Green Finance: Concept, Current Development and Regulatory Framework

EXECUTIVE SUMMARY

As climate risk issues are becoming the most real concern worldwide, actions have been taken throughout the world in order to survive climate change. It is important to understand that **survival** is the cause of the economic challenges of the climate transition, for which we are all responsible, and there is no doubt it will cost a lot. While there are challenges, there are also opportunities. Given that climate change is an existential risk, it follows that those businesses that are part of the solution will create substantial value.Innovators and founders are coming up with solutions to protect the environment. For example, 1,200 so-called climate tech start-ups have already been identified. However, scaling up these innovations poses the greatest challenge. How to **mobilize finance** for green activities or technologies that promote a greener economy? This is where the **financial market** plays a role as a fulcrum between finance and green activity. This report will focus on the concept, development, and regulatory framework underpinning the financial market's transition to Green Finance.

Bold commitments to tackle climate change, labelling the next 10 years as the "decade to deliver"

Governments worldwide have committed to the **Paris Agreement** and **Sustainable Development Goals (SDGs).** Attaining the SDGs and achieving net-zero emissions would require a rapid and dramatic increase in green activities' investment and finance. Global investment and finance must increase over the next decade to put the world on pace to achieve these targets by 2050. To what extent these commitments are fulfilled will largely depend on the mobilization of finance, which is wholly dependent on the financial market ecosystem. This ecosystem includes market participants, market instruments, and, most importantly, the regulatory frameworks. The report will examine:

1. The developments and key aspects of the regulatory frameworks
2. Defining Green, discussing financial regulations and standards such as disclosure requirements, reporting, and taxonomy
3. The roles of the financial system's **rule-makers** include central banks, financial regulators, finance ministries, and standards institutions, alongside market-based standard-setters like stock exchanges and key international organizations and platforms.

Main jurisdictions covered: European Union, China, and with a special focus on Kazakhstan.

The report is structured to provide developments, challenges, analysis, key takeaways, and recommendations.

Contents

1. Green Finance: Common approach to defining "Green" in finance

Today, off the shelf, a universal and workable definition or framework of Sustainable Finance does not exist in concrete. However, a cohort of market-led international initiatives and working groups have developed guidelines that have emerged and consolidated in the finance market, such as Green bond principles, Social bonds, Equator Principles, Responsible investments, Climate Bonds Standards and more. Not surprisingly, there is a proliferation of definitions of "green" across different financial regulatory frameworks, which may or may not be in line with each other. These definitions have been created to reflect the underlying motivations of financial institutions, governments, and international organisations. Nation wise development of classifying green in finance has already begun. Notably, China's Policy on Green Finance and the EU Taxonomy law are worth mentioning.

1.1 What is green finance ?

Green finance, at its most basic level, is an interplay between financial activities and institutions and the environment. It encompasses a variety of financial instruments used as tools for investments that are used to promote the development of green projects, businesses, and activities, especially to mitigate the climate effect of more conventional initiatives and for adaptation to climate change or to achieve a particular environmental goal.

Let's examine some definitions:

People's Bank of China:"*Green finance policy refers to a series of policy and institutional arrangements to attract private capital investments into green industries such as environmental protection, energy conservation and clean energy through financial services including lending, private equity funds, bonds, shares and insurance."*

Government of Germany: "*Green Finance is a strategic approach to incorporate the financial sector in the transformation process towards low-carbon and resource-efficient economies, and in the context of adaptation to climate change"*

Organisation for Economic Co-operation and Development (OECD): "*Green Finance is finance for "achieving economic growth while reducing pollution and greenhouse gas emissions, minimising waste and improving efficiency in the use of natural resources."*

World Bank: *"growth that is efficient in its use of natural resources, clean in that it minimizes pollution and environmental impacts, and resilient in that it accounts for natural hazards and the role of environmental management and natural capital in preventing physical disasters*."

Above are a few examples of how green finance is defined around the world.

The term green finance is used in the context of categorising the following as "Green":

1. **Specific financial products or services**

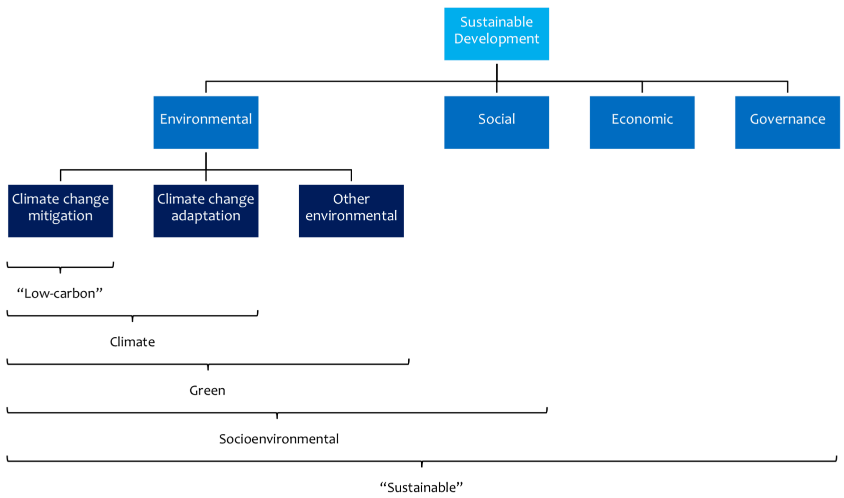
2. **Industry or sector**

3. **Organisational approach**

1.2 Green finance :Broader or Narrow concept

The term green finance is often considered synonymous with principles such as environmental, social, and governance (ESG), sustainable finance (SF), low-carbon financing (LCF), and climate finance (CF). There is growing acceptance that all of these notions are connected, but some are more broad in scope than others.

Diagram : Understanding relationship spectrum between the terms (UNEP)



Source : http://unepinquiry.org/wp-content/uploads/2016/09/1_Definitions_and_Concepts.pdf

The Diagram, sets out the general distinction that can be drawn between approaches to sustainable finance that take a broad environmental, social, economic, and governance approach, and those that take a narrower approach. Green finance is concerned only with environmental issues. Even more narrowly focused are those targeted only at climate change mitigation and/or adapting to climate change impacts. Therefore, green finance is a subset of the broader concept of sustainable finance, which accommodates climate change mitigation and climate change adaptation.

Despite the categorization, all these concepts do overlap and interrelate with each other. For instance, any climate change related risks will have an impact on social and economic development, while governance includes the extent to which these risks are incorporated by the companies. For this reason, economic, social governance (ESG) should be incorporated into most of the definitions of green finance.

It is important for the stakeholders to identify their sustainable targets clearly and accordingly use the terminology in drafting the framework concerning "Green" finance.

1.3 Methodology used for defining Green

As previously stated, stakeholders use a variety of definitions that more or less embrace various dimensions of finance with regard to the "green," spanning from green finance to sustainable finance or a mix of the two. This is more of a general definition. To attain more clarity, a more precise definition is required, which can only be accomplished by the development of more detailed criteria for what constitutes green.

The financial system's rule makers are stepping forward and establishing their own green criteria. For example, sustainability indices like the Green Equity Sustainable Index, banking associations forming guidelines for green lending and green bonds, and international initiatives for sustainable investing. All these different actors apply a basic approach to establish the concept of what constitutes "Green".

In general, these approaches are built on the following methodology.[1] :

1. **Objective:** This basic approach to defining green is by specifying the outcomes such as climate change mitigation, resilience, pollution prevention, etc.

2. **Taxonomy:** Green taxonomies are classifications of investment areas and items like technologies, sectors, and projects that are considered to be green. Taxonomies are more detailed and specific. A good example would be the Climate Bond initiative. The Climate Bonds Initiative provides green definitions that are sector specific, developed by scientists and industry experts under their Climate Bond Taxonomy.

3. **Exclusion criteria**: This is used to exclude certain sectors, companies, activities, etc. from the definition of green. Often, exclusion criteria identify specific technologies, such as nuclear energy.

4. **Indicators**: Metrics for measuring the environmental performance or impacts of activities (energy/water savings, GHG emissions reductions, etc.). Indicators can come with thresholds, or minimum acceptable performance levels, and/or with target values, illustrating the desired performance level. Indicators can allow for backward-or forward-looking performance measurement.

5. **Ratings:** Ratings allow for the degree of greenness of a firm, technology or financial product to be assessed according to predefined criteria. For example, CICERO's Shades of green.

6. **Process:** Provides an opportunity to foster the green impact of finance and investments without specifying exactly which investments are eligible. Instead, they require issuers, investors, or creditors to address and communicate the environmental effects of their financial decisions.

Several financial institutions, banks, and states have implemented two or more methodologies to define green sectors and activities into their frameworks. Consider the Nordic Investment Bank's Environmental Bond Guidelines (shown as a case study below). It's worth noting that it has a designated "Blue Bond" for water management and protection. An indication of how to integrate SDGs more precisely than generally.

Quick Case Study

Nordic Investment Bank: The bank provides guidelines on the issuance of environmental bonds. NIB Guideline Process:

1. **Exclusion criteria: It excludes certain activities.**

2. **Sectors eligible: (Methodology: Objective and General taxonomy)**

- **Energy efficiency**
- **Renewable energy generation**
- **Transmission, distribution, and storage systems**
- **Clean transport solutions, resources and waste management systems**
- **Water management and protection**
- **Green buildings**

3. **ESG Review (Broader concept of Green)**

4. **Mandate rating (Methodology: Ratings)**

5. **Reporting and assessment (Methodology: Indicators)**

1.4 Dimension of green under Green Bond Principles

The International Capital Market Association's (ICMA) Green Bond Principles(GBP) are the industry's principles for green bonds and, by extension, social bonds, sustainability bonds, and sustainability-linked bonds. These are voluntary recommendations. In recent years, about 97 percent of stakeholders have referred to and implemented the ICMA rules.These rules have set out green project categories in accordance with its own environmental objectives-Climate Change Mitigation, Climate Change Adaptation, Natural Resource Conservation, Biodiversity Conservation, and Pollution Prevention and Control.[2] However, it should be noted that:

1. The guidelines do not advocate for any particular taxonomy or environmental standard. Rather, they provide an overview of the most frequently used green project categories that the green bond market is currently supporting or is expected to support in the future, based on market trends and best business practices.

2. It makes no determinations regarding which green technologies, standards, claims, or declarations are the most environmentally sustainable.

3. It serves as a framework for comparing alternative market systems.

4. It establishes a broad framework for mapping finance objectives in relation to the SDGs for issuers, investors, and bond market players.

Mapping can be a good tool to trace the categories to the objectives, enabling stakeholders to identify important focus areas in relation to the sustainability aims of various geographies.

Table : Mapping the extent categories to the objective.

	GBP - Environmental objectives				
GBP-project categories	Climate change mitigation	Climate change adaptation	Biodiversity	Natural resource conservation	Pollution prevention and control
Renewable energy	● ● ●			●	●
Energy efficiency	● ● ●				●
Pollution prevention and control projects				●	● ● ●
Environmentally sustainable management of living natural resources and land use	●	● ●	● ● ●	● ● ●	
Terrestrial and aquatic biodiversity conservation projects		●	● ● ●	● ● ●	
Clean transportation	● ● ●			●	● ● ●
Sustainable water and waste water management		● ●	● ●	● ●	● ● ●
Climate change adaptation projects		● ● ●			
Eco-efficient and/or circular economy adapted products, production technologies and processes	● ●		●	● ● ●	●
Green buildings	● ● ●	●		● ● ●	●

Contribution to objective:

primary ● ● ● secondary ● ● tertiary ●

Source: https://www.icmagroup.org/assets/documents/Sustainable-finance/2021-updates/Green-Project-Mapping-June-2021-100621.pdf

A comparison of the similarities and differences between the current definitions of green finance used in major markets reveals that a more precise definition and taxonomy would aid in market clarity, investor trust, and measurement and monitoring.

