

SUMMARY NOTE

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Low Carbon Transition and Green & Sustainable Finance

Summary Note of Capacity Building
and Knowledge Sharing Workshop

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Executive Summary

At the halfway point to 2030, progress on many of the 17 Sustainable Development Goals (SDGs) has been slow, especially in the most recent years. This includes areas, such as SDG 13: Climate Action, which has not only slowed but regressed. The 2023 report by the Intergovernmental Panel on Climate Change (IPCC) stresses the urgent need for action to limit global warming and prevent its most severe impacts on people and livelihoods.¹

China has made significant efforts in developing a policy framework for low-carbon and “high-quality” development. The low-carbon transition is an opportunity for China to foster new sources of economic growth, innovation, and job creation by moving away from a fossil fuel-dependent growth model to fulfill its vision of high-quality development and advancing the SDGs. However, development challenges in advancing on the 2030 Agenda for Sustainable development as well as national priorities remain.

To further promote the whole-of-economy transition towards low-carbon and sustainable development in China and foster knowledge exchange and sharing, the United Nations Development Programme (UNDP) in China, the National Development and Reform Commission (NDRC) and China Development Bank’s Center for Belt and Road Innovation and Development co-organized a **joint capacity-building and knowledge sharing workshop on “Low Carbon Transition and Green & Sustainable Finance”.** Implementation support was provided by the International Cooperation Center (ICC) of NDRC, expert support by the World Resource Institute, and funding support by the Tanoto Foundation.

This note summarizes the key takeaways of the three-day programme. **Section 1** introduces opportunities and challenges for a just and inclusive low carbon transition. **Section 2** highlights the need for a comprehensive approach that reaps the benefits of the synergies across development priorities. For effective decision-making, it is critical to take into consideration the impact of policies in one area – energy transition, for example – on other areas, given the multiple inter-linkages and reinforcing feedback loops, ensuring alignment with the “do no significant harm” principle. **Section 3** focuses on the energy transition, as a key sector to delivering high-quality development and implementing the SDGs. **Section 4** touches upon the financing side of the low-carbon transition.

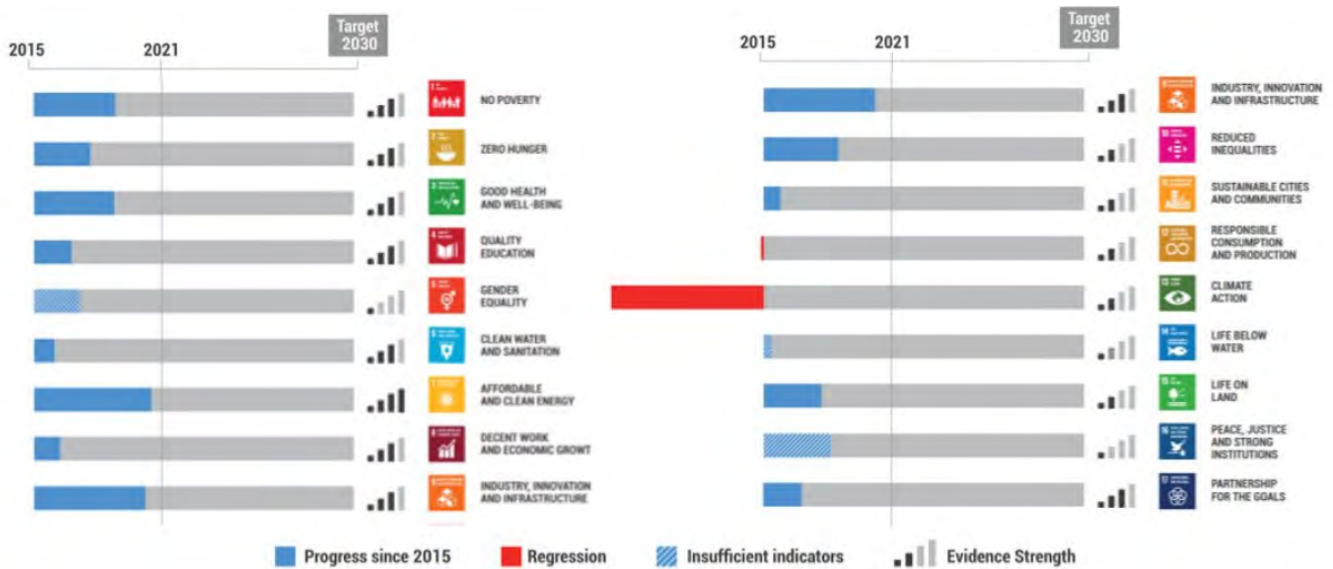
1. Introduction

Seven years have passed since the world came together and launched the 17 Sustainable Development Goals (SDGs) – the global goals aimed at ending poverty, protecting the planet, and ensuring peace and prosperity for all by 2030. Yet as we approach the halfway point towards achieving these goals, it is becoming increasingly clear that they are at risk of slipping out of reach. In the Asia Pacific region, for example, the estimated time to reach the 2030 targets has shifted from 2052 to 2065 since 2017.² Not only has progress slowed, but in certain critical areas, such as SDG 13: Climate Action, it has in fact regressed,³ as shown in Figure 1.

On the climate side, the IPCC report stresses the urgent need for action to limit global warming and prevent the most severe impacts on people and livelihoods.⁴ Following current trajectory, global temperatures are estimated to rise by 2.8°C by 2100.⁵ The negative knock-on effects on development progress is evidenced in the Planetary Pressures Adjusted Human Development Index introduced by UNDP in its 2020 edition of the Human Development Report.⁶ Incorporating the environmental impact of human activities results in a significant decline in the human development index globally. China, for example, has experienced a 15.6% loss in its HDI due to planetary pressures, surpassing the

average loss observed in high HDI countries (11.5%) and the East Asia and the Pacific region (12.3%).⁷ The World Bank also indicate that climate related negative effects could China between 0.5 to 2.3 percent of gross domestic product (GDP) by as early as 2030.⁸

Figure 1. Progress towards the SDGs in the Asia Pacific region



Source: Asia and the Pacific SDG progress report 2023, ESCAP, March 2023

Cognisant of these challenges, China has made significant efforts in developing a policy framework for low-carbon and “high-quality” development starting from the 11th five-year plan in 2006. Recently, renewed momentum has been driven by President Xi’s announcement of dual carbon goals, accompanied by the release of a comprehensive series of guidelines and action plans known as the “1+N policy system”, as well as several sectorial five-year plans. However, implementation challenges remain, heightened by recent obstacles, such as the COVID-19 pandemic, the war in Ukraine, and their socio-economic impacts and unique local challenges. China, for example, will require decoupling economic growth and emissions at a faster pace and at a lower income level than advanced economies.

The low-carbon transition is an opportunity for China to foster new sources of economic growth, innovation, and job creation by moving away from assets that are anticipated to be stranded within the next ten years, with the added benefit of lowering China’s reliance on imported fuels and enhancing its energy security. It has been estimated that companies could unlock USD 2.3 trillion in market opportunities by 2030 by integrating the SDGs in their business strategies.⁹

China’s carbon peaking and carbon neutrality goals: progress, challenges and selected priority areas as presented by select national experts

China's progress in achieving the dual carbon goals:

- **Policy development.** This includes the release of a suite of 60 policy documents labelled the “1+N” policy system”, which forms the bedrock of China’s low carbon transition policy architecture. In 2022, relevant

government departments formulated implementation plans to peak carbon emission in various sectors, as well as supporting policies for scientific and technological development, fiscal support, and statistical accounting. 31 provinces and cities have announced their local carbon-peaking implementation plans.

