefficiencies in real time, FIs can leverage advanced monitoring and management tools.
    5. Exploring the integration of renewable energy sources directly into their IT infrastructure allows FIs to power their operations using cleaner and more sustainable energy.

By implementing these measures, FIs can reduce their environmental impact and work towards their emissions reduction targets in a technically comprehensive manner.

- **Renewable energy:** FIs can transition to renewable energy sources to power their operations, which helps reduce their environmental impact and aligns with their sustainability goals. However, it is crucial to be aware of the limitations of renewables, as achieving 100% renewable energy may not be entirely carbon-free and can still rely on backup energy sources.

  In situations where direct access to renewable energy sources is limited, FIs can proactively embrace a diversified energy portfolio. This holistic approach encompasses a spectrum of low-carbon alternatives, with nuclear energy and bio-energy emerging as compelling options.

  – Goldman Sachs has achieved carbon neutrality and its goal of sourcing 100% renewable power for its global electricity needs. It has invested in a range of renewable-energy projects to achieve that[18].

- **Green buildings:** FIs can construct or retrofit their buildings to be more environmentally friendly, such as incorporating energy-efficient designs and using sustainable materials.

  – Bank of America has committed to achieving carbon neutrality and using 100% renewable energy for its global operations by 2020 and

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18 Goldman Sachs | Our Operational Impact - Carbon, Energy and Business Travel

has constructed LEED-certified buildings that incorporate energy-efficient designs and renewable energy systems[19,20].

Supply chains

- **Sustainable procurement:** A FIs can adopt sustainable procurement practices, such as sourcing products and services from suppliers that have strong sustainability credentials.
  - Citigroup has implemented a sustainable supply chain program that includes sustainability criteria in its supplier selection process and requires suppliers to comply with the bank's sustainability standards[21].
- **Sustainable products and services:** It could develop and offer sustainable products and services to its customers, such as green bonds, sustainable investment funds, and other products that support environmental and social sustainability.
  - Amalgamated Bank has developed a range of sustainable banking products, including green checking accounts and loans for energy-efficient home improvements, and has been recognized as a leader in sustainable banking[22].
- **Financed emissions:** Bank of America has committed to achieving Net-Zero in its financing activities, operations, and supply chain by 2050. The bank has also pledged to deploy $1.5 trillion in sustainable finance by 2030[23].

Investors and customers are demanding uptake of sustainable strategies

Investors and customers are increasingly becoming aware of and demanding greater transparency and accountability in how their money is being used. While different stakeholders approach sustainability with varying levels of depth and industry focus, some common aspects are:

a) protecting the environment

b) promoting equity, and

c) further trust and stability

ESG is an umbrella term that covers these various facets of sustainability. What each pillar of ESG means to a financial services firm is depicted in simple terms below:

Environment

- Climate change and impact of business
- Responsible use of natural resources
- Energy consumption

Social

- Diversity, equity and inclusion
- Community support
- Privacy and security
- Employee opportunity and development
- Infrastructure for new-age financial services

Governance

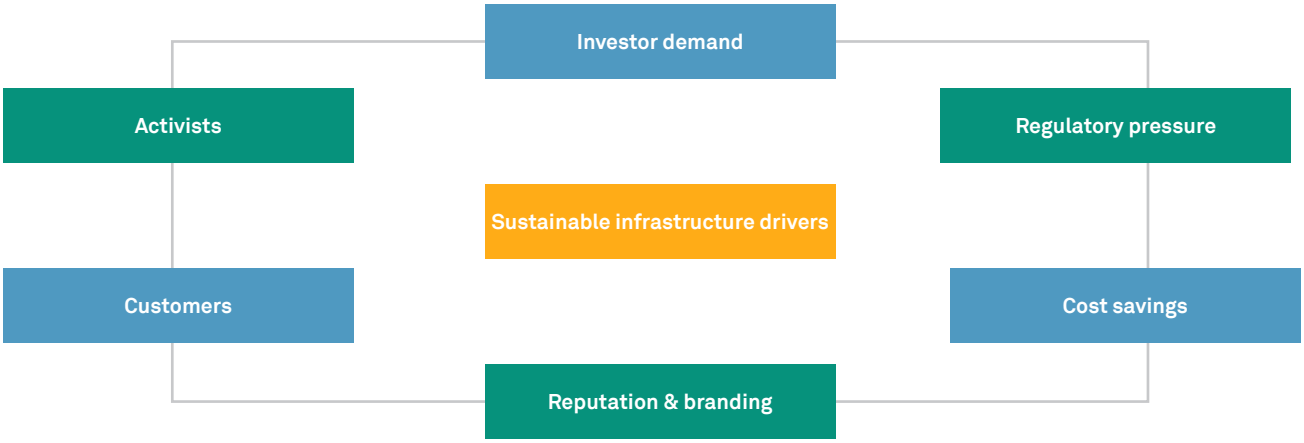
- Ethical conduct
- Fiduciary responsibility
- Reporting transparency
- Leadership and board accountability