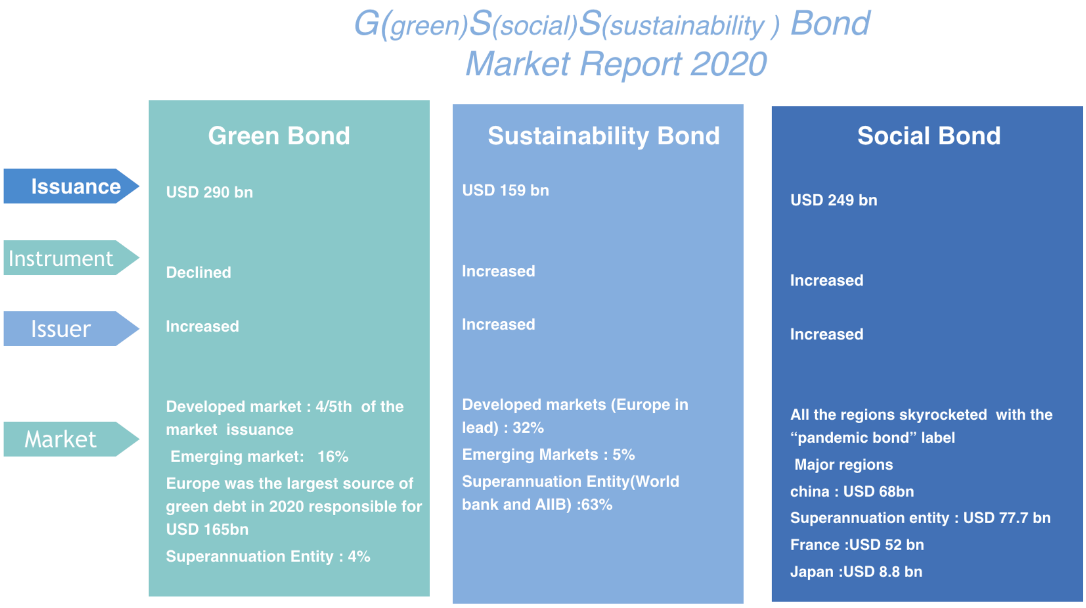
Next : Progress in Green Finance

2. Green finance: Market Progress

2.1 Figures

Global sustainable investment was USD 35.3 trillion at the start of 2020, up 15% from 2018. The growth in sustainable investment is led by major nations, with Canada leading the way, followed by the United States, Japan, Australia, and Europe.

According to the Climate Bonds initiative's Sustainable Debt-Global State of the Market report, the sustainable debt market reached a cumulative USD1.7tn at the end of 2020, with almost 10,000 instruments issued under Green, Social and Sustainability labels since 2006. Green bonds stood at USD1.1tn, with sustainability bonds at USD316.8bn and social bonds at USD315.6bn.



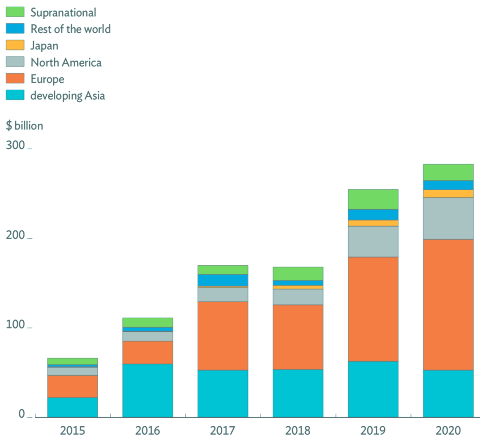
As per Moody's forecast, the bond market will expand to $375 billion of green bonds, $150 billion of social bonds, and $125 billion of sustainability bonds in 2021. Sustainable bonds could represent 8-10% of total global bond issuance in 2021.[3]

2.2 Popular investment strategies

The most common sustainable investment strategy is ESG integration, followed by negative screening, corporate engagement and shareholder action, norms-based screening and sustainability-themed investment. [4]

2.3 Market growth

Most sustainable investment is domiciled in developed countries and targeted at assets in developed markets. Asia contributed about 20% in 2020.



Source : Bloomberg

Whilst the developed economies still dominate the global green and social finance landscape, Asian economies have been becoming active players. China and India are worth mentioning. The ESG approach to investing is becoming a common practice in Asia. The latter is at the forefront of introducing regulations and policy guidelines on green and social bonds.

2.4 Growing Trend in Islamic Financing

Asia is becoming a hub for global green bond markets. With China and Japan leading the way, the region now accounts for around a fifth of global green bond issuance. The unique feature of Asia is its markets for green sukuks in Islamic financing, where the proceeds are used to fund environmental projects under Sharia law. **The first green sukuk was issued by Malaysia in June 2017**. The market for green sukuk has increased fivefold ever since. From 2017 to September 2020, **$10 billion worth of green sukuks** have been issued in jurisdictions like Indonesia, Saudi Arabia, and the United Arab Emirates.[5]

These developments in green finance will continue to grow in the coming future and the trajectory will be dependent on many factors, essentially the regulatory framework.

Green and social finance, especially from private sources, has grown rapidly across the world in recent years, accompanied by a great deal of innovation. Such as in 2021, Amazon announced the issuance of a $1 billion sustainability focused bond: renewable energy, clean transportation and sustainable buildings.

Next : Green Framework : Challenges and Development in Green Framework

3. Green finance: Regulatory framework challenges and development

3.1 Challenges and Developments

As reported in the United Nations Environment Programme's 2020 Emissions Gap report, despite a brief dip in carbon dioxide emissions caused by the COVID-19 pandemic, the world is still heading for a temperature rise of 3°C this century. This is far beyond the Paris Agreement goals of limiting global warming to well below 2°C and pursuing 1.5°C.

Code red for Humanity. The United Nations's Inter-governmental Panel on Climate Change in its recent sixth assessment called for code red for humanity. This means we will surpass 1.5°C in the near term. Climate change is underway and posing material risks to humanity and the whole ecosystem. Our civilization's existence is contingent upon leaders from government, business, and civil society banding together to support policies, actions, and investments that limit temperature rise. Structural changes are gaining momentum, like technological innovation, market forces, policy frameworks, and social sentiments, which in itself creates new risks and opportunities for the financial and capital markets.

Mainly there are three categories of Climate financial risk :

1. **Physical risks:** pressure on financial markets due to extreme weather events like heat waves and rising sea levels.

2. **Transition risk:** pressure on financial markets as society adjusts to a low-carbon economy, which may lead to stranded assets. (Due to the changes in technology, policy, markets, and consumer sentiment)

3. **Liability risks:** relates to climate risk insurance claims. This covers insurance sector policies and framework. (This will not be dealt with in detail in this report, but the importance of the insurance sector can not be ignored considering its development, such as techniques used by the sector to asses liability risk exposure-"risk modeling" and "stress test")

There are other issues which are getting recognised as the nature and intensity of climate risk changes. Globally, the cumulative number of climate change-related legal cases has more than doubled since 2015. These cases target a wider variety of private sector and financial actors and there is more diversity in the arguments being used. For example, green-washing and fiduciary duty.[6]

While awareness of these risks is increasing, understanding of these risks is still limited due to the complexity and uncertain nature of the risks.

If the exposure to these risks is not properly analysed, understood, and disclosed, capital may be misallocated, with implications on financial stability.

Lack of data = lack of decision

Financial management of these risk(s) is critical, with issues of uninsured or under insured climate risks and green transition risk (stranded assets) being of primary importance. Countries that are heavily reliant on fossil fuels may suffer negative consequences when it comes to the transition to a green economy. Therefore, t**he preparedness of industry** for the transition to green is of the utmost importance. The preparedness can only be there through the clear and concrete availability of **DATA** to identify the potential risks. This brings us to the issue of **Transparency and Disclosure** in the financial and corporate sectors of climate risk and other environmental exposures.Many efforts have been made, especially by the private sector, to enhance transparency and disclosure as well as align disclosure with SDG goals, such as the Task Force on Climate-related Financial Disclosures**(TFCD)**, Global Reporting Initiatives framework**(GRI)**, Sustainability Accounting Standard Board framework **(SASB)**, International Capital Market Association **(ICMA)** rules and more. Despite their voluntary nature, these guidelines are at the forefront. However, there still remains a lack of a common disclosure framework globally, especially mandatory frameworks. The rule makers and other market players are confronted with issues like:

1. The right combination of voluntary or mandatory approach.
2. Integration of SDGs.
3. Choosing from a variety of disclosure options such as annual reporting, sustainable reporting, quantitative statements , integrated reports or segregated with respect to sustainability and financial disclosure.
4. Implementing global standards into their own unique geographies.

3.2 Let’s examine few commonly used frameworks:

Global Reporting Initiatives (GRI)

The GRI standards provide vital support to government and market regulators in developing sustainability reporting policies and regulations. It represents global best practice for reporting publicly on a range of economic, environmental and social impacts. Around 160 policies in 60 countries are in line with GRI standards. These standards are aligned with SDGs for which several initiatives have been developed by GRI, such as the SDG corporate tracker, SDG index and SDG assessment.

The GRI Standards are set out as a collection of standards that are inextricably linked.The disclosure format is unique in that it establishes mandatory requirements, recommendations, and guidance that are based on the following foundational principles:

1. **Principles for defining report content:** This includes inclusiveness of stakeholders' exceptions and interests, examining organisations' performance in the context of the limits and demands placed on economic, environmental, or social resources, at the sectoral, local, regional, or global level and application of materiality principles and completeness.

2. **Principles for defining report quality:** This includes accuracy, balance, clarity, comparability, reliability, and timeliness.

GRI provides topic-specific standards:

Disclosure 306-1
Waste generation and significant waste-related impacts

Reporting requirements

Disclosure 306-1

The reporting organization shall report the following information:

a. For the organization's significant actual and potential waste-related impacts, a description of:

  i. the inputs, activities, and outputs that lead or could lead to these impacts;

  ii. whether these impacts relate to waste generated in the organization's own activities or to waste generated upstream or downstream in its value chain.

Reporting recommendations

1.2 The reporting organization should report a process flow of inputs, activities, and outputs that lead or could lead to significant waste-related impacts.

Guidance

In furtherance to the above reporting standards, in order to capture SDGs in the disclosure, the GRI has also developed business tools in collaboration with the UNGlobal Compact:

1. An analysis of goals and targets provides a list of indicators to make SDG reporting straightforward.

2. Integrating SDGs into corporate reporting: it outlines 3 steps for companies to embed SDGs into their existing reporting systems: a. Defined priority of SDG targets, b. Measure and Analysis, and c. Report, Integrate and Implement.

3. In Focus: Addressing investor needs in business reporting: provides a relevant aspect of SDG reporting.

4. Linking the SDGs and the GRI Standards.

GRI and stock exchanges: A growing number of stock exchanges and regulators around the world reference or require use of the GRI Standards for sustainability (or ESG) reporting by listed companies.

Task Force on Climate-related Financial Disclosures (TCFD)

TCFD is a voluntary scheme. It has almost 1,500 supporters across 55 countries, 1340 companies with a market capitalization of over US $12.6tn, and financial institutions with assets of over US $150tn. In addition, central banks and supervisors across the globe through the Network for Greening the Financial System (NGFS) have encouraged countries to disclose in line with TFCD guidelines.

The guidelines are built around four fundamental elements:

1. **Governance:** Requiring disclosure of organizations' governance around climate risks and opportunities. This would include board members' oversight and management's role.