- **Energy transition and renewable energy sector development.** The average coal consumption for power generation dropped from 350 grams to 305 grams of standard coal per kWh from 2000 to 2021.¹⁰ The installed capacity of new wind and photovoltaic power has exceeded 100 million kilowatts for three consecutive years, with the installed capacity of renewable energy exceeding 1.2 billion kilowatts.¹¹ In 2022, the production and sales of new energy vehicles reached 7.1 million and 6.9 million respectively, ranking first in the world for eight consecutive years.¹²
- **Improvement in energy efficiency.** Between 2013 and 2022, China's energy consumption per unit of GDP fell by a cumulative 26.4%, equivalent to the reduction of the usage of 1.4 billion tons of standard coal. An annual average increase of 3% in energy consumption supported an annual average economic growth of 6.6% during this period.¹³
- **Reduction of carbon emission and expansion of carbon sinks.** Since 2012, China's carbon dioxide emissions per unit of GDP have cumulatively dropped by 30%. In 2021, China's forest area exceeded 220 million hectares, the forest coverage rate reached 24%, and the forest stock volume 194.9 billion cubic meters.¹⁴ The forest coverage rate and forest stock volume continued to grow, while soil erosion and desertification both declined.

Challenges faced by China in achieving the dual carbon goals:

- **High energy consumption and energy intensity.** Despite improvements, China's energy consumption per unit of GDP continues to be three times that of OECD countries, and 1.5 times the world average.¹⁵
- **Coal-dominated energy structure.** Despite continuous drop of coal's share in China's energy consumption, it still account for 56% of its primary energy consumption. To achieve the dual carbon goals, the proportion of China's non-fossil energy consumption needs to increase to around 25% by 2030, and to 80% or more by 2060.¹⁶
- **Multiple constraints for the renewable energy transition.** The capacity for future expansion in hydropower is limited. On the other hand, while wind, photovoltaic systems, and solar power have great potential, their intermittent and unstable nature poses challenges to the stable supply of energy and energy security. Currently, flexible power sources, such as pumped storage and gas power generation, comprise less than 6% of the total. These flexible sources, which play a crucial role in maintaining power grid stability, constitute a proportion far lower than the 25% to 30% observed in other countries.¹⁷
- **Technology and capacity gaps.** China needs further technological innovation to support green development and energy transition, particularly in technologies concerning hydrogen and energy storage. There is also a gap in the availability of specialised expertise in areas such as carbon emissions accounting, the research and development of net-zero technologies, and global climate governance.

Key areas of focus for achieving the dual carbon goals:

- **Prioritizing energy stability and security** to avoid energy shortages and drastic price increases.
- **Promoting the energy transition**, investing in distributed photovoltaics and wind power, and constructing a new power system supported by digital and intelligent grid systems; promoting the clean and efficient use of coal, safe development of nuclear power, advancing energy storage.
- **Coordinating the establishment of low-carbon transportation systems and infrastructure while improving the quality of green and low-carbon development in urban and rural construction**, preventing large-scale demolitions and construction, building green buildings, and promoting central heating charge by usage-based pricing model instead of square meter-based fixed price in the northern areas.
- **Developing the circular economy** by recycling and reusing waste steel, waste iron, and other materials to save 70% of raw materials and reduce energy consumption.
- **Consolidating and enhancing carbon capture capacity** and protecting and restoring forests, grasslands, and wetlands.
- **Accelerating green and low-carbon scientific and technological transformation.**
- **Improving the green and low-carbon policy system**, including through complementary fiscal and taxation, pricing, investment, and finance policies.

2. Breaking silos for a just low-carbon transition

2.1 Leveraging synergies and complementarities of priorities and policies towards a holistic approach

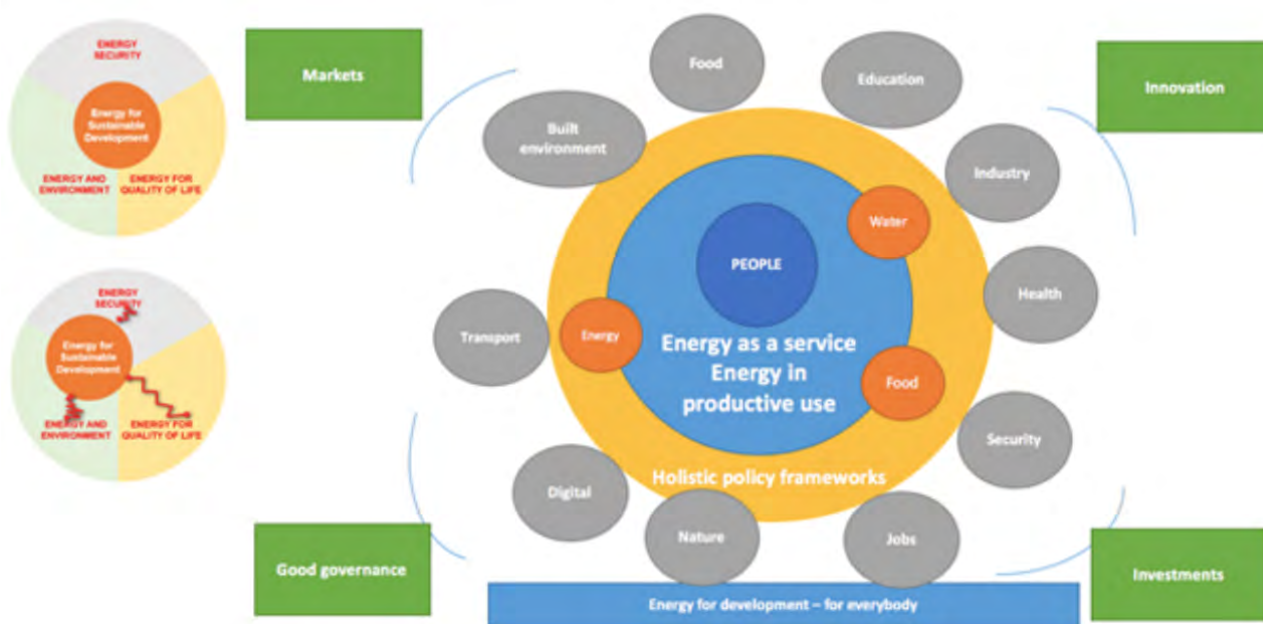
Policymakers face multiple interconnected challenges in advancing the SDGs, calling for a comprehensive approach to deliver “high-quality” development in China.

Taking the energy transition as an example, energy in China as elsewhere is not only a means in itself but a service that implies making choices that impact other stakeholders in society. A holistic policy framework that includes markets, innovation, investment, and governance is needed to include considerations on a vast range of decisions’ inputs and outputs, such as resources like water, food, and energy as well as a variety of sectors such as education, industry, health, security, jobs, nature, digital, transport and built environment.

Leveraging the synergies across policy options in the fight against climate change, the low-carbon transition, and the SDGs would ease the stress and costs of the transition while compensating for potential trade-offs. As Figure 3 shows, there are both complementarities and tensions between China’s climate and development goals. The achievement of the 2030-2060 dual carbon goals will require a multifaceted approach that combines accelerated structural transformation with moving resources, such as labour, capital, and land, from high-carbon to low-carbon activities.

Additionally, innovation and widespread adoption of new technologies will be necessary to enhance energy efficiency and resource productivity across all emitting sectors. Alongside these efforts, greater adaptation efforts will be needed to mitigate economic damages and protect the most vulnerable. These efforts also present new opportunities for greener and more resilient growth.

Figure 2. System change in a complex integrated dynamic environment



Source: UNDP Sustainable Energy Hub (2023).