Source: CRISIL GR&RS

19 Bank of America Commits to Carbon Neutrality and 100 Percent Renewable Electricity by 2020 | Business Wire
20 Bank of America Tower is First LEED Platinum Core/Shell Project | GlobeSt
21 Sustainability Goals - Operations & Supply Chains | Citi (citigroup.com)
22 Climate Justice | Amalgamated Bank
23 Approach to Zero™ Our commitment to helping finance the transition to Net-Zero before 2050 (bankofamerica.com)

Overall, the financial services sector is increasingly recognizing the importance of sustainable infrastructure in terms of financial stability, risk management, and reputation. As a result, more and more institutions are implementing sustainable infrastructure strategies to meet these demands.

There are several factors prompting the financial services sector to implement sustainable infrastructure:



Source: CRISIL GR&RS

- **Investor demand:** Institutional investors and asset managers are increasingly demanding that companies they invest in prioritize sustainability. This has led to a growing interest in sustainable infrastructure, which includes investments in renewable energy, energy-efficient buildings, and sustainable transportation.
  - A group of institutional investors with more than $4.6 trillion in assets under management formed the Net-Zero Asset Owner Alliance in 2019, pledging to transition their portfolios to Net-Zero emissions by 2050. The alliance includes some of the world's largest pension funds, insurers, and asset managers[24].
- **Regulatory pressure:** Governments around the world are implementing policies and regulations that incentivize and/or require the adoption of sustainable infrastructure. Some countries have introduced renewable energy targets, carbon pricing mechanisms, and green bond regulations that encourage investments in sustainable infrastructure.
  - **The Sustainable Finance Disclosure Regulation (SFDR)** is a regulatory framework aimed at encouraging the financial industry to disclose how sustainability risks are integrated into players' investment decision-making processes. Under the regulation, FIs are required to disclose information about their sustainability policies, sustainability of their investment products, and how they integrate sustainability factors into their investment decisions[25].
- **Cost savings:** Sustainable infrastructure can offer cost savings in the long run, particularly in terms of energy and resource efficiency. For example, energy-efficient buildings can lower energy bills and maintenance costs over time.
  - Bank of America reported a 23% increase in efficiency following the implementation of digitalized infrastructure, resulting in cost savings of $2.1 billion in 2019[26].
- **Reputation and branding:** Association with

24 *net-zero-asset-owner-alliance-brochure.PDF (allianz.co.uk)*
25 *Sustainability-related disclosure in the financial services sector (europa.eu)*
26 *Bank of America Uses Cloud to Slash Billions in IT Costs - Acceleration Economy*

unsustainable practices or investments can potentially damage a financial institution's brand and reputation. This can lead to loss of customers, investors, and business opportunities. FIs are recognizing that adopting sustainable infrastructure can enhance their reputation and brand, as it demonstrates a commitment to environmental and social responsibility.

  - In 2021, human rights activists criticized HSBC for financing companies involved in the construction of the controversial Carmichael coal mine in Australia. The bank was accused of not doing enough to address the human rights implications of the project, and several clients threatened to divest from the bank[27].

- **Customers:** Customers are increasingly aware of the impact of their financial decisions on the environment and society. They are choosing to do business with FIs that align with their values and prioritize sustainability. Customers are demanding greater transparency from FIs on their ESG policies, practices, and investments. They are using their voice to advocate for change within these institutions. They are holding FIs accountable for their actions through scrutiny of investments and practices. FIs that do not take ESG considerations seriously risk losing customers and damaging their reputation.

  - For instance, customers are seeking sustainable investment options, sustainable loans, and environment friendly credit cards.

- **Activists:** Activists driving sustainability in FIs are typically individuals or organizations pushing for changes in the policies, practices, and investments of FIs to align with ESG considerations. These activists believe FIs have a significant role to play in addressing global challenges, such as climate change, social inequality, and human rights violations.

  - 350.org has been calling on banks to divest from fossil fuels and to stop financing projects that are contributing to climate change. In 2020, the organization launched a campaign called Banking on Climate Chaos that targeted the world's largest banks, including JPMorgan Chase, Citigroup, and Wells Fargo[28].