2. **Strategy:** Requiring disclosure of true and potential impacts on business, strategy, and financial planning. This would include describing climate related risks and opportunities, their impact and resilience of the company's strategy, taking into consideration different **scenario analysis.** (Just like Stress Test in the insurance sector)

3. **Risk Management**: Requiring disclosure of how climate related risks are identified, assessed and managed. These include the processes for identifying and assessing climate related risks, processes for managing climate related risks, and how these processes are integrated into overall risk management.

4. **Metrics and Targets:** Disclosure of the methodology, scope, and targets used to assess and manage climate related risks where material.

TFCD is continuously working on its guidance and clarifying its implementation. It has encouraged companies to adopt Scenario Analysis for disclosure and to integrate climate risk into the risk management process. In addition, it encourages alignment with its guidelines. While the TCFD standards have garnered widespread approval across all jurisdictions, the question arises as to the extent to which these guidelines have been followed by the industry? The Task Force recently conducted an investigation by utilising artificial intelligence (AI) technology to ascertain the disclosure reports' compliance with TFCD requirements.

The Task force's AI review found that : [7]

1. Disclosure of climate related information has increased since 2017, but continuing progress is needed.

2. Disclosure is primarily made in sustainability reports.

3. 1 in 15 companies reviewed disclosed information on the resilience of their strategy.

4. Larger companies are more likely to disclose TFCD aligned information.

5. Disclosure varies across regions, with Europe on top of this agenda.

6. Significant variation in reporting in terms of content, specific details, focus and quality.

The AI assessment sheds light on the implementation of these voluntary recommendations, highlighting the gaps in the reports while also demonstrating increasing acceptance of the guidelines. Thus, priority should be given to implementation issues and quality issues.

Green Bond Principles (GBP) Guidelines on Impact reporting

The GBP guidelines on impact reporting are the joint work of the working group of four Multilateral Development Banks (AfDB, EIB, IFC, and the World Bank). The working group has developed and published a harmonized framework for Impact Reporting along with 11 International Financial Institutions (IFIs). The framework sets out principles to guide the issuers by providing core indicators and reporting templates for the following sectors: Energy Efficiency and Renewable Energy Projects, Sustainable Water and Wastewater Management Projects, Sustainable Waste Management and Resource-Efficiency Projects, Clean Transportation Projects, Green Building Projects, and Circular Economy.

The recommendation is based on four fundamental principles[8]-

1. **Use of proceeds:** recommends Green bond proceeds are to be applied to environmental projects with an indicative list of eligible project categories.

2. **Process for project evaluation and selection:** recommends issuers to disclose their overall sustainability objectives and the process used to determine a. eligibility of green projects, b. their management and c. environmental and social risks of these projects, which should be supplemented with external review.

3. **Management of Proceeds:** recommends that the issuer should credit a sub-account, shift a sub-portfolio, or otherwise track the net proceeds of the Green Bond, and attest to them in a formal internal process linked to its lending and investing operations for Green projects. The issuer shall publish a periodic reconciliation of the green account against project expenditures and where the unallocated balance is stored. Encourages third-party auditing of internal tracking and allocation processes.

4. **Reporting:** recommends annual reporting on the amounts allocated and the outcomes of qualifying green initiatives until "full allocation" is achieved and as necessary thereafter in the event of major developments. The focus is on post issuance reporting.

These principles are particularly concerned with tracking the funds' use and determining the best approach for tracking them and ex ante and ex post impact reporting. GPG is widely adopted in the financial markets in many jurisdictions. Let's examine their implementation statistics covered in the post issuance report of climate bond initiative 2021. The key findings are as follows:

1. The report on Use of proceeds is seen as higher in comparison to the impact report.
2. Large issuers are more likely to report.
3. The quality of reporting is improving, but still varies considerably; larger issuers and more mature green bond markets are more consistent.
4. Impact reporting is increasingly common, but more complex than Use of Proceeds reporting and highly unstandardised.
5. The vast majority of issuers that report impacts only do so post-issuance, not at issuance, or very few do both.

These principles are yet another great effort to increase transparency in the green bond market. Serious efforts have been made to bring uniformity in the methodology of the impact reports through tracking. Notable initiatives are the Green Bond Transparency Platform (GBTP), Green Assets Wallet (GAW), and the Nasdaq Sustainable Bond Network (SBN). Some of these platforms use blockchain technology to increase the transparency and efficiency of impact reporting.

3.3 Market Players efforts

Stock Exchanges

Numerous significant stakeholders have developed rules and guidelines promoting green finance in the last few years. The trend is particularly noticeable in the Stock Exchange, where 37 markets have created specialist sectors to improve the visibility of green products. The number of exchanges that have written guidance for issuers on ESG disclosure has increased from 13 in 2015 to 56 by the end of 2020. Mandatory ESG reporting has also grown in popularity over the last few years, bolstered by both exchanges and securities market authorities. The number of markets requiring mandatory ESG disclosure has increased from two to twenty-five.[9]

Stock exchanges are strategically positioned to assist and encourage their members toward more comprehensive and high-quality reporting over time.

Notable effort is the Sustainable Stock Exchange Initiative (SSE). The SSE is a global platform for investigating how exchanges, in collaboration with investors, companies (issuers), regulators, policymakers, and relevant international organisations, can improve ESG (environmental, social, and corporate governance) performance and promote sustainable investment, including financing for the United Nations Sustainable Development Goals. Around 110 stock exchanges are actively involved.

110 Stock exchanges	56,566 Number of listed companies	91,527,295 million US$ Domestic market capitalization

In 2015 ,the SSE launched its Model Guidance on ESG Disclosure to help stock exchanges guide their market on ESG reporting. Since this launch, it has found that the majority of stock exchanges now guide their markets on non-financial reporting and choose to indicate more than one framework companies may wish to use.The SSE's database of stock exchange guidance on ESG reporting found that more than 75% of guidance documents referenced three or more frameworks, with GRI (91%), SASB (75%), TCFD (73%), and IIRC (66%) being the most referenced.

Nasdaq Stock Exchange

We recognize our unique role as a partner and facilitator to help companies listed on our exchanges meet their own diversity and inclusion goals. One prominent example of our work in this regard is a proposal for a standardized disclosure framework to help companies listed on our U.S. exchange provide greater transparency regarding diversity among their board of directors."Adena Friedman, President & CEO, Nasdaq

The Nasdaq ESG reporting guide, which was launched in 2017 and updated in 2019, gives rules for managing ESG reporting. The standards were created to accomplish many objectives.

1. Eliminate and revise uncommon or impractical metrics.
2. Incorporate new developments in the marketplace (such as TCFD, SDGs, GRI Standards, EU NFR Directive, and others)
3. Simplify and standardize guidance, labels, and calculations
4. Improve ESG engagement for small-and medium-sized business enterprises.
5. Cover all Nasdaq markets.

Guideline Focus

1. **Identifying stakeholders:**includes investors, indexers and innovators, government, non-government organisations, suppliers and supply chain, human capital, academic and analytics, media and rankers, raters and reporters.

2. **Assessing Materiality:**does not lay down the process of materiality. However, it encourages listed companies to consider the impacts of external stakeholders and ecosystems in addition to those directly affecting the company when evaluating materiality.

3. **Management of data reporting:** how a company gathers the data, disseminates it internally, structures a team to better understand it, and incents others to improve performance are equally important parts.**A** digital platform is established which acts as a reference library, central repository and workflow tool to build a disclosure footprint.

4. **Alignment with SDG goals**

5. **Metrics:Linking ESG data points to available frameworks:**This includes: Why is it measured? How is it measured?Why is it disclosed? How is it disclosed? And Connection to the current framework. Example:

E1. GhG Emissions

E1.1 Total amount, in CO2 equivalents, for Scope 1 (if applicable)
E1.2 Total amount, in CO2 equivalents, for Scope 2 (if applicable)
E1.3 Total amount, in CO2 equivalents, for Scope 3 (if applicable)

Why is it measured?	Greenhouse Gas (GhG) emissions are significant determinants of climate change and global environmental health
How is it measured?	By tracking the actual or estimated atmospheric emissions produced as a direct (or indirect) result of the company's consumption of energy
Why is it disclosed?	Understanding every company's emissions profile is an essential precursor to meaningful and shared climate intervention
How is it disclosed?	As a number, trended over time (and compared against historical and industry averages, if possible)
Connections to Frameworks	• GRI: 305-1, 305-2, 305-3 • UNGC: Principle 7 • SASB: General Issue / GHG Emissions (See also: SASB Industry Standards) • TCFD: Metrics & Targets (Disclosure B)
Percentage of Companies Reporting?	80% (report at least one metric)
Notes & Sources	Please defer to the WRI/WBCSD GhG protocol; companies may elect to disclose performance targets for E1

Euronext Exchange

As part of the EU's 'Let's Grow Together 2022' policy, which places importance on sustainable initiatives, Euronext has developed ESG Reporting Guidelines for issuers on future best practices. Its primary purpose is as follows:

1. Identify and prioritise the opportunities and risks of greatest significance to a company's results and their most important stakeholders with regards to ESG.
2. Report efficiently on their management of and performance in areas of ESG risks defined in accordance with their own needs and those of their stakeholders.
3. Navigate, comply with or stay ahead of regulations that require disclosure of financially material ESG information.
4. Differentiate themselves on ESG matters and maintain high relevance, which is becoming a competitive imperative.

Guideline Focus

1. Responsibilities and oversight of the report: This includes identifying responsibilities, the role of the board of directors and the importance of different stakeholders- investors, customers, employees, civil society, suppliers

Reporting process:
2. Assessing Materiality: The EU Commission emphasises that companies should consider **double materiality perspectives** when determining the materiality of non-financial information: financial materiality, which refers to information about "non-financial" factors that may affect company value, and environmental and social materiality, which refers to the company's impact on environmental and social factors. (NFRD encompasses dual materiality)

3.Prioritization: Risks and opportunities identified as material to the company's stakeholders and having economic, social, and environmental implications should be prioritized in the company's activities and reporting on corporate responsibility.

4. Operational Management:

This includes defining targets and performance indicators (metrics).The guidelines recommend using commonly accepted indicators-SASB, GRI, and others.

Recommends: **XBRL reporting language.** As in financial reporting, it can be helpful to use XBRL, a digital reporting language for reporting corporate information that structures data consistently to improve its analysis. XBRL taxonomies are available from CDSB, CDP, and GRI.

Guidance framework followed by stock exchanges.[10]

Market	Stock exchange	Year	ESG Guidance	GRI	SASB	TCFD	IIRC	CDSB	CDP
Finland	Nasdaq Helsinki	2019	ESG Reporting Guide 2.0: A Support Resource for Companies	●	●	●	●		●
Luxembourg	Luxembourg Stock Exchange	2019	2019 Guide to ESG Reporting	●	●	●	●	●	●
Kazakhstan	Kazakhstan Stock Exchange	2018	Methodology of preparing an Environmental, Social and Governance report	●	●		●		
UK	London Stock Exchange	2020	Revealing the full picture: Your guide to ESG Reporting	●	●	●	●	●	●
France	Euronext Paris	2020	Guidelines to Issuers for ESG Reporting	●	●	●	●	●	●
China	Shanghai Stock Exchange	2008	Guidelines for Environmental Information Disclosure of Listed Companies in Shanghai Stock Exchange (in Chinese)						
China	Shenzhen Stock Exchange	2006	Social Responsibility Instructions to Listed Companies						
China	HKEX	2020	How to Prepare an ESG Report: A Step-by-Step Guide to ESG Reporting	●	●	●			

Insurance

Sustainable insurance is a strategic approach where all activities in the insurance value chain, including interactions with stakeholders, are done in a responsible and forward-looking way by identifying, assessing, managing and monitoring risks and opportunities associated with environmental, social and governance issues. Sustainable insurance aims to reduce risk, develop innovative solutions, improve business performance, and contribute to environmental, social and economic sustainability.