Figure 3. An integrated climate and development framework for China 2030-2060 dual carbon goals



Source: World Bank Country Climate and Development Report, 2022

2.2 The importance of cities for a successful low-carbon transition

To successfully move from theory to practice, an urban lens to the energy transition should also be considered, as 70% of global emissions come from cities,¹⁸ while urbanization rates are expected to further increase. Lowering the emissions intensity of cities, as well as ensuring new urbanization that follows an inclusive low-carbon path, will be crucial for the transition to carbon neutrality. The first step of this journey includes SDG progress assessments and analytical tools to identify opportunities and gaps at the city level for informed policy-making. In China, UNDP has produced six such reports, one of which looks at 90 cities that account for around 70% of the country's GDP.¹⁹

Examples of actions around mitigation, adaptation, and resilience for the low-carbon transition in cities

Examples of actions around mitigation, adaptation, and resilience for the low-carbon transition in cities.

Successful examples of mitigation solutions include promoting:

- Distributed energy;
- Energy-efficient and low-carbon buildings and infrastructure;²⁰
- High-quality urban planning for liveable but relatively dense cities to limit human encroachment and high carbon emissions.²¹

Solutions that concern adaptation and resilience include:

- “Sponge city infrastructures”;
- Leveraging digital technologies and AI for monitoring;
- Expanding early warning systems and forecasting systems, as well as crisis management approaches.

2.3 Other factors behind an effective inclusive low-carbon transition

Finally, four elements were presented as critical for a successful and inclusive low-carbon transition that supports the SDGs and China's national priorities:

1. Ensuring a just and inclusive transition that leaves no one behind. One perspective that is usually lagging in the analysis is gender. For example, the coal industry is a male-dominated industry. However, evidence shows that female employees are more vulnerable and affected as the whole sector shrinks in employment size.²²

2. Mainstreaming biodiversity conservation and nature-positive solutions. Almost half the world's population directly depends on natural resources for their livelihoods.²³ Nature-based solutions²⁴ provide multiple benefits in terms of poverty alleviation through livelihood opportunities, carbon storage, and biodiversity conservation. It is one of the most effective approaches to climate adaptation by way of enhancing the adaptive capacity of the most vulnerable communities as well as the resilience of ecosystems and their services through the restoration of natural capital and biodiversity conservation, restoration, and/or regeneration measures.

3. Moving beyond CO₂ emissions addressing other greenhouse gases (GHG), such as methane. Globally, non-CO₂ greenhouse gases currently represent 24% of total net GHG emissions released by industrial use and fossil fuel combustion.²⁵ Methane emissions reduction, for instance, is crucial as it is more potent than CO₂ in warming the

atmosphere. A national strategy would be a key first step to strengthening China's pathway towards the Paris Agreement and its other environmental commitments. Other critical aspects to be considered include enhancing public awareness; improving data, monitoring, reporting, verification (MRV) systems, and standards around methane; strengthening the incentives system, including through carbon pricing, taxes, and financial support to industries low carbon transitions, with a particular focus on small and medium enterprises (SMEs); and enhancing international cooperation.

4. Strengthening and leveraging the potential of international cooperation, as climate change does not stop at borders. The 2016 Kigali Amendment of the Montreal Protocol is a textbook example of the benefits of multilateralism. Under the leadership of the United Nations, the Kigali Amendment has been now ratified by 148 countries,²⁶ aiming at reducing hydrofluorocarbon (HFC) emissions by 80% by 2047 or before for developed countries.²⁷

Strengthening modalities such as South-South and Trilateral Cooperation (SS/TC) is also critical. These are important initiatives for unlocking and mobilizing resources from a variety of sources and leveraging the comparative advantage of different actors based on their experiences and technological and financial capacities. China has an important role to play in this area in regions like Southeast Asia and Africa.²⁸ Examples are the UNDP-China-Ethiopia or UNDP-China-Sri Lanka trilateral cooperation projects in renewable energies.

China's overseas engagements in support of green development in partner countries as presented by national expert

To support China's efforts in this area, Chinese scholars have developed a green development index²⁹. This index provides an overall assessment of China's progress in greening its overseas engagements in six areas between 2013 and 2017. The six areas include: green trade, green production capacity cooperation, green industrial park construction, environmental protection cooperation, green infrastructure construction, and public perception around the green BRI. The index is based on 24 indicators such as the percentage of resource-intensive and heavy-polluting projects, the proportion of green investments, and the annual installed capacity of fossil fuels overseas.

China has also issued approximately 10 documents to promote the greening of the Belt and Road Initiative, with the most recent guideline released in March 2022.³⁰

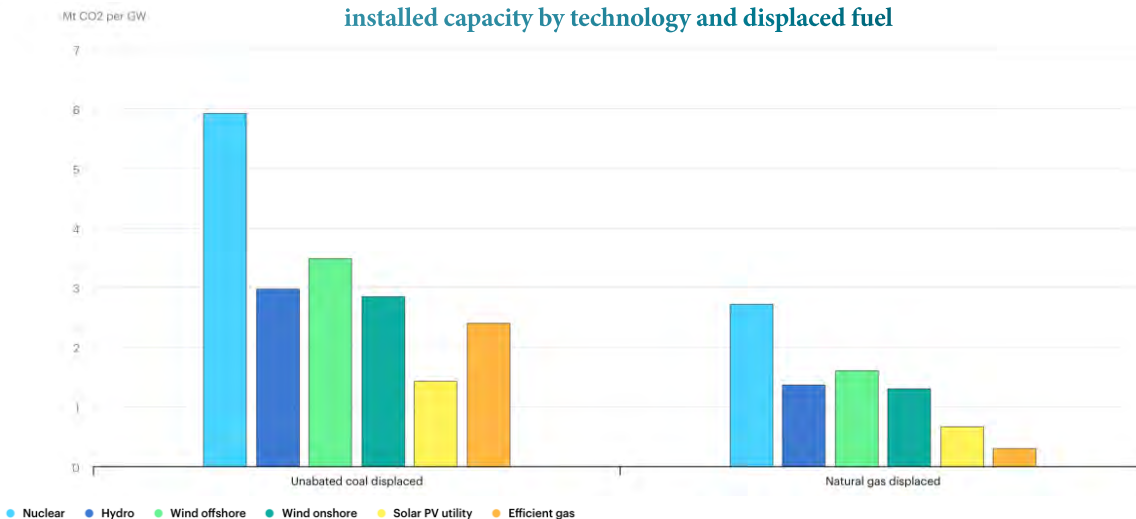
Taking a selection of BRI countries as a sample, another study categorizes countries and regions based on a review of their environmental regulations and ecological risk assessments, which serves as the basis for identifying priority countries and regions for accelerating China's green cooperation.³¹ Targeted recommendations are also proposed for different regions and countries, taking into account their specific circumstances and requirements. These include mitigating ecological risks in major investment projects, optimizing the geographic distribution of green production capacity cooperation, aligning with international green and sustainability standards, and enhancing regional cooperation in environmental protection.

3. Towards the low-carbon transition: The energy transition

Pathways and trajectories to reach carbon neutrality show the need for more renewable energy, higher energy efficiency, and a boost in new technologies. A selection of actions to translate carbon neutrality scenarios into reality discussed during the workshops include:

1. Phasing-out of coal and fossil fuels. This action requires governments to stop approving new fossil fuel projects and prioritize the expansion of renewable energy, with particular focus on offshore wind due to its high potential to reduce CO₂ emissions. (Figure 4).