This recognizes that sustainability is not just about environmental issues, but also about social and governance issues.

A 2022 Enterprise Strategy Group[29] survey of 400 IT professionals across corporates found sustainability considerations played a key role in vendor selection, with 85% respondents stating suppliers were screened out or eliminated based on ESG concerns. 95% of those surveyed opined that their organizations would pay a premium of 6% for products and/or services from ESG-validated suppliers.

Banks, too, are including ESG criteria in their supplier code of conduct and applying these requirements when selecting suppliers. FCMB is one such commercial bank[30] that has integrated sustainability into its vendor requirements and organizes a yearly forum to educate its suppliers.

FIs are responding by integrating sustainability into their operations and investment strategies through innovative products and services, some of which are described below:

Sustainable banking/products

These are financial products designed to promote sustainable development and address environmental and social challenges. They include loans, investments, and other financial instruments that support activities that have a positive environmental or social impact. Some examples are:

- **Green loans:** They are designed to finance environment-friendly projects, such as renewable energy installations, energy-efficient buildings, and sustainable agriculture. These loans typically offer lower interest rates and longer repayment terms than conventional loans.

  - New Resource Bank is a community bank that

27 Adani Group (financed by JP Morgan, MUFG, HSBC, BlackRock) is running an enormous fossil fuel project in Australia, violating Indigenous Rights - Banking on Climate Chaos
28 Banking on Climate Chaos 2022 - Banking on Climate Chaos
29 Sustainable IT procurement survey
30 FCMB supply chain vendor assessment forum

focuses on sustainable business practices and environmental responsibility. The bank offers a range of sustainable products, including loans for renewable energy and sustainable agriculture, as well as deposit accounts that support environmental and social causes[31].

- **Green bonds:** These are debt securities issued by banks and other organizations to fund environment-friendly projects. The proceeds from green bonds are earmarked for specific projects, such as renewable energy installations, sustainable agriculture, and energy-efficient buildings.
  - Wells Fargo has issued several green bonds to finance renewable energy and energy efficiency projects. The bank has committed to providing $200 billion in financing for sustainable businesses and projects by 2030[32,33].
- **Impact investment funds:** They are investment vehicles that target social and environmental goals in addition to financial returns. These funds typically invest in companies that are aligned with sustainable and socially responsible values.
  - Goldman Sachs offers impact investing opportunities through their Goldman Sachs Asset Management division, including private equity funds and fixed-income investments that prioritize social and environmental impact[34].
- **Sustainable credit cards:** These offer rewards for purchases made with environment-friendly retailers or for purchases of sustainable products. These credit cards may also donate a percentage of each purchase to environmental or social causes.
  - Swedish sustainable banking service, Doconomy, allowing users to estimate the CO2 emissions emitted by each purchase made with their card, with calculations estimated based on the product category. Doconomy works with Italian Bank Flowe, US-based Bank of the West (a subsidiary of BNP Paribas), and Nordea, a financial services company based in Finland[35].
- **Community development loans:** These provide financing for low-income or disadvantaged communities for projects such as affordable housing, small business development, and community facilities.
  - Beneficial State Bank is an example of community development banking that focuses on creating social and environmental benefits. The bank offers a range of sustainable products, including loans for affordable housing and community development projects, as well as deposit accounts that support environmental and social causes[36].

Sustainable investing

This is an investment approach that seeks to generate financial returns while also promoting ESG considerations. It is based on the idea that companies that perform well on ESG factors are more likely to generate long-term value and be better equipped to manage risk.

The two main approaches to sustainable investing are positive and negative screening.

- **Positive screening:** This involves selecting companies that perform well on ESG factors to make investments. This may include companies that have strong environmental or social practices, or those that are actively working to address ESG risks
- **Negative screening:** This involves excluding certain companies or sectors from investment portfolios based on ESG criteria. For example, a portfolio manager may exclude companies that are involved in fossil fuels or weapons manufacturing

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31 new Resource Bank - The field guide to a regenerative economy (capitalinstitute.org)
32 Wells Fargo Newsroom - Wells Fargo Issues $2 Billion Inclusive Communities and Climate Bond (wf.com)
33 Wells Fargo Sustainability Bond Framework (wellsfargomedia.com)
34 ESG and Impact Investing (gsam.com)
35 Doconomy redefines green credit cards (2020 review) (thalesgroup.com)
36 Beneficial State Bank | Client Spotlight: Resources for Community...