In April 2021, seven of the world's largest insurers and reinsurers launched a ground-breaking **Net-Zero Insurance Alliance** in collaboration with UNEP. The seven businesses – Allianz, Aviva, AXA, Munich Re, SCOR, Swiss Re, and Zurich Insurance Group realised that the global insurance and reinsurance industry can accelerate the transition to a resilient economy that is consistent with the Paris Agreement's 1.5°C target.[11] This includes comprehensive approaches to achieve the goal like[12] :

1. Setting underwriting criteria and guidelines for the most GHG-intensive activities.
2. Engaging with clients and potential clients with the most GHG-intensive activities on their decarbonisation strategies and net-zero transition pathways.
3. Developing and offering insurance and reinsurance solutions for low-emission and zero-emission technologies and nature-based solutions that absorb GHG emissions.
4. Improving claims management.
5. Integrating net-zero and decarbonisation-related risk criteria into their risk management frameworks.

The standards for insurance industry are established under Principles of Sustainable Insurance(PSI Standards): *The Principles for Sustainable Insurance provide a global roadmap to develop and expand the innovative risk management and insurance solutions that we need to promote renewable energy, clean water, food security, sustainable cities and disaster-resilient communities* **(Ban Ki-moon).** The Principles are intended to address significant ESG risks and possibilities and serve as the foundation for the United Nations and the global insurance industry's largest collaborative project to date.

Its four core principles[13]:

1. **Embedding environmental, social and governance in decision-making:**This includes company strategy, risk management, product and services development, sales and marketing and investment management
2. **Collaborating with business partners:** This includes dialogue with clients and suppliers providing them with tools and integrating ESG into the tender and selection process and promoting ESG integration with Insurers, reinsurers and intermediaries.
3. **Collaborating with government and regulators:** This includes supporting prudential policies, regulatory and legal framework that enable risk reduction and innovation and dialogue with intergovernmental and non-governmental organisations to support sustainable development by providing risk management and risk transfer expertise
4. **Demonstrating accountability and transparency**: This includes assessing, measuring and monitoring the company's progress in managing ESG issues and proactively and regularly disclose this information publicly.

Banks

The sustainable loan market is valued at approximately $200 billion in 2020. The frameworks underpinning these instruments are Equator principles, the Green Loan Principles established in 2018 and the Sustainability Linked Loan Principles established in 2019 by the Loan Market Association, a banking industry group.

Another great initiative is the Sustainable Banking Network by the World Bank Group, a collaboration of 31 emerging market banking regulators and groups focusing on establishing frameworks for environmentally and socially sustainable financing. Since the SBN's launch in 2012, 26 member countries have introduced frameworks outlining national regulations, voluntary industry norms, or sustainable finance rules. Over a fifth of the SBN's 41 member countries produced new sustainable finance framework documents in 2020 alone.

A Snapshot of some recent developments among the members:

1. In February, the National Bank of Georgia launched the ESG Reporting and Disclosure Principles, which provide guidance to Georgian commercial banks on ESG reporting and disclosure aligned with international good practice.
2. In April, Bangko Sentral ng Pilipinas, the Philippines' central bank, issued the country's first Sustainable Finance Framework, requiring banks to integrate environmental and social risk management into their corporate governance and risk management frameworks, as well as into their strategic objectives and operations.

3. In May, South Africa's National Treasury and Banking Association established a Climate Risk Forum to oversee implementation of recommendations in Treasury's Technical Paper on Financing a Sustainable Economy.
4. The Agency of the Republic of Kazakhstan for Regulation and Development of the Financial Market (ARDFM) joins the Sustainable Banking Network
5. In July, the People's Bank of China (PBOC) released a public consultation draft of its Notification on Evaluation of Green Finance Performance of Deposit-Type Financial Institutions in the Banking Industry (in Chinese). The proposal extends green evaluation coverage from green credit to include more financing tools, such as securities, investments, leasing, and trusts. Read more in English here.
6. In September, the Nepal Rastra Bank (NRB), Nepal's central bank, issued a Unified Directive to require all banks and financial institutions (BFIs) to integrate social and environmental risk management (ESRM) into their overall credit risk management process and formulate ESRM policies in compliance with the NRB's Guidelines on ESRM for BFIs.

Areas of Concern

While the efforts to collaborate are underway, there are some areas of concern warranting additional guidance, especially on metrics, targets, and transition plans. The International Organization of Securities Commissions (IOSCO) specifically called out the need for comparable metrics and narratives as a priority improvement area.[14] Metrics and targets are critical for monitoring progress on climate-related policies, risk management, and quantifying the impact of opportunities. They play a critical role in effectively communicating an organization's climate-related transition strategy.The need for better alignment between climate-related metrics and targets is crucial.

Recent Developments

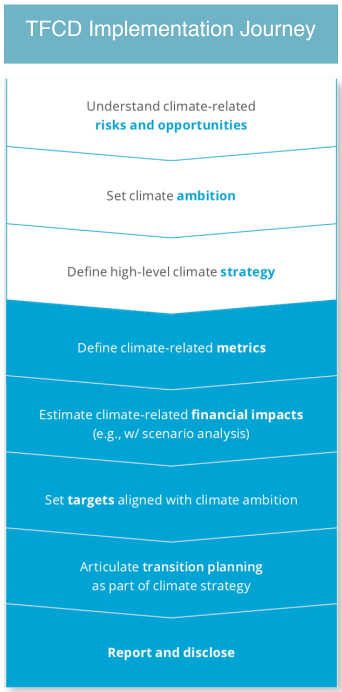
Working towards a comprehensive reporting system

1. The "**Group of Five**" GRI, CDP, Climate Disclosure Standards Board (CDSB), International Integrated Reporting Council (IIRC) and Sustainability Accounting Standards Board (SASB) "announced the collaboration in September 2020 to build a comprehensive reporting standard and issued a prototype standard for climate-related financial disclosures. The prototype presents a unified vision for financial accounting and sustainability disclosure that draws on the recommendations of the TCFD.[15]

2. As part of their work on global standard convergence, the International Financial Reporting Standards(IFRS) Foundation Trustees announced plans in February 2021 to establish an International Sustainability Standards Board (ISSB) that will work alongside the International Accounting Standards Board (IASB) to clarify sustainability accounting standards, building on the TCFD and Group of Five's well-established work.

3. Earlier this year GRI and SASB published a joint publication - A Practical Guide to Sustainability Reporting Using GRI and SASB Standards - which explores the experiences of companies that have chosen to use the two sets of standards together to communicate effectively with their intended audiences.[16]

Steps towards a common Metric Standard and Target.



1.The TFCD intends to release guidelines on stand-alone Metrics, Targets, and Transition Planning papers in fall 2021. In its draft consultation it focuses on the relationship between climate related metrics, climate related financial impacts, climate related targets and transition. The highlight of the draft is its proposed implementation journey. [17]

2.World Economic Forum's consultation draft on **Common Metrics and Consistent Reporting of Sustainable Value Creation.** The draft has proposed metrics and disclosure that are based on four pillars that are aligned with SDGs and ESG, namely; Governance, Plant, People, and Prosperity. Each pillar comprises themes based on existing standards and reporting frameworks. The metrics under the draft are set out as[18] :

A.Core metrics: These are generally quantitative measures for which many organisations already disclose data (though in varying formats) or for which data can be obtained with modest effort. They are mostly concerned with activities occurring within the confines of an organisation.

B.Expanded metrics: These are less well established in existing practice and standards and typically encompass a broader value chain or transmit influence in a more sophisticated or tangible manner, such as monetary terms.

3. The Future of Sustainable Data Alliance (FoSDA) announced the formation of a Data Council in February 2021. The Data Council will serve as a sounding board for industry and regulatory stakeholders, focusing on establishing consensus on critical ESG data issues and requirements for a sustainable future[19] .

Next: Let's examine the regulatory framework in three different jurisdictions: EU, China, and Kazakhstan, to understand the current state of the green finance framework to navigate opportunities and complexities.

4. Regulatory framework in EU, CHINA and KAZAKHSTAN

Evolving Taxonomies

What is a taxonomy?

A taxonomy is a classification tool which, for these purposes, classifies economic activities into distinct groups; green, and otherwise, plus activities that are transitional. Taxonomies of this type exist to support an overarching set of objectives, in this case environmental objectives, and to decide if activities are consistent with these objectives by referencing a threshold, or tolerance value.[20]

Advantages of taxonomy [21]:

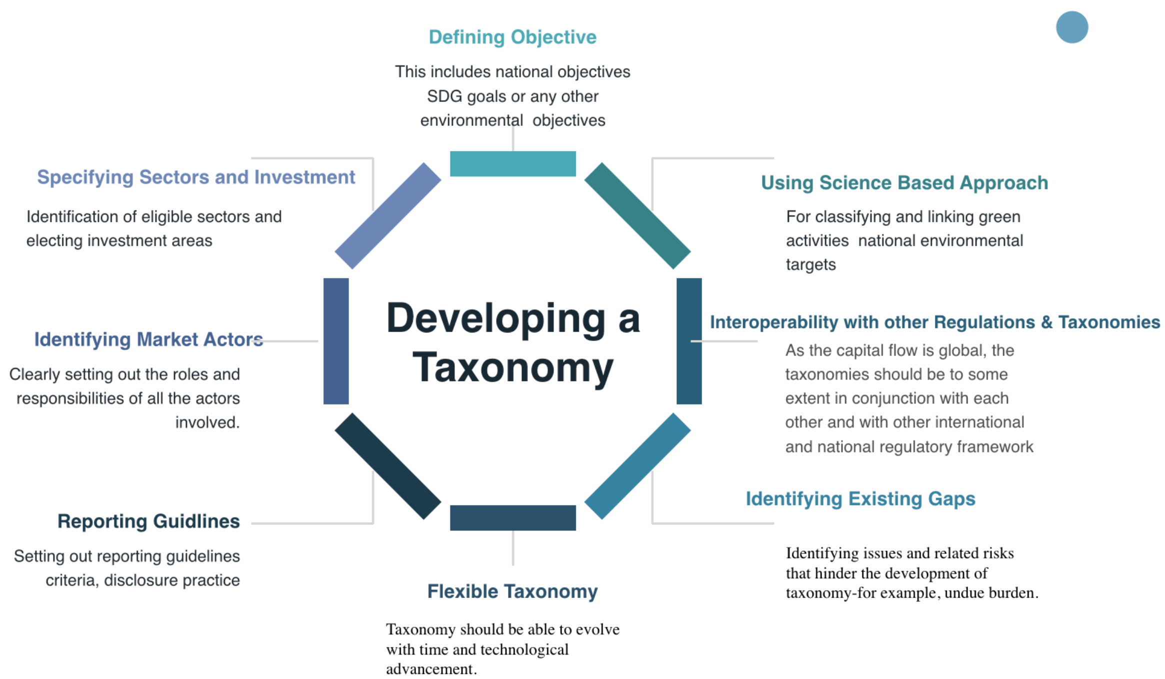
A well-defined and structured taxonomy can support better-informed and more efficient decision-making and response to investment opportunities that contribute to achieving national environmental objectives. In the absence of formally agreed-upon definitions, market actors tend to introduce their own; the result is a lack of comparability, reliability, accountability, and higher transaction costs. A national green taxonomy is useful for providing guidance to the overall financial market. Thus,

A. **Helps** in establishing clear criteria for determining activities as environmentally sustainable.
B. **Removes** uncertainty as to whether certain activities are environmentally sustainable.
C. **Brings clarity** to discussions about green and sustainable products.
D. **Alleviate** concerns about green-washing.