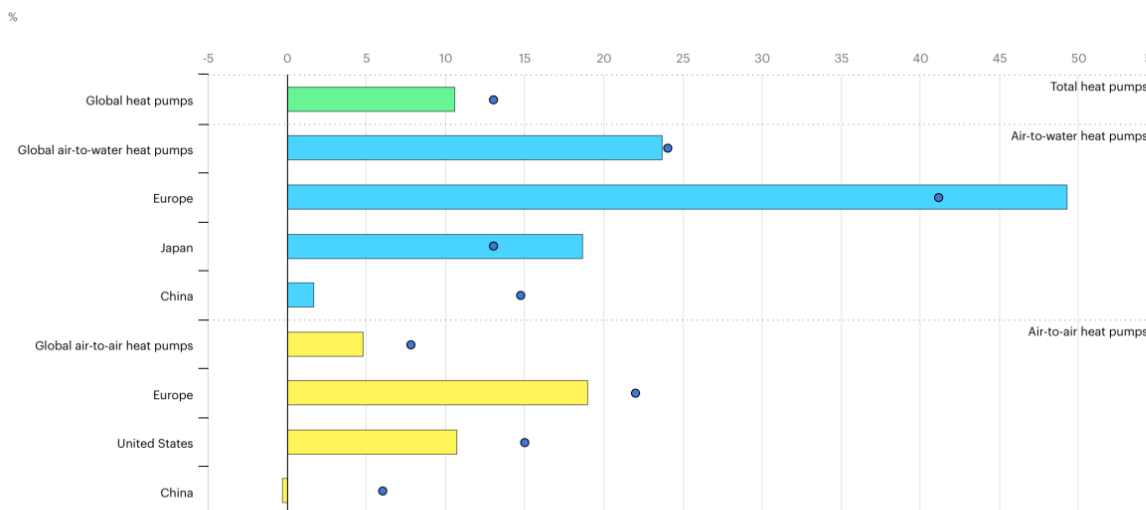
Figure 4. Annual direct CO₂ emissions avoided per 1GW of installed capacity by technology and displaced fuel



Source: IEA (2022). <https://www.iea.org/data-and-statistics/charts/annual-direct-co2-emissions-avoided-per-1-gw-of-installed-capacity-by-technology-and-displaced-fuel>

2. Improving energy efficiency. According to the International Energy Agency (IEA), one-third of emission mitigations will come from energy efficiency. This will take place in sectors such as heating, which is facilitated by the emergence of heat pumps, with China presenting great potential to further develop its heat pump industry (Figure 5).

Figure 5. Annual growth in sales of heat pumps in buildings worldwide and selected markets 2021-2022



Source: IEA (2023). <https://www.iea.org/data-and-statistics/charts/annual-growth-in-sales-of-heat-pumps-in-buildings-worldwide-and-in-selected-markets-2021-and-2022>

IEA Licence: CC BY 4.0

3. Boosting innovation and new technology. For example, reducing energy demand, modernising existing energy infrastructure with the best technology available such as Carbon Capture Storage and Carbon Capture and Usage Storage, decarbonising energy-intensive sectors (e.g., steel, hydrogen), increasing grid flexibility, managing methane emissions from coal, gas, and oil. These technologies are already available. At the current stage it is crucial to maximise R&D for new technologies and new materials across all sectors, securing necessary raw materials and critical minerals, as well as improving cross-country cooperation such as regional connectivity.

Case study: the coal transition in Jharkhand (India)

Jharkhand, a central Indian state, has the highest coal reserves in India with an estimated 83,152 million tonnes of coal, equivalent to 27.3% of India’s coal reserve.³² Jharkhand has 144 mines, directly employing around 300,000 people and around one million people indirectly,³³ making the socio-economic impact of a coal phase-out significant, if not adequately considered and addressed.

With the support of UNDP, international and local actors, and the private sector, the Government of Jharkhand are currently developing:

- An integrated Framework for Transition in Coal Mining Districts of the state, which aligns with the Government of India’s international commitment and is centered on climate justice;
- An institutional setup, legal frameworks, coordination, and accountability; arrangements for effective governance of just transition;
- Social actions to ensure a just transition, including reskilling/upskilling, retirement, internal mobility, social investments, and entrepreneurship;
- Gender-responsive services for inclusive economies and the empowerment of women, the reduction of time poverty, gender-responsive social protection and care;
- Sustainable, ambitious, and consistent strategies that account for the interplay of innovative and digital technologies in the energy transition.

Figure 6. UNDP Integrated people-centered just energy transition approach

While countries are making efforts to boost low-carbon transition, it is crucial to ensure that the transition is just and inclusive. In order to address this issue, UNDP has developed an integrated people-centered just energy transition approach, a framework with people at the center (Figure 6). It includes six dimensions: economy (long-term energy planning; fossil fuels’ subsidies reforms), governance, social protection, gender equality, finance (de-risking of investment in renewables, carbon finance and Article 6), and technology.



Source: UNDP Sustainable Energy Hub (2023)

4. Sustainable financing for a just low carbon transition

4.1 The role of financing for an inclusive and just transition

Financing is a critical element in achieving a low carbon transition and the SDGs. However, on the back of the COVID-19 pandemic, the SDG financing gap is estimated to have widened to around USD 4 trillion.³⁴ That said, the critical issue is not the amount of the financial resources required to deliver on carbon neutrality or the SDGs, but how they are currently prioritized. Rising levels of subsidies for fossil fuels, estimated at around USD 1 trillion in 2022, is a case in point.³⁵

To bridge the financing gap, reforms are needed across the spectrum: tax and revenue, budgeting and expenditure, blended finance, business practices and investment, and remittances, among others. Overall, promoting a green financing strategy would help bringing climate action to the centre of national finance policy-making, strengthening political buy-in, and mainstreaming climate across reforms to public and private financing policy. Maldives, for instance, has been working on a financing strategy to support climate measures and achieve its national and international climate and sustainable development commitments.³⁶

For a comprehensive approach to the challenge, the Integrated National Financing Frameworks (INFF) was presented. This joint initiative by UNDP, the United Nations Department of Economic and Social Affairs (UN DESA), OECD, and the European Union (EU) aims at strengthening public and private financing for sustainable development. Through INFFs, countries are bringing together public and private actors, civil society, and development partners to develop financing strategies, reforms, and instruments that increase investment, manage risks and align finance with national sustainable development priorities and the SDGs.³⁷ Nigeria, for example, has developed an Integrated Financing Strategy with a robust INFF road map and Monitoring & Evaluation (M&E) Framework, and an effective governance and coordination mechanism.³⁸

4.2 Public finance: Bridging budgeting decisions with development priorities

Public finance plays a critical role in driving sustainable development, not only in terms of its volume but also as a powerful policy signal for private finance.

The integration of the SDGs into the realm of public finance can be achieved by their incorporating into various aspects of the budget cycle. Figure 7 presents a visualisation of the actions that can be taken at each stage of the cycle to achieve this integration.³⁹

To facilitate strategic budgeting, a national priority-setting process should be established from the top-down, complemented by sector planning from the bottom up, synergized through traditional instruments such as national development plans and medium-term fiscal frameworks, as shown in Figure 8.

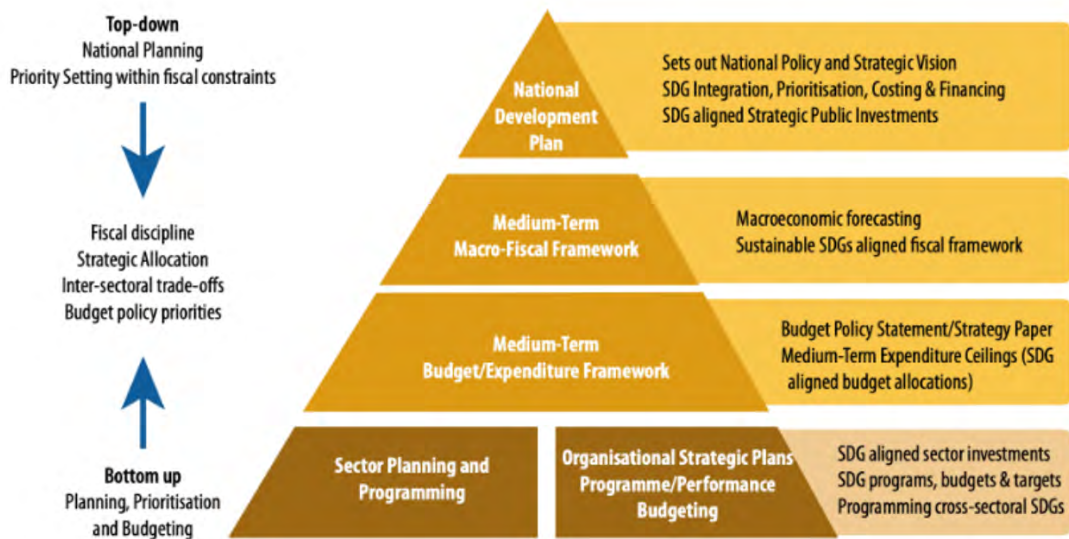
Although the integration of sustainable development dimensions into the conventional budgeting system may appear feasible in theory, it presents several challenges. Firstly, while many sustainable development priorities, such as climate change, are cross-cutting, most existing budgeting classifications are function-based rather than program-based. This classification method renders the budgeting system unable to account for sustainable development dimensions in a comprehensive manner, making it difficult to track the government's spending on SDGs. Secondly, the institutional