A few examples of sustainable investing by banks:

- Triodos Bank, a European bank that specializes in sustainable banking, has developed a methodology for assessing the climate impact of its lending and investment activities. The bank has set a target of reducing the carbon intensity of its lending and investment portfolios by 32% by 2030, and to be completely climate neutral by 2035[37].
- JPMorgan Chase is committed to achieving Net-Zero financed emissions by 2050 and has set targets to reduce its financing of coal, oil, and gas companies. The bank has also pledged to provide $1 trillion in sustainable finance by 2030. It announced the expansion of its 2030 financed emissions targets to a series of new carbon-intensive sectors, including aviation, iron and steel, and cement[38].

Sustainable infrastructure

This refers to physical facilities and systems that are designed and operated in such a way that they minimize negative environmental impacts and maximize economic and social benefits. Some examples include:

Green buildings | Transportation | Renewable energy | IT systems | Paper reduction

Source: CRISIL GR&RS

- **Green buildings:** FIs can design and build their facilities with environmentally friendly materials and technologies, such as low-flow plumbing fixtures, energy-efficient lighting, and green roofs. They can also seek certification from programs such as Leadership in Energy and Environmental Design (LEED) or the Green Building Initiative to demonstrate their commitment to sustainability.
  - Barclays Bank has constructed green buildings in New York and London with features such as rainwater harvesting system and living wall[39].
- **Transportation:** FIs can encourage the use of public transportation among their employees and customers by offering incentives, such as transit passes or bike share memberships. They can also locate their facilities near public transportation hubs to reduce car use and emissions. They can promote sustainable transportation options for their employees and customers, such as providing bike racks, electric vehicle charging stations, and public transit passes.
  - BNP Paribas has implemented a bike-sharing program at its Paris headquarters and has provided electric vehicle charging stations at its New York office[40].
- **Renewable energy:** FIs can generate their own renewable energy by installing solar panels or wind turbines on their facilities. They can also purchase renewable energy credits (RECs) or carbon offsets to offset their energy use and support renewable energy development. By implementing sustainable infrastructure, FIs can reduce their environmental impact,

37 Triodos 2022 Integrated Annual Report
38 Our Commitments (jpmorganchase.com)
39 Barclays Center to be Topped with Massive Green Roof | ArchDaily
40 Tech at the service of sustainable mobility - BNP Paribas (group.bnpparibas)

save money, and gain reputation as socially responsible organizations.

- **Paper reduction:** FIs can reduce their paper consumption by implementing electronic document management systems, encouraging online banking, issuing e-statements and using recycled paper products.
  - Wells Fargo has implemented a paper reduction program that resulted in a 23% reduction in paper usage over the past decade and uses paper made from >30% post-consumer waste[41].
- **IT systems:**
  i) Sustainable IT systems can be significantly beneficial for FIs. They can help reduce energy consumption, decrease carbon footprint, improve operational efficiency, and enhance data security. Some examples include virtualization, cloud computing, using energy-efficient hardware, sustainable software development, etc
    - The Amman Stock Exchange (ASE) faced critical challenges related to its outdated IT infrastructure, including performance issues, high maintenance costs exceeding USD 35,000 annually, and operational complexities. However, on implementing the HCI, the ASE experienced a remarkable transformation. Its rack space requirements were reduced, resulting in substantial energy and space savings. It also significantly improved operational efficiency, allowing for zero recovery time objectives (RTO) and recovery point objectives (RPO) through seamless VM migration. Apart from significant reduction in the maintenance costs, this transition also offered a potential annual savings of over USD 56,000 in licensing and support costs[42].

  ii) Data centers contribute to 2% of global emissions globally and 0.5% of GHG emissions in the US[43]. By engaging with sustainable providers of IT infrastructure, FIs can de-risk their business from a sustainability perspective, and focus on their core business without compromising on their emissions targets

Sustainability has thus become a key component of the strategy of FIs, enabling them to meet their ESG goals while creating long-term value for their stakeholders.

Financial Services and Sustainable IT Infrastructure:

Financial services can adopt IT infrastructure that provides sustainable solutions by incorporating various strategies and technologies. This includes leveraging renewable energy sources, implementing virtualization and cloud computing, using energy-efficient hardware, and adopting sustainable software development practices. By doing so, FIs can reduce their carbon footprint, improve operational efficiency, enhance data security, and meet the increasing demand for sustainable investments. The circular relationship between financial institutions and IT infrastructure providers allows for the integration of sustainable solutions into supply chains, facilitating the achievement of sustainability targets for both parties.

41 Environmental, Social, and Governance (ESG) Report (wellsfargomedia.com)
42 Nutanix - Amman Stock Exchange
43 Data center emissions contribution

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