Developing a taxonomy :

The World Bank provides a guide for the development of taxonomy where key recommendations on the process and a structure-based approach have been recommended. A taxonomy should be developed that reflects the overall National Environment objective, as well as the broader social and environmental goals.[22]

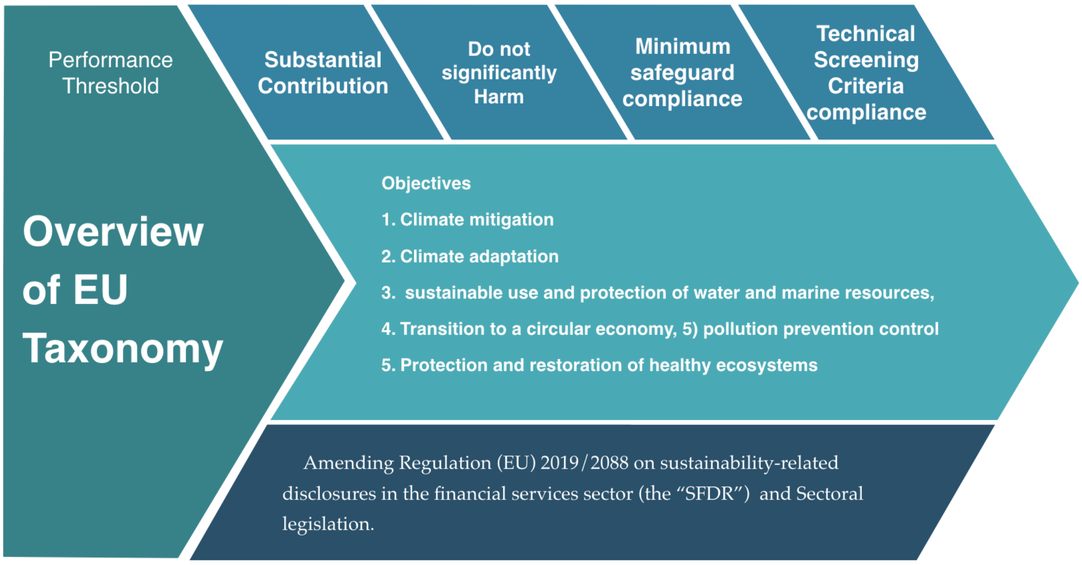
The key factors to take into consideration in developing a taxonomy are provided in the diagram below.



4.1 European Union Regulatory Framework

The EU taxonomy regulation is considered as the first step towards a common framework and a tool to help finance the transition to clear environmental goals. It forms a part of the **EU Green Deal** proposing two key financial reforms-the Sustainable Europe Investment Plan and the Renewed Strategy on Sustainable Finance-the **InvestEU**. The focus of the regulation is the environmental performance of an underlying economic activity based on four thresholds: **Substantial Contribution, Do Not Significantly Harm (DNSH Principle), Minimum Safeguard compliance and Technical Screening Criteria(TSC).**

Diagram : Overview of EU Taxonomy



Defining Green under EU taxonomy:

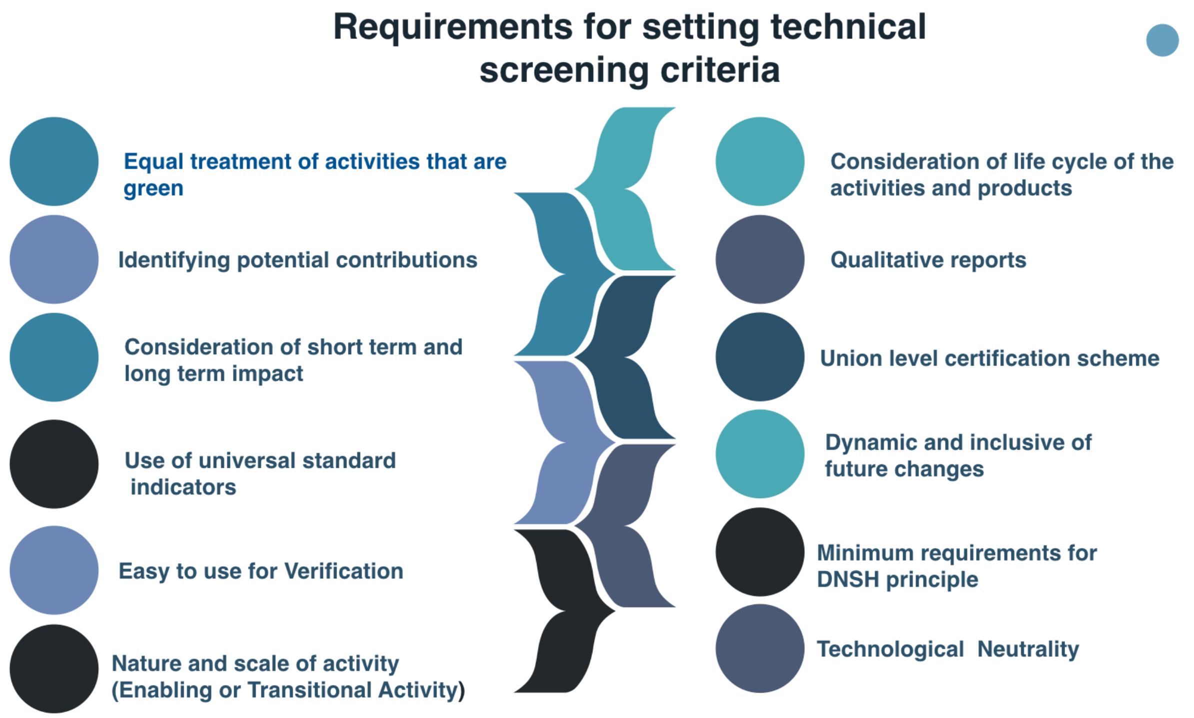
The regulation has taken a broader aspect of defining green in financing economic activities. It set out 6 objectives, namely; climate change mitigation, climate change adaptation, sustainable use and protection of water and marine resources, transition to circular economy, pollution prevention control, prevention and restoration of healthy ecosystems. Moreover, the social and governance aspects of ESG are included by recognizing international minimum human and labour rights and standards to be complied with minimum safeguards as a condition to qualify as sustainable economic activities under the taxonomy. Therefore, under the regulation, economic activities should only qualify as environmentally sustainable where they are carried out in alignment with the OECD Guidelines for Multinational Enterprises and UN Guiding Principles on Business and Human Rights, including the declaration on Fundamental Principles and Rights at Work of the International Labour Organisation (ILO), the eight fundamental conventions of the ILO and the International Bill of Human Rights, which revolves around EU's 6 objectives.[23]

At the moment, it identifies environmentally sustainable economic activities based on **Technical Screening Criteria** set out in the Commission's delegated acts developed under this regulation. The first delegated act concerning the technical screening criteria for economic activities with a significant contribution to climate change mitigation and adaptation (Climate Delegated Act) was adopted on 4 June 2021. The technical screening criteria for the remaining four environmental objectives (Environmental Delegated Act) will be developed and adopted later by 2022.[24]

In addition to the performance threshold, the activities are also classified into **Enabling activity** and **Transition activity**. Enabling activity directly enables the other sectors to contribute substantially to the environmental objectives, whereas Transition activity are the ones for which there is no technologically and economically feasible low-carbon alternative to be qualified as contributing substantially to climate change mitigation where they support the transition to a climate-neutral economy consistent with a pathway to limit temperature increase. These activities are recognized under Article 16 and Article 10 (2) of the regulation.

Overall, to define green, screening criteria have been adopted by the EU which specifies key performance indicators for sectors and their activities respectively under Technical Screening Criteria.

Diagram : The baseline for setting a TSC for activities.



Disclosure Requirements under EU framework

The disclosure requirement covers three groups under its umbrella, namely; financial market participants (FMPs) regulated by S**ustainable Finance Disclosure Regulation (SFDR)**, organisations who are required to provide non-financial statements under the **Non Financial Reporting Directive ("NFRD")** of the EU and the EU and Member States. When setting public measures, standards or labels for green financial products or green (corporate) bonds under Article 8 of the EU taxonomy, financial and non-financial companies are obligated to include a description of how, and to what extent, their activities are associated with taxonomy-aligned activities.

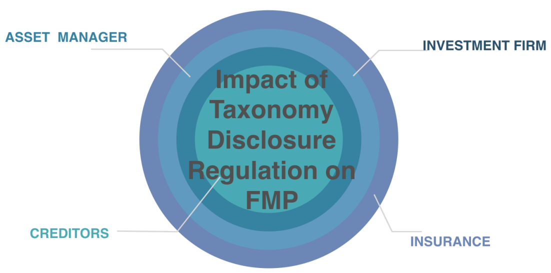
1. Non-financial companies ,the disclosure requirement(The disclosure applies to some financial company as well) :

   A. Proportion of turnover aligned with the taxonomy; and
   B. Capital expenditure (CapEx) and, if relevant, operational expenditure (OpEx)aligned with the taxonomy.

The disclosure is a minimum baseline for the companies to align with EU taxonomy .Companies mandated to disclose against the taxonomy are also required to comply with the NFDR. The NFRD at present applies to large public-interest companies with more than 500 employees, including listed companies, banks and insurance companies.[25] **The Commission is currently carrying out a wider review of the NFRD and one of the issues being considered is whether the NFRD should be extended to cover other types of companies for which the Corporate Sustainability Reporting Directive is proposed in April 2021.**

Additionally, the NFDR adopted a 'double materiality perspective,' which requires businesses to report on both the impact of sustainability challenges on their business and their own impact on people and the environment.[26]

2. Financial market participants ,the disclosure requirement :



SFDR has been amended to align with the taxonomy. FMPs and financial market advisors are required to make a number of sustainability-related disclosures, at both an "**entity level**" and a "**product level**" and "**service level**" in the new disclosure requirement. The Delegated Act sets out common thresholds for the disclosures of non-financial and financial undertakings concerning the location of disclosures, comparative information and the currency for calculating the KPIs. For each relevant product, the financial market participant will be required to state[27]:

1. How and to what extent taxonomy is used in determining the sustainability of the underlying investments.
2. Contribution towards the objective.
3. Proportion of underlying investments that are taxonomy-aligned.

Specific disclosure requirements are laid down for:Asset managers, Investment firms, Creditors and Insurance under the supplemented delegated Act in alignment with SFDR.

It is noted that the regulations require the disclosure to be at a granular level . For example : Creditors are obligated to disclose[28] :

1. The proportion of exposures related to taxonomy-aligned activities compared to the total assets (Green Asset Ratio), which should include lending , investment , loans, advances, debt securities, and equity holdings.
2. Fee and commission derived from commercial services and activities aligned with taxonomy.
3. Proportion taxonomy aligned activities in underlying assets.
4. A separate report shows total assets, trading book, trends and the limits of environmental risks.

The Green bond market

The European Union in July 2021 proposed the European green bond standard (EUGBS). The draft standards are voluntary in nature and are intended to assist the green bond market in expanding and raising its green bond market. For example, the standard aims to require that issuers must allocate **100%** of the funds (proceeds) raised by their bonds to economic activities that meet the taxonomy requirements by the time the bond matures. Extract from the proposed standard is presented below. [29]

Article 4
Use of the proceeds of European green bonds

1. Before maturity of the bond, the proceeds of European green bonds shall be exclusively and fully allocated, without deducting costs, to the following, or a combination thereof:

   (a) fixed assets, including those of households, that are not financial assets;

   (b) capital expenditures, including those of households;

   (c) operating expenditures that were incurred more recently than three years prior to the issuance of the European green bond;

   (d) financial assets as referred to in Article 5.