Figure 7. Budgeting for the SDGs – The overarching framework



Source: UNDP Sustainable Finance Hub (2022). *Budgeting for the SDGs: A Modular Handbook*. <https://sdgfinance.undp.org/sites/default/files/B4SDGs%20ModularHandbook.pdf>

Figure 8. Ideal scenario: SDG strategic budgeting pyramid

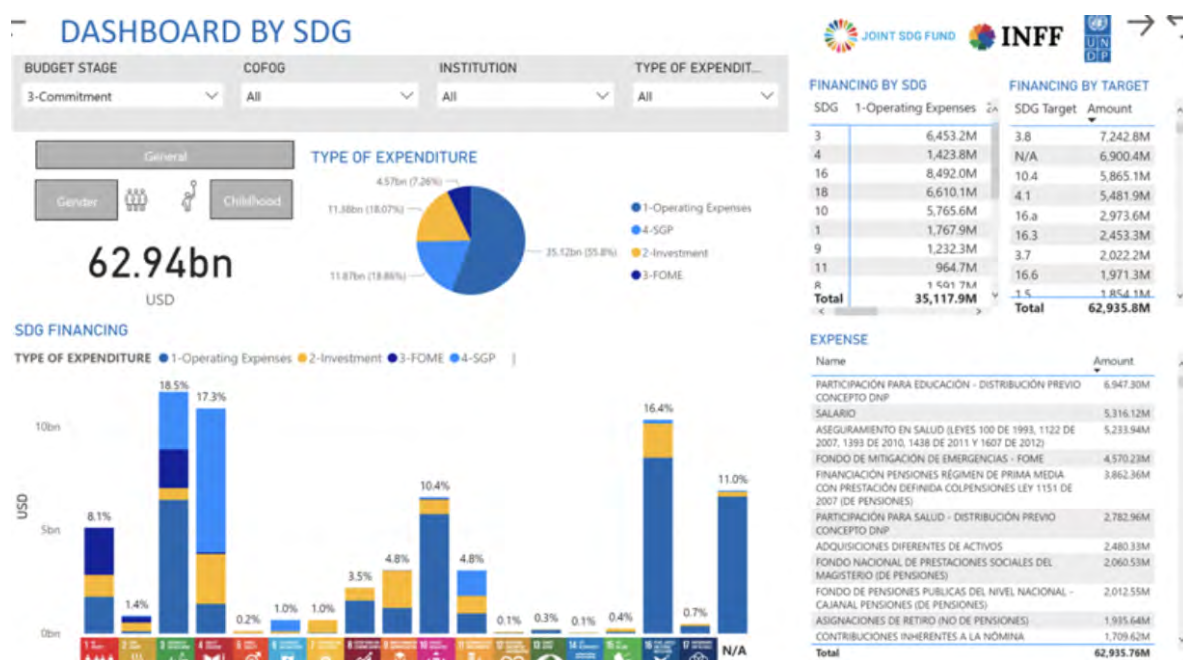


Source: UNDP Sustainable Finance Hub (2022). *Budgeting for the SDGs: A Modular Handbook*. <https://sdgfinance.undp.org/sites/default/files/B4SDGs%20ModularHandbook.pdf>

structure adds another layer of complexity. For instance, different ministries may adopt different approaches and pursue diverse outcomes for climate change, making it challenging to assign specific items and monitor outcomes. Furthermore, there is a mismatch between the time horizons, with climate actions needing a long-term investment horizon compared to the usually shorter political cycle.

SDG budget tagging can be a tool to enhance transparency and accountability of sustainable public finance. It involves the systematic use of specific codes or tags to identify and track budget allocations and expenditures that are specifically dedicated to supporting the achievement of the SDGs. UNDP has supported around 20 countries in establishing an SDG budget tagging system.⁴⁰ Take Colombia as an example of how SDG budget tagging works in practice. Budget items are tagged to all 17 SDGs with a breakdown of 169 targets, enabling the government to track and analyse the allocation of public financial resources dedicated to each SDG and its associated targets, as shown in Figure 9. Furthermore, this approach allows the identification of which budget programs address specific goals or targets, facilitating transparency and accountability in budgeting processes, as well as enabling better monitoring of progress towards achieving the SDGs.

Figure 9. SDG alignment of the Colombian public budget



Source: UNDP (n.d.). *Alignment of the 2020 Colombian National Budget towards SDGs*

In the budget formulation process, line ministries can be required to clearly state the outputs and SDGs outcomes associated with new budget allocations. Armenia, for example, has incorporated an additional column in its program-based budgeting system to present sustainable development Key Performance Indicators (KPIs).

To conduct a thorough evaluation of public finance alignment with the SDGs, ministries of finance can perform an expenditure trend analysis. This involves comparing the trend lines of budget expenditure with changes in SDG KPIs, allowing for the identification of areas where increased funding did not correspond to the expected outcomes. Such an analysis serves as a foundation for productive discussions with line ministries or local governments, facilitating a comprehensive review of resource allocation and encouraging adjustments to ensure better alignment between budgetary decisions and the desired impact on SDG targets.

In addition to the ministry of finance, parliaments and audit institutions also play a critical role in evaluating government systems for sustainability. Their involvement ensures all-round assessments of public finance alignment with the SDGs, thereby promoting accountability and transparency in the public sector.

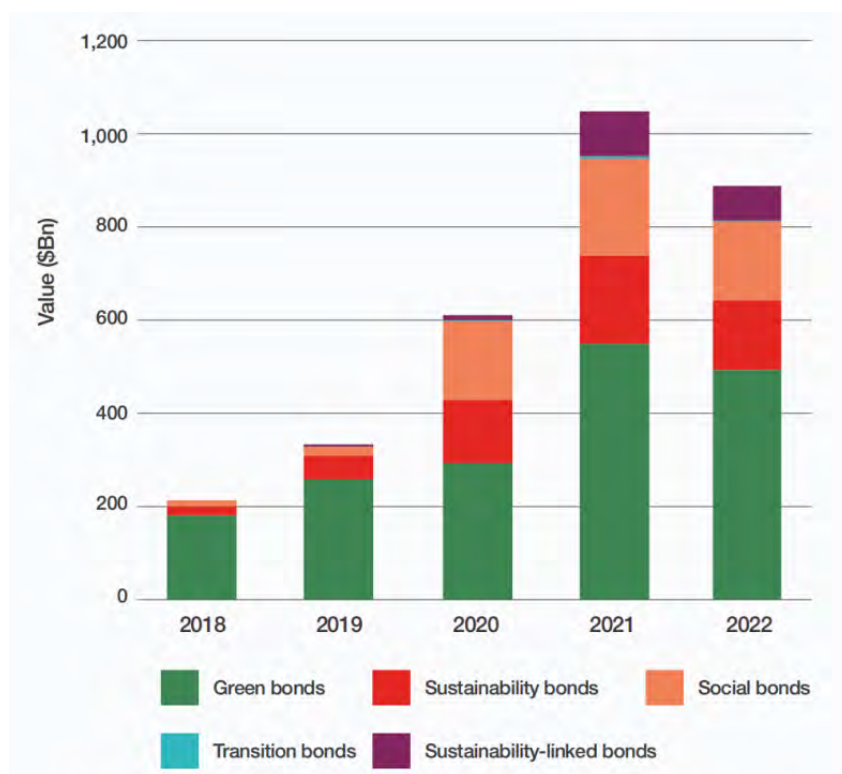
4.3 Private finance: Leveraging innovation to accelerate financing in green and SDG-aligned areas

Achieving carbon neutrality goals within the next two to three decades will require significant resources beyond what public finance can provide alone. Therefore, private finance must also play a critical role in accelerating the transition towards an inclusive low-carbon economy.

4.3.1 The sustainable bond market shows great untapped potential

The global bond market holds significant importance within capital markets as a crucial source of finance. However, sustainable bond⁴¹ volumes accounted for only 5% of the global bond market in 2022,⁴² pointing to a large untapped potential for bond markets to contribute to the attainment of the SDGs.

Figure 10. Annual issuance of sustainable bonds



Source: Environmental Finance (2023). Sustainable Bonds Insight 2023. <https://www.environmental-finance.com/assets/files/research/sustainable-bonds-insight-2023.pdf>

In 2021, the global sustainable bond market experienced an unprecedented surge, exceeding the USD 1 trillion milestone for the first time. However, the market's momentum slowed down in 2022 due to widespread market volatility, resulting in a total issuance of just over USD 880 billion. Figure 11 shows the SDGs focus of bond markets highlighting the challenge of attracting private investors' interest in social-related SDGs, indicating that social projects have yet to meet the required rate of return benchmark.⁴³

Figure 11. Breakdown of sustainable bonds aligned with the SDGs in 2022



Source: Environmental Finance (2023). Sustainable Bonds Insight 2023. <https://www.environmental-finance.com/assets/files/research/sustainable-bonds-insight-2023.pdf>

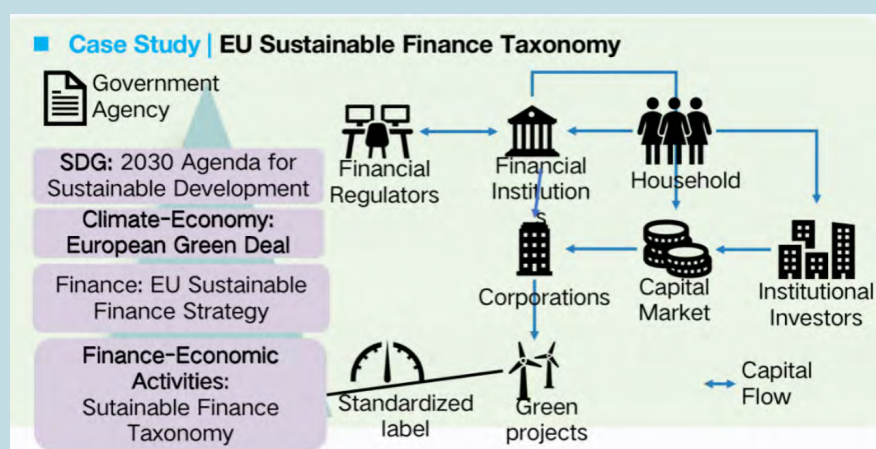
4.3.2 Finance taxonomies: a tool to bridge the gap in screening bankable projects

A taxonomy is an essential tool to promote green financing that connects different fields, including the climate sector, industrial sector, and financial sector, with a common language and methodology, **bridging a significant information gap in screening bankable projects**. From a macro perspective, a taxonomy helps ensure that the market correctly and timely reflects the supply and demand of green projects and green funds. At the micro level, the taxonomy provides reliable and timely data for investors for informed decisions.

The EU Sustainable Finance Taxonomy

Among a growing number of green and sustainable finance taxonomies, the EU Sustainable Finance Taxonomy is a notable example. The EU Taxonomy provides a set of principles, lists of projects, technical criteria, and a technical system of interpretation of these technical criteria to determine environmentally sustainable economic activities. With these criteria and lists of projects, investors can identify opportunities and selectively invest. At the same time, they are bound to disclose information about their investment projects per the criteria.⁴⁴

Figure 12. EU Taxonomy



Source: WRI

There are many similarities between taxonomies, constituting the basis for greater alignment and harmonization of standards:

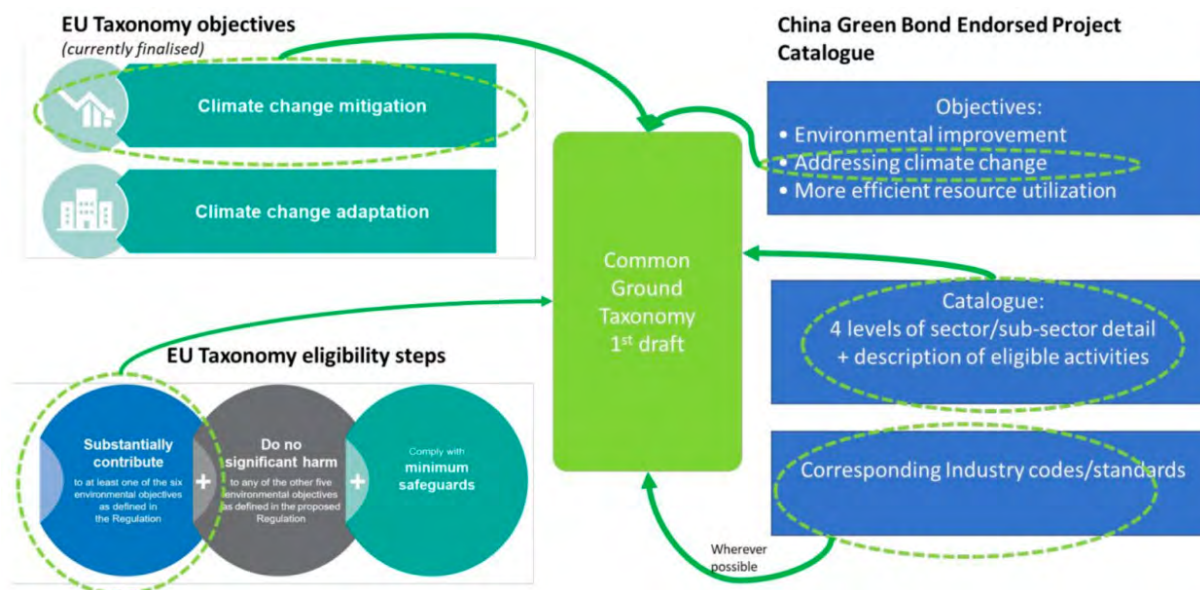
1. The **scope** of taxonomy in different countries typically covers at least one area out of the three categories: the environment, climate, and biodiversity.
2. In **principle**, a taxonomy requires economic activities to render “no significant harm” and “positive contribution”.
3. The **“list system”**, which can be understood as a set of guidelines or a catalogue, is used to classify economic activities. The standards and methods of a taxonomy are science-based, constantly updated, and consistent with other classification standards in as much as possible.

At the same time, taxonomies may differ in several aspects, such as the type of screening principles adopted and the degree of detail:

1. **Positive screening versus negative screening.** The former is a green list of preferred projects, while the latter consists of environmentally undesirable activities.
2. **Availability of detailed technical standards.** The “list system” is a relatively general method. Some countries, such as Malaysia and Japan, give general principles and a demonstration list. The EU Taxonomy, on the other hand, gives a more detailed illustration of industries, including the definition of the industry, the related industry, the core indexes, as well as the logic behind such evaluation criteria.