The suggested framework has four important requirements: [30]

1. **Taxonomy-alignment:**The bond's proceeds should be used exclusively for EU taxonomy-aligned initiatives.
2. **Transparency:** Transparency in the allocation of bond proceeds through detailed reporting.
3. **External examination:**External review of all European green bonds to guarantee regulation compliance and taxonomy alignment of supported projects.
4. **Reviewer supervision by the European Securities Markets Authority (ESMA):** External reviewers of European green bonds must be registered and monitored by ESMA. This will ensure the quality of their services and reviews, protecting investors and maintaining market integrity.

Key Takeaways:

The European Union is striving to improve transparency and unify its regulatory structure, with the goal of aligning all of its regulations around taxonomy.

1. The EU has ensured that the taxonomy criteria review and design is a dynamic, flexible, and inclusive process.

2. The regulation places emphasis on the assessment of economic activity through **technical criteria** to be developed and adapted regularly to the fast changing nature of science and technology.

3. The EU aims to develop **Digital Taxonomy** tools to enable integration of taxonomy criteria and performance data into industry data systems and reporting by using advanced technology.

4. The taxonomy puts greater emphasis on **Enabling Activities**.

5. Greater emphasis on **Life-Cycle considerations** throughout the technical framework

6. The Green Bond standards are voluntary in nature. However, they are aligned with the taxonomy.

7. The Taxonomy Regulation does not explicitly require any formal verification of taxonomy-related disclosures. The disclosures must be made as part of the non-financial statement under NFRD, which does not, as a baseline, require verification.But it does encourage voluntary good practice for external verification as laid down in the Taskforce on Climate-Related Financial Disclosures (TCFD) framework.

8. The status of small and medium industries is vague.

9. Proposed to add **Nuclear Energy** as green in the taxonomy.

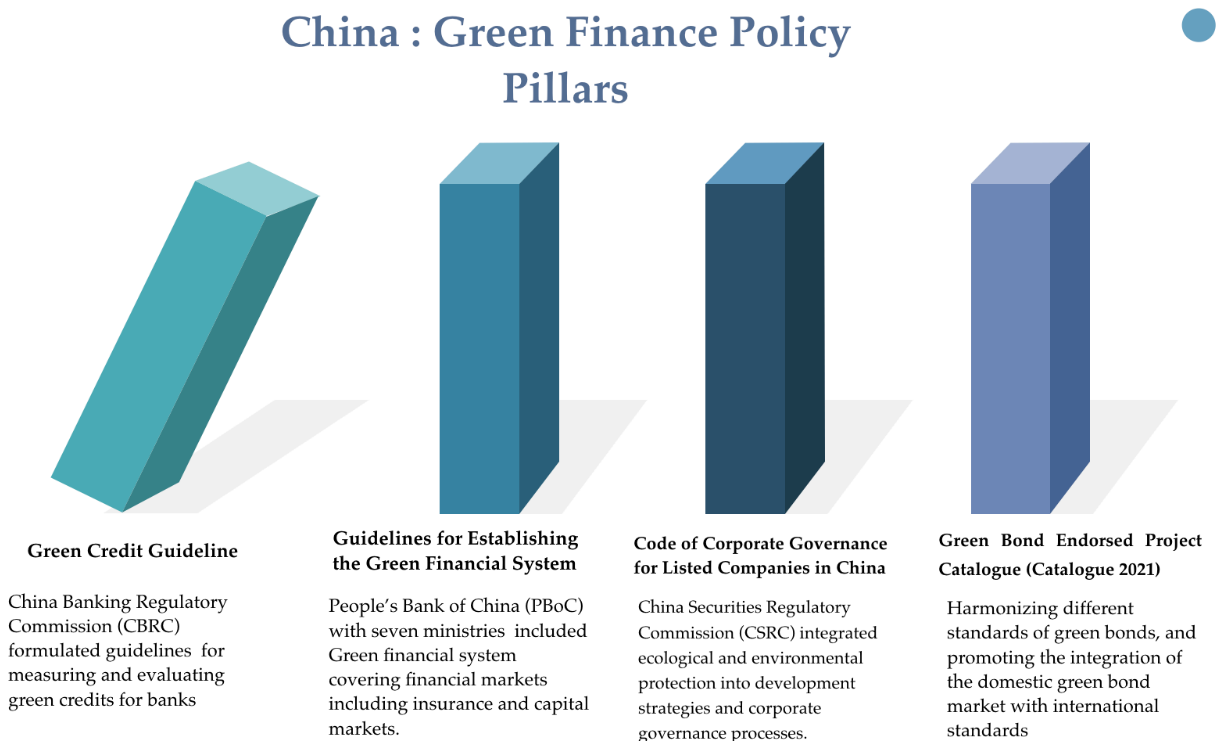
Next : Green Finance : Regulatory framework of China

4.2 *Regulatory Framework of China*

Since 2015, China has been working on a strategic model for green finance, which has mostly been a patchwork. However, starting in 2021, the country is attempting to consolidate its framework for green finance. The regulatory administration of the Chinese government, as well as the stock exchanges, have played an important role in fostering the growth of green finance in the country. One of the most significant recent developments in China has been the revisions to the **Green Bond Endorsed Project Catalogue (Catalogue 2021)**, which has received widespread support. The latter includes the following principles:

1. Aligning the existing regulatory framework
2. Screening green activities with significant positive environmental impacts
3. Continuously improving the internationalization level of the catalogue.

Diagram: Showing 4 core regulation of china's green policy



As the nation is adopting a harmonized approach, attention should also be shifted to the regional framework trend. In 2019, more than 500 green finance policies were announced at the national level, including over 300 specific administrative actions to encourage green funding development in jurisdictions by the provincial and sub-provincial governments. These local strategies focused mostly on green bonds. This has famously come to be known as **Pilot financing Zones**, a distinct feature of China. However, such market segmentation by different authorities and regulatory frameworks impacts the efficiency of the market as it can create unnecessary burdens on issuers and decrease transparency. It will be interesting to see to what extent the Catalogue 2021 will be able to harmonise framework on the ground.

Defining Green under China's new Catalogue 2021:

"Green bonds refer to marketable securities that use raised funds specifically to support green industries, green projects, or green economic activities that meet specified conditions, and are issued in accordance with legal procedures and repay principal and interest according to agreements, including but not limited to green financial bonds, green corporate bonds, green enterprise bonds, green debt financing tools and green asset-backed securities."

The definition under the catalogue encompasses:

1. Scientific and precise definition of green projects.
2. The Principle of Do Not Significantly Harm.
3. The use of coal and other fossil fuels is no longer labeled as green.
4. Promotes domestic green bond development.

Further, the green activities under the catalogue is classified into 4 (four) levels[31] :

1. In Level-I category 6 core objectives are set out namely; **Energy saving and environmental protection industry, Pollution prevention and treatment, Clean energy, Ecology and environment, green upgrade of infrastructure and green services.**
2. Level-II and Level-III Categories tend to align with those of the world's mainstream taxonomy of green assets. To help domestic and overseas entities better identify, inquire, and invest in green assets.
3. The Level-IV Category identifies national key projects regionally on the transition to green and low-carbon development.

Extract from the Catalogue (Showing 4 tier classification) [32]

1.4 Water Saving and Non-conventional Water Resources	1.4.1 Non-conventional Water Resources	1.4.1.1 Sea Water and Brackish Water Desalination	Construction and operation of seawater and brackish water desalination facilities.
		1.4.1.2 Rain Water Collection, Treatment and Utilization	Construction and operation of rainwater collection, treatment and utilization facilities.

Disclosure requirements under China's Regulatory Framework

The developing green finance market and the growth of the green economy are of major strategic significance for China. China was the first nation to develop green finance policies in the world-**Guidelines for Establishing China's Green Financial System** was the first framework which required gradual establishment of an information disclosure system. The Guidelines call for policies and actions in seven areas:

1. Green bonds
2. Green lending
3. Green development funds
4. Green insurance
5. Markets for pollution control rights
6. Local government initiatives
7. International cooperation.

In accordance with this, the country's financial regulators: the People's Bank of China (PBoC), the National Development and Reform Commission (NDRC), the China Securities Regulatory Commission (CSRC), and the National Association of Financial Market Institutional Investors (NAFMII) began developing green finance standards and introduced a series of regulations and guidelines. Key regulations such as:

1. The Green Bond Endorsed Project Catalogue 2015 by PBoC.
2. The Green Corporate Bond Endorsed Project Catalogue by NDRC.
3. The Green Industry Guiding Catalogue was issued in 2019 by seven ministries and commissions, including the NDRC and the PBoC.

These green finance standards laid the foundation for climate and environmental information disclosure, however, in fragments. Therefore, recently in 2021, in order to converge with the international standards and to align the domestic regulatory framework around the financial market, the PBoC, NDRC, and the CSRC jointly issued in December 2020 the Measures for the **Administration of Information Disclosure of Corporate Bonds (the Administrative Measures for Information Disclosure)** in accordance with the Securities Law and other laws and regulations. Previously, green financial bonds, green corporate bonds, and green debt financing instruments were guided by the 2015 edition of the Catalogue, while corporate bonds used NDRC guidance. Issuers and intermediaries don't have to benchmark against two standards anymore. Any bond can now be recognised as green if it meets the criteria of the **Catalogue 2021**, no matter in which markets it is issued or what type of bond it is.

Moreover, in order to enhance the **coordinated regulation of information disclosure** in the bond market,Stock exchanges in China have amended and revised rules and regulations concerning information disclosure. For instance, the Shanghai Stock Exchange has issued guidelines on continuous information which clarifies and elaborates on the existing requirements for ad hoc information disclosure.. [33]

A shift from voluntary measures to mandatory measures is quite visible in recent revisions of the regulatory frameworks in china

Overview of key regulatory framework :

Environment Law	Financial Regulatory Policies	Stock Exchange
1. **The Environmental law** sets out mandatory requirements with respect to discourse for companies generating over-discharge of pollutants to publicly disclose environmental information. It also establishes five categories of key pollutant discharging units: water, atmosphere, soil, acoustic environment and other key pollutant discharging units.	1. **PCoB Guidelines for Establishing the Green Financial System.** The guidelines stress the need for a mandatory system for disclosing environmental information by listed companies to be established. The focus is on the development of green insurance and trading of environmental rights, as well as the drafting of laws and regulations for introducing a mandatory pollution liability insurance system. 2. **The CSRC's Code of Corporate Governance for Listed Companies in China** sets out the responsibility of listed companies to focus on corporate social responsibility. The code establishes under (Article 3) that listed companies should deliver on the vision of innovative, coordinated, green, and open development for all, promote entrepreneurship, fulfill social responsibilities, and develop good corporate governance practices. 3. CSRC has also developed **Standards for the Content and Formats of Information Disclosure** of Companies prescribing the format for interim and annual reporting 4. CSRC's **Administrative Measures for Information Disclosure of Listed Company (Revised 2021)**-These measures are formulated in accordance with the *Company Law,* the *Securities Law* and other relevant laws and administrative regulations for the purpose of regulating the process of information disclosure by the issuers, listed companies and other obligors responsible for information disclosure. Thus, strengthening the administration of information disclosure and protecting the legitimate rights and interests of investors	**The Shenzhen Stock Exchange** 1. Guidelines on Listed Companies sets out standards to assess performance of corporate social responsibilities on a regular basis and voluntarily disclose corporate social responsibility reports. 2. The guidelines on Standard Operating of Listed Companies provides further guidance and standards for listed companies to disclose information on social responsibilities 3. Measures for Evaluation of Information Disclosure by Listed Companies (Revised in 2020) (the "Measures"). 4. The Business Guidelines for Innovative Corporate Bonds No - Green Corporate Bonds (Revision 2021) lays down requirements for carbon neutrality bonds and blue bonds. The Shanghai Stock Exchange 1. The Guidelines for the Preparation of the Report on Performance of Corporate Social Responsibility, which points out that listed companies shall disclose their work on facilitating environmental and ecological sustainability. 2. Guidelines for Continual Information Disclosure

Disclosure Framework under Pilot Financing Zones :

Historically, pilot programmes have allowed for the testing of standards that could later be incorporated into national policy. The State Council of China launched the programme to encourage regions to develop and execute local green finance policies and models based on their particular resources and economic features. Thus, generating green bonds based on the region's sectoral focus. Guangdong, Guizhou, Jiangxi, Zhejiang, and Xinjiang Gansu province are five famous pilot financing zones.