To bridge some of the differences, in July 2020, the EU and China established a Working Group (WG) on taxonomies through the platform of the International Platform of Sustainable Finance (IPSF). Co-chaired by both parties, the WG developed the China-EU Common Ground Taxonomy (CGT), a significant leap forward in aligning different standards, especially in light of the size of the markets they could potentially cover. This taxonomy aims at identifying shared objectives, catalogues, and industry standards, serving as a model for aligning and making different standards compatible. By referring to the CGT, emerging markets can locate their sustainable projects within the common ground established by the EU and China. Moreover, for international investors in the capital market, it provides a powerful incentive for future investment opportunities, ensuring a more effective and streamlined approach to sustainable investments.

Figure 13. EU-China Common Ground Taxonomy



Source: https://gsh.cib.natixis.com/api-website-feature/files/download/12138/eu-china_taxonomy_mandarin_.pdf

In the pursuit of aligning standards, it is crucial to acknowledge the varying development context of each country. Developing countries often face challenges in meeting stringent green requirements for projects or achieving emission reduction targets that comply with established standards. Therefore, it becomes essential to consider the inclusion of energy transition constraints within these standards. Recognizing this need, ASEAN released **Version 2 of the ASEAN Taxonomy for Sustainable Finance**, classifying activities as either Green or Amber.⁴⁵ This taxonomy focuses not solely on setting specific emission reduction targets but also on establishing a timeframe for completing the transition to alternative energy sources, such as renewable energy and bio-based resources. This approach allows for a more targeted and nuanced consideration of different development contexts while still promoting sustainable practices and facilitating the shift towards a greener future.

Based on these developments and innovation in the field, selected trends for future development of green and sustainable finance taxonomies include:

1. **An expanded scope for taxonomies to increasingly focus on underlying economic activities.** For example, **manufacturing activities** that do not contribute directly to the environmental goals can help other industries to achieve environmental goals. Wind turbine manufacturing, which does not contribute to the environment but plays a supporting role in the wind power industry, can be considered as green.
2. **Great emphasis on governance and management issues...** For example, the EU taxonomy emphasizes the full project lifecycle, with a supporting governance system and management framework.
3. **... As well as overseas operations.** In the green performance evaluation criteria for financial institutions of the People's Bank of China, the extent to which financial institutions support the green transformation of local industries overseas is mentioned.
4. **The need to also focus on transitional sectors for more research and clearer definitions.** For example, the plastics recycling industry is useful at the moment but will no longer be useful when the economy as a whole achieves net-zero. How to properly classify these transitional sectors remains under discussion.

UNDP’s initiatives in SDG Finance

UNDP has engaged with 40 countries in establishing an enabling environment, governance mechanisms, monitoring and evaluation framework for Eurobonds, Islamic bonds, thematic bonds, etc. One significant step is the launch of SDG Impact Standards for Bond Issuers⁴⁶ in 2021, which focused on the bond issuer’s decision-making practices, rather than the bond instrument itself. By focusing more holistically on the bond issuer’s impact management and decision-making practices, the SDG Impact Standards address gaps in current market practices that tend to be more transactional in nature and risk undermining progress towards the SDGs.

4.3.3 Setting Science-Based Emissions Reduction Targets for financial institutions

The Science-Based Targets initiative (SBTi) drives ambitious climate action in the private sector by enabling organizations to set science-based emissions reduction targets.⁴⁷ Specifically, it provides technical assistance, expert resources, and independent assessment and validation of these targets, promoting practices involved in emissions reduction and net-zero targets.

Setting Science-Based Targets (SBTs) offers numerous benefits, including mitigating climate-related risks for companies and their financiers, and incentivizing a deeper understanding of the transformations that companies and industries will undergo as they work towards achieving their targets. This understanding can then be leveraged to identify new business opportunities that arise from the transition to a zero-carbon economy.

Table 1 outlines the key requirements for financial institutions (FIs) to set SBTs. These include the need to address FIs’ scope 1 and 2 operational emissions, as well as to tackle their scope 3 emissions. In this latter category, the most relevant activity by a financial institution would be emissions from its loans and investments. The FIs must also disclose certain information, including their emissions footprint, target progress, and actions taken.

Table 1. Key requirements and recommendations for FIs

Topic	Requirements	Recommendations
Scope 1 and 2	Set scope 1 and 2 targets consistent with a 1.5°C pathway	
Scope 3	Set a target for scope 3 category 15 emissions (loans and investments)	Set a target for scope 3 categories 1-14 emissions
Scope 3 coverage	Set targets for all required asset classes, and disclose the percentage of assets under management (AUM) covered by portfolio targets	Set targets on all activities where methods are available
Scope 3 target time frame	Set near-term targets: <ul style="list-style-type: none"> • Five-10 years under the Sectoral Decarbonization Approach (SDA) • Maximum of five years under the SBT Portfolio Coverage and Temperature Rating methods 	Set long-term targets: <ul style="list-style-type: none"> • 2050 SDA targets will not be validated until the SBTi Net-Zero Standard for FIs is released • 100% portfolio coverage or 1.5°C portfolio temperature rating by 2040, at the latest
Actions	State the planned actions for reducing greenhouse gas (GHG) emissions	Establish a policy to phase out financial support to thermal coal by 2030 and annually disclose the annual investments, direct project financing and lending to fossil fuel projects and companies
Progress	Annually disclose scope 1 and 2 GHG emissions, progress toward achieving all approved scope 1, 2 and 3 targets, and actions taken to meet targets	Annually disclose scope 3 GHG emissions

Source: SBTi. <https://sciencebasedtargets.org>

The process for a financial institution to set science-based targets involves defining the organizational boundary, determining the ambition of scope 1 and 2 targets, deciding whether to set optional targets on scope 3 emissions, and identifying target boundaries. Financial institutions can use any of the three target-setting methods available to develop targets in their required asset classes and must develop clear and quantitative public target language and a summary of strategies to achieve the targets. After submission and approval by SBTi, the institution must publish its targets while tracking and reporting on progress against targets on an annual basis, to ultimately achieve portfolio SBTs.

The SBTi is currently developing a net-zero standard for financial institutions to set long-term targets. The Net-zero Standard sets out four key elements that make up a corporate net-zero target, which includes 1) a near-term science-based target for reducing emissions over the next 5 to 10 years in line with the 1.5oC pathway; 2) a long-term science-based target to reduce emissions by at least 90% across a company's own operations and its value chain by 2050 or sooner; 3) the neutralization of residual emissions when the company achieved the long-term target; and 4) mitigating actions or investments outside of a company's value chain to reduce or remove and store emissions from the atmosphere.⁴⁸

4.3.4 Empowering energy transition through data platforms

Data platforms play a crucial role in enabling and accelerating the energy transition by leveraging the power of digital technologies. Two approaches that involve the collection, analysis, and utilization of extensive data to facilitate informed decision-making and optimize energy systems are presented here:

1. The SDG Investor Map, on investment opportunities in alternative energy in Africa.
2. The Energy Access Explorer (EAE) platform, which demonstrates the assessment of energy data to support energy planning.

The SDG Investor Map is a market intelligence tool produced by UNDP to help private investors (funds, financiers, corporations) identify investment opportunities and business models that align with the SDGs.⁴⁹ It provides substantial evidence, data, and practical information on feasible businesses and business models that align with governments' development plans. At the same time, the map offers insights into financing strategies that the government can employ to incentivize private sector participation. It also catalyzes broader discussions on how to deploy capital more effectively, emphasizing the importance of forging partnerships between the public and private sectors.