Financial markets can be controlled under these pilot zones in accordance with internationally recognised best practices, such as the Green Bond Principle, responsible investment standards, or the TFCD Disclosure. Additionally, **a zone-specific database** is built to aid in the facilitation of investments in green projects. For example, the China Public Private Partnerships Center has built a green PPP project library to house green projects, green project specialists, and associated project reports. The China Public Private Partnerships Centre database categorises green initiatives in a larger and more precise manner.It showcases approximately 10,000 projects across 19 areas, including affordable housing, urban integrated development, agriculture, forestry, transportation, and energy.

The pilot zones' primary responsibilities include expanding the role of green finance in domestic financial institutions, promoting green credit, green insurance, and green bonds, investigating the establishment of markets for environmental rights, bolstering government policy support, and developing green finance risk management mechanisms. It is anticipated that the ideas, regulations, and practices evaluated in the zones will be replicated nationally, thus unifying green finance standards and enhancing green finance's commercial viability.

Huzhou, Zhejiang, is one of the successful pilot zones. It has developed a pioneering green finance ecosystem, constructing a statistical system for green finance, an IT-based green financing platform, and a green finance evaluation standards and rating system applicable to green companies, projects, banks, and services. The zone has adopted international best practices in its framework, like Equator Principles for financial institutions[34]

This is an excellent illustration of how a combination of regional policies and international best practices can be adopted to expand the green financing sector.

Key Takeaways:

The new catalogue 2020 is expected to unify the regulatory framework domestically and internationally in the coming years.

1. Clean coal is finally excluded from the green definition.
2. Small and medium enterprises are included under the disclosure framework.
3. The concept of Pilot Financing Zones is proving to be an excellent tool to develop a green finance ecosystem based on trial and test practices. It is just like a sandbox.
4. China's 2060 carbon neutrality target will deepen climate-related financial disclosure by financial institutions.
5. Collaboration initiatives like the China-UK TCFD pilot programme will play a crucial role in harmonising international regulatory standards.
6. The regulations promotes higher requirements for the third-party assessment and certification of green bonds
7. Nuclear energy is included in the taxonomy as clean energy.
8. The establishment of mandatory rules has grown in China.

Next : Green Finance Regulatory Framework of Kazakhstan

4.3 Green Finance : Regulatory framework of Kazakhstan

Over the past decade, Kazakhstan has made strong policy strides and responsibly absorbed large natural resource–based earnings by implementing a rules-driven fiscal framework.However, diversification remains a challenge for a country with the ninth-largest oil reserves in the world, as hydrocarbon output constituted 21 percent of GDP and about 70 percent of exports in 2020.[35]

Furthermore, with the recent pandemic, the year 2020 has been a challenging one for the nation. The pandemic has severely hit many sectors, like transport, retail, wholesale, and hospitality, which account for 30% of employment. While the country is projected to recover its economy, there are factors that will impact its path to recovery, such as increasing poverty, weaker global demand for fossil fuels, higher regional competition to attract investments, and higher risks of instability in the financial sector, and most importantly, climate change.

Notwithstanding the above, the nation is positioned strategically in the world as a trade corridor connecting east and west through China's Belt and Road initiative. With the country's wide institutional and economic reforms in progress, the nation has great potential to build a diversified and competitive economy. However, growth cannot happen in a vacuum. Growth will either negatively or positively impact the environment. Considering that climate risk has become a centre of all socio-economic growth, Kazakhstan's reforms and strategies more than ever need to be formulated into a stronger and greener economic ecosystem.

Kazakhstan has achieved significant early headway toward these goals, integrating green economic objectives into national strategic development plans and initiatives. Domestic progressive legislation has been enacted, including renewable energy and energy saving and efficiency legislation (2012) , as well as the establishment of a carbon trading system, "Kazakh ETS" (2013). These efforts are bolstered by ambitious low-carbon and sustainability targets and guided by Kazakhstan's Concept on Transition to a Green Economy.

Green Progress at glance :

In 2012, Kazakhstan launched the Green Bridge Program concept globally.

In 2013, the country developed one of the world's first strategy-**Concepts for the transition to a green economy by 2050** and the Council for the transition to a green economy under the President of the Republic of Kazakhstan.

In 2015, the Paris Climate Agreement was signed and ratified, and national contributions to reduce greenhouse gas emissions were approved. Adoption of Sustainable Development goals 2030

In 2017, the international exhibition EXPO-2017 themed "Energy of the Future" was successfully held with the participation of representatives from over 100 countries. **Astana International Exchange (AIX) was established as part of the Astana International Financial Centre, AIFC.**

In 2019, the Ministry of Ecology, Geology and Natural Resources was established.

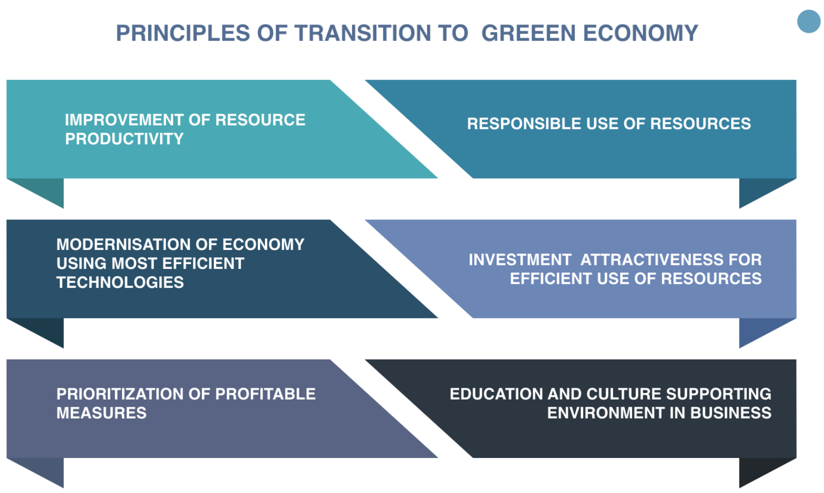
In 2020, the first Green Bond was issued.

In 2021, adopted the National Development Plan through 2025 (Revised), and the National Environmental law was revised.

Green Economy Transition Strategy 2050

The Concept for Transition to a Green Economy until 2050, complemented by the National Development Strategy Kazakhstan 2025, has set targets and goals for the Kazakhstan economy until 2050. The strategic program documents have set ambitious targets in the following core areas: Power sector, Energy efficiency , Water Management, Agriculture and Waste Management.

Diagram : Principles of transition to Green Economy



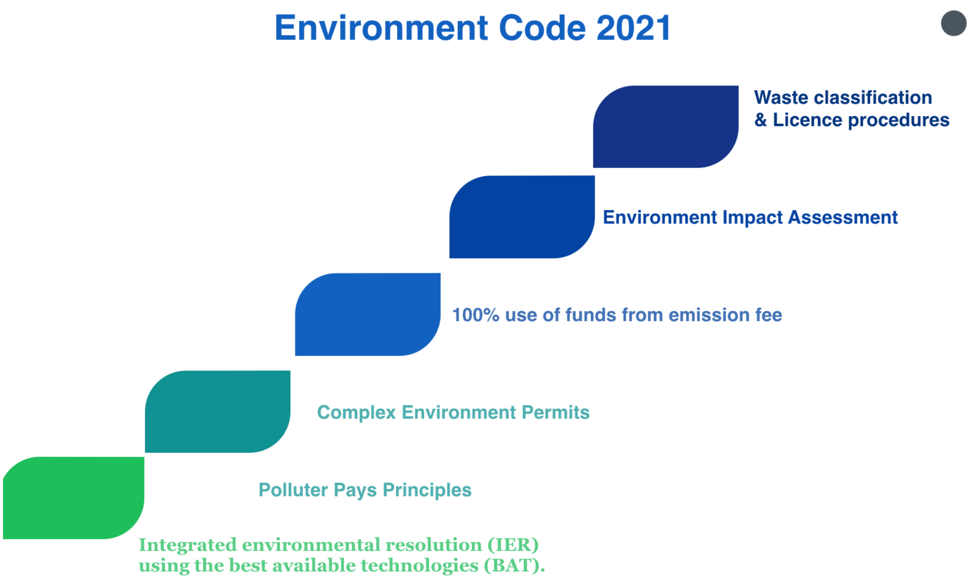
Further, the National Development Strategy 2025 includes seven major reforms: human capital, technological modernisation and digitalisation, business competitiveness, rule of law, strong regions, urbanisation, modernisation of public consciousness and public sector efficiency.[36] In addition it has also established a new economic growth model to foster the implementation of Strategy 2050 .

Kazakhstan Disclosure Framework

The National Bank of Kazakhstan (NBK) is the main state body responsible for regulation of the financial sector. The NBK is responsible for the regulation and supervision of banks, insurers, pension funds, investment funds, credit bureaus, and securities markets. The securities market legislation of the Republic of Kazakhstan is based on the **Constitution of the Republic of Kazakhstan** and consists of the Civil Code of the Republic of Kazakhstan and other regulatory legal acts of the Republic of Kazakhstan.

The recent development t**he Environmental Code of the Republic of Kazakhstan** (**No 400-VI 3PK**) has for the first time defined Green economic activities;

The new Environmental Code defines "green finance" as investments aimed at the implementation of "green" projects through such instruments as "green" bonds and "green" loans. A green project should be, among other things, directed to increase efficiency for use of natural resources, decrease the negative impact to the environment, energy efficiency, and saving.



The new code provides for new regulatory novelties in line with International conventions and legislation of OECD/EU countries. The code set out the fundamental principles of environment regulation[37] :

1. Sustainable development
2. Principle of presumption of environment Hazard
3. Mandatory Impact assessment
4. Polluter pays and fix principles
5. Ecosystem Approach
6. Prevention Principles
7. Public involvement and participation
8. Best Available technology (BAT)
9. Harmonization of legislation;
10. Environment safety

The code has established parameters for environmental quality based on indicators such as chemical, physical, and biological indicators, and proposes to establish specific indicators as thresholds for each type of natural resource. And with respect to climate mitigation, ETS standards are set out, especially the following:

1. technical specific emission standards;
2. standards of maximum permissible emissions and pollutant discharge;
3. standards of industrial and consumption waste placement; and
4. standards of permissible physical impacts

Technical specific emission standards are proposed to be established by Technical Regulation, which is expected to be amended accordingly. In addition to this, environment labelling and mandatory Environment Impact Assessment for all types of economic and other activities that may have a direct or indirect impact on the environment and public health.

With the adoption of the Code, amendments have been introduced to several other laws and codes, including the Entrepreneurial Code, Tax Code, the Code of Administrative Offence, Criminal Code, Forestry Code, Water Code, Land Code, Law on permits and notifications, Law on civil protection, Law on public administration, and the Law on mandatory environmental insurance as well. Changes in the regulation of the financial market are expected. **It is quite obvious the Environmental code will be the foundational regulatory document governing changes at the national level and state level.**

By 2023, it is planned to develop the industry-specific BAT Guide, which will be based on a comprehensive technology audit. Subsequently, in accordance with the guide, from 2024 to 2025, it is scheduled to issue integrated environmental permits.

AIFC - Astana International Financial Centre

"Astana International Financial Centre is a new page in the history of independent Kazakhstan. Its launch is a very significant step towards sustainable development of the economy"

- N.Nazarbayev

AIFC was established in 2015. It is a special legal child of the constitution of Kazakhstan, a unique platform creating a meeting place for capital and projects in the country. It is an area located in the city of Nur-Sultan with its own distinct legal regime based on the principles of common law and international best practices. The financial center has drawn inspiration from existing international financial centers around the world, especially DIFC (Dubai International Financial Centre), Abu Dhabi Financial Centre and Australia. The AIFC establishment is aligned with Kazakhstan's Strategy 2050 for the transition to a green economy and the goal of becoming one of the 30 most developed countries in the world by 2050. AIFC has its own regulatory bodies: AIFC Management Council, AIFC Governor, AIFC Authority, Astana Financial Service Authority, AIFC Court, and International Arbitration Centre.

AIFC has the power to adopt acts that regulate civil relationships, civil procedural financial relationships, and administrative procedures. The matters not governed by the AIFC and the AIFC acts are subject to the regulation of Kazakhstan's national legislation such as criminal law, environmental law and others.

OBJECTIVES OF AIFC

01 Attracting Investment

02 Developing Security Market and Integration with International Capital Market

03 Developing Insurance market,Banking Services , Islamic Finance, Financial Technology, Electronic Commerce and Innovative Projects

04 Developing Financial and Professional Services

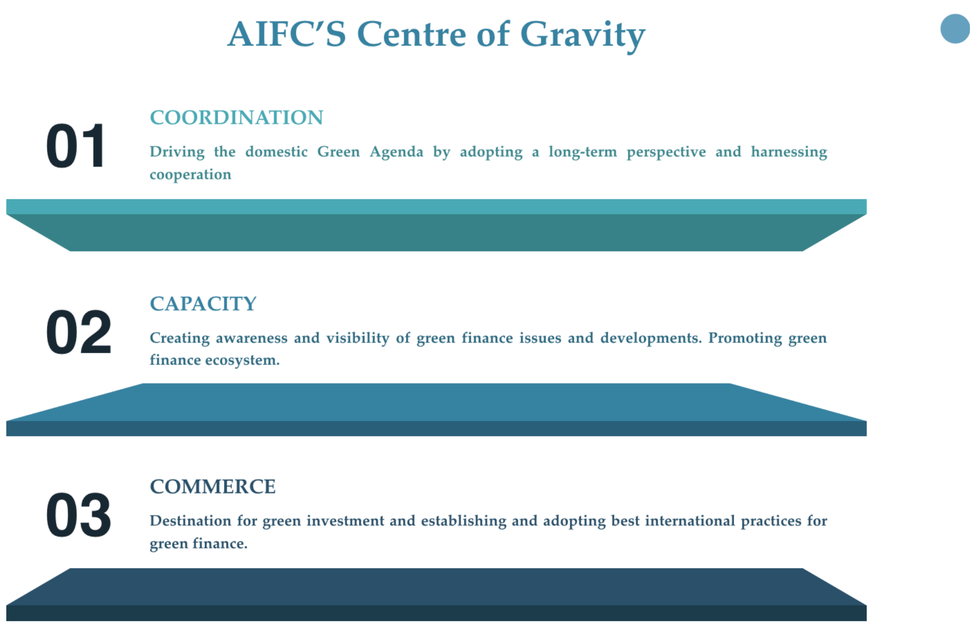
05 International Recognition

ROLE OF AIFC : Green Finance

In order to promote the green finance ecosystem in Kazakhstan, AIFC has been working since its inception. AIFC, with collaboration with the European Bank for Reconstruction and Development (EBRD), adopted the **Concept of a Green Financial System for Kazakhstan, the AIFC implementation strategy**, and a set of rules for issuing green bonds on the **Astana International Exchange (AIX).**

1. **The Concept of a Green Financial System:** The document lays down strategically the road map for the transition to green finance where key drivers of supply and demand are identified, along with enabling mechanisms. The challenges are addressed and recommendations to reform the green landscape of Kazakhstan have been elaborated. Essentially, it establishes the role AIFC will play in the transition to a green economy.A critical factor in Kazakhstan's Green Financial System's success will be a robust market-policy dynamic in which regulations support green finance in areas with active domestic demand. By functioning as a fulcrum between evolving policies, green financial solutions, and local market activity, AIFC contributes significantly to this dynamic. This central, coordinating function thus plays a vital role in supporting green finance demand by acting as a hub of political power, driving the green finance agenda, mobilizing resources when necessary, and crowding in private sector investment.

Diagram : Showing functions of AIFC



2.**The strategy of ensuring regional leadership of AIFC in the sphere of green finance until the year 2025. (AIFC implementation strategy)**: The functioning of the AIFC is based on a long-term capacity building strategy for Kazakhstan and the Central Asian region, using innovative approaches and the best world practices for the transition to a green economy. For this purpose, the AIFC's strategy is laid out in four directions, namely: establishing and developing a green finance hub, the market for green finance instruments, developing competencies and image improvement. For each of these directions, goals, objectives, activities, and key indicators of progress are laid out in this green strategy document.

In accordance with the above 2 AIFC documents and, of course, Kazakhstan's strategy 2050, t**he Green Finance Centre was established in 2018,** a regional think-tank, providing strategic and business consulting in green finance and sustainable development to governments, quasi-state organisations, and entrepreneurs.[38]

3. AIX : AIFC Exchange (Astana International Exchange)

The AIX has adopted international best standards to regulate the Green bond market.

A "Green Bond" is defined by the AIX Green Bond Rules as any type of bond instrument where the proceeds will be exclusively applied to finance or refinance in part or in full new and/or existing eligible green projects with environmentally sustainable benefits and which are aligned with the Green Bond Principles and/or Climate Bonds Taxonomy of the Climate Bonds Standard of the Climate Bonds Initiative[39].

The first green bonds were issued in August 2020 on the AIX. The Damu Fund, together with the United Nations Development Program, has placed a security in the amount of 200 million Kazakhstan tenges (approximately $467,000) on the AIX. It is expected that these funds will be directed to small-scale renewable projects in Kazakhstan.

AIX has its own **Market listing Rules** (AIX-MLR), **Market Disclosure Rules** (AIX-MDR) and **Green Bond Rules** (AIX-GRN) which provide for additional disclosure requirements for green bonds, use of proceeds, post issuance reporting and external review in line with any of the GBP and ICMA, SDG and ESG criteria. The participants are required to take an **enforceable undertaking** under the rules, thereby holding them legally bound under AIFC jurisdiction.

AIX-MAR provides under MLR 4 requirements for financial statements where it recognises international standards-IFRS, US GAAP and Swiss GAAP as accounting principles and the International Auditing and Assurance Standards Board (IAASB) for audits.Under AIX-GRN, currently green bonds are aligned with ICMA Green Bond Principles and the Climate Bonds Taxonomy of the Climate Bonds Standard of the Climate Bonds Initiative. With respect to the disclosure, it sets out mandatory requirements such as:

1. Use of Proceeds
2. Process for Project evaluation and Selection
3. Management of Proceeds
4. Reporting

AIFC's working group have developed draft taxonomy which is classified into 8 categories at the moment:

1. Renewable Energy
2. Energy efficiency
3. Green building
4. Pollution and prevention control
5. Sustainable water and waste
6. Sustainable Agriculture , Land ,Forestry , Biodiversity , Conservation and Eco-tourism
7. Clean transport
8. Low pollution energy (categorized as transitional activities)

The taxonomy's categories correspond to the Kazaksthan's Strategy 2050 objectives. The taxonomy's thresholds are consistent with the Environmental Code and the indicators established by Kazakhstan's Technical Regulation. References to international standards such as ISO and EU Eco-labeling are included, as is compliance with European standards for machinery and equipment (at least EURO V).

However, based on international development the following is recommended:

I	Taxonomy
	Recommendation I : Inclusion of Social Aspect The draft taxonomy has captured only environmental aspects, unlike the EU taxonomy, which includes social aspects as minimum standards.
	Recommendation II : Interoperability with other taxonomies The taxonomy's terminology should be used in conjunction with other taxonomies to assist domestic and international entities in identifying, inquiring, and investing more effectively.
	Recommendation III: Creating Mapping Option Create a mapping database for tracing the level of the contribution of the activities to the environmental objectives. Also, linking the activities with SDGs
II	Disclosure Requirement
	Recommendation VI: Developing guidelines for issuers on ESG reporting by AIX This includes encouraging participants to adopt international standards like GRI and TFCD in their reports which recognise double materiality principles and scenario analysis. Examples include Euronext and Nasdaq guidelines.
	Recommendation V: Aligning AIFC's disclosure framework with the taxonomy
	Recommendation VI: Aligning mainstream reporting to international best practices. This includes referring to the work of the Group of Five and the World Economic Forum on key metrics and systematic reporting on the inclusion of a core set of global nonfinancial measures in mainstream reports and in conjunction with financial data.
	Recommendation VII: Digital Platform Users increasingly want sustainability data that is reliable, audited, accessible, machine-readable, timely, and automatically updated. Having all the data in one location and/or in a machine-readable format would allow regulators, investors, rating agencies, and other stakeholders to focus on value-added analysis and interpretation. Recent developments: The European Financial Reporting Advisory Group (EFRAG) has proposed to digitalize reporting and the use of the XBRL platform (open international standard for digital business reporting) from the very outset, along similar lines to the European Single Electronic Format (ESEF) for ESG reporting. WEF in its report "block (chain)s for a better world" focused on the role of blockchain. It states:*Blockchain has the potential to transform both sustainability reporting and assurance, helping companies manage, demonstrate, and improve their performance, while enabling consumers and investors to make better-informed decisions. This could drive a new wave of accountability and action, as this information filters up to board-level managers and provides them with a more complete picture for managing risk and reward profiles.* *The International Accounting Standards Board (IASB) recently released a suggested comprehensive framework for management commentary. The new framework is intended to reflect changes and innovations in the environment of corporate reporting and to better meet the information needs of today's investors.* **XBRL is a good starting point.**

Key Takeaways :

1. International best standards are adopted by the AIFC. It is interesting to see that, despite the voluntary nature of these GBP or ICMA rules, they are made to some extent mandatory by adopting them into the legal framework of AIFC through enforceable undertakings.

2. Importantly, taking the example of China's Pilot Financing Zones Zhejiang, AIFC can create a **digital database** of green projects and a rating system by adopting the required elements of the Climate Bond Initiative taxonomy and EU taxonomy as a reference, to create a customized "AIFC Taxonomy" based on the regions' economic and sustainability requirements as a starting point.

3. For disclosure requirements, TFCD and GRI recommendations, along with recent collaborative work discussed in this report focused on common metrics and a single digital platform, should be taken into account. Importantly, the focus should be on how to implement international practice into the current framework and its timeframe.

4. Apart from the AIX exchange rules, AIFC's Corporate Governance plays an important role in promoting a long-term green finance ecosystem. Defining green finance in other key regulations is important.

5. Pilot financing zones can be created in other parts of Kazakhstan to diversify green projects.

6. Nuclear Energy is not included in the draft taxonomy at this point.

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