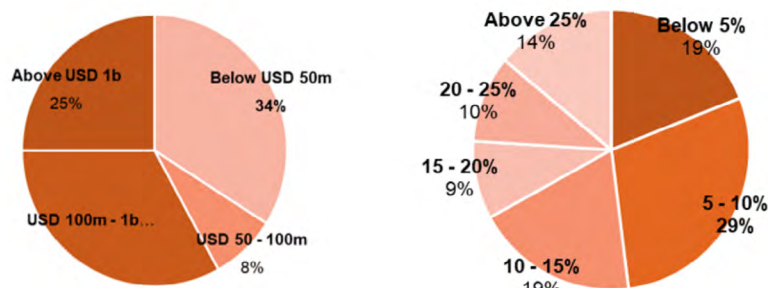
The process involves conducting a comprehensive needs' assessment that begins with prioritizing sectors and delving into critical sub-sectors. This approach helps identify Investment Opportunity Areas (IOAs) that offer viable investment opportunities aligned with governments' development priorities and SDG attainment.

For example, UNDP has developed a total of 26 maps, 12 of which are for the African continent with 11 ongoing. For African countries alone, the maps reveal a total of 245 investment opportunity areas. Notably, the largest number of investment opportunities, 61 IOAs, lie within the food and beverage sector. Infrastructure follows closely with 58 IOAs, while healthcare represents the third largest sector with 26 IOAs. Alternative energy involves 25 IOAs, securing the fourth position, while education presents 22 IOAs, ranking fifth. In total, there are 109 opportunities related to green and blue investments.

In general, the IOAs pertain to market sizes below USD 50 million, largely because Small and Medium Enterprises (SMEs) drive most African economies or have Compound Annual Growth Rate (CAGR) ranges of 5-10%⁵⁰. However, it is worth highlighting that IOAs in Western Africa stand out with significantly higher market sizes, surpassing USD 1

billion, particularly in sectors such as renewable resources and alternative energy, technology and communications, and infrastructure. These sectors present substantial investment opportunities in the region.

Figure 14. USD Value and Compound Annual Growth Rate of IOAs



Source: UNDP Sustainable Finance Hub (2023)

The Energy Access Explorer (EAE)⁵¹ serves as a valuable tool, providing geospatial data and analysis essential for shaping a future where affordable, reliable, and modern energy is accessible to all individuals and institutions, fostering socio-economic development. The EAE empowers stakeholders with strategic insights, enabling integrated energy planning that harmonizes various aspects of the energy sector. By leveraging the EAE, clean energy markets can be expanded, facilitating the

transition towards sustainable energy solutions. Additionally, the platform facilitates impact investment by providing valuable information for making informed decisions on energy projects. Moreover, the EAE facilitates a bottom-up assessment of energy needs, ensuring that the voices and requirements of local communities and regions are effectively considered.

The EAE has made significant strides in its coverage, currently encompassing countries that represent 32% of the global unserved population. The EAE has fostered close partnerships with over 150 stakeholders, engaging a diverse range of actors in the pursuit of universal energy access. This collaborative approach has contributed to the platform's success, as evidenced by its impressive user base, surpassing 12,000 active users.

4.4 Leveraging the potential of carbon pricing via ETS and international cooperation

Carbon pricing is a key policy instrument to alleviate the impacts of climate change in the next decades. Currently, there are 68 direct carbon pricing instruments in the world including 36 carbon taxes and 32 Emissions Trading Schemes (ETS).⁵² In 2021, global carbon pricing revenue increased by nearly 60% compared to the previous year.⁵³

In 2021, China launched its first national ETS carbon market in the power sector, making it the largest ETS in the world. Several recommendations to consolidate China's ETS in the next years were listed by the speakers. These include:

- **Improving institutional mechanisms and legal foundation**, including strengthening the legal basis, clarifying the responsibilities of participants, and regulating the procedures of carbon trading and related activities; clarifying the supervisory responsibilities of administrative departments, and building a joint supervisory mechanism with the participation of multiple actors; increasing supervision and penalties for violations of laws and regulations; strengthening institutional safeguards, introducing new regulations, and revising existing regulations to further close the gaps and shortcomings of the system; accelerating the revision of the MRV guidelines for corporate GHG emissions, and improving the verification of emission reports.
- **Improving the level of supervision and strengthening data quality management**. This would encompass: (i) Improving the multi-departmental and multi-level joint long-term market supervision mechanism, clarifying the main responsibility of enterprises, and strengthening daily supervision. (ii) Improving the unified and standardized data management technical specification system making full use of new technologies such as

big data and blockchain to improve data quality management efficiency. (iii) Establishing a regular capacity-building mechanism and improving the carbon emission management professional qualification mechanism. (iv) Improving technical specifications for verification of industry GHG emission accounting reports and ensuring credible, comparable, and reliable data quality management to form a mature industry.

- **Evaluating verification institutions and information disclosure.** This can be done by (i) organizing capacity training for businesses and public institutions on the national carbon market to improve the management of enterprises' carbon emissions and the supervision capacity of local ecological and environmental departments. (ii) Carrying out carbon emission data quality reviews for 2021 and 2022 for the national carbon market and conducting on-site inspections would help identify data quality problems for example.
- **Involving other industries** in the existing ETS, such as building materials, non-ferrous metals, iron and steel, petrochemicals, chemical industry, paper, and civil aviation, which account for more than 70% of the total carbon dioxide emissions of the country. It is also recommended to gradually increase the number of participants in the national carbon market, and mobilise individuals, financial institutions, and other non-compliant entities to participate in the construction of the carbon market at an appropriate time.
- **Boosting voluntary emission reduction trading mechanisms.** Voluntary emission reduction trading refers to the methods of voluntary emission reduction actions taken by subjects without legal obligations and responsibilities for greenhouse gas emission reduction. The effects of emission reduction are quantified and certified by scientific methods and then sold in the market to obtain economic benefits. It is recommended to fully mobilize all kinds of market players to participate in greenhouse gas emission reduction, ensure data reliability, and accelerate the development of an efficient, standardized, fair, open, and reliable market. In order to ensure the authenticity of projects and reliable data, it is suggested to accelerate the formation of an efficient, fair, open, and internationally recognized unified national voluntary emission reduction market, support the development of renewable energy, forestry carbon sinks, and promote synergies between pollution reduction and carbon efficiency, and promote ecological protection compensation.

At the same time, international cooperation is also key to unleashing the important potential of carbon pricing. Following the signature of the Paris Agreement in 2015 on climate change, Article 6 enabled international cooperation on carbon markets. After an agreement reached in 2021 at COP26 on implementation specificities, there are now three main types of approaches for Article 6 and carbon markets that can be used by countries or companies:

- Voluntary and cooperative approaches to agree on internationally transferred mitigation outcomes (ITMOs) towards a carbon target for a country or a private company for net-zero. This is the so-called decentralized approach, included in Article 6.2.
- A centralized approach with a baseline-and-crediting mechanism subjected to UNFCCC governance (Article 6.4).
- Non-market approaches, promoting mitigation and adaptation cooperation that does not involve the transfer of mitigation outcomes from a host country to a buyer (Article 6.8).

There are important challenges that prevent countries from using these new tools, including lack of capacity and technical complexity. UNDP has started to engage with several countries to enhance their readiness to engage in these new Article 6 cooperation mechanisms and facilitate funding via the Carbon Payment for Development Initiative⁵⁴. It also developed several digital platforms to enable cooperation and learning tools to improve capacity-building. An urban

waste project in Ghana with the support of UNDP and Switzerland has achieved authorization and is the first Article 6 project being implemented.⁵⁵ Using state-of-the-art technology, it will enable the processing of 1,400 tons of municipal solid waste daily.

4.5 The role of international financial institutions

International Financial Institutions (IFIs) play a critical role in promoting sustainable development and achieving the SDGs. They provide financing, technical assistance, and policy advice to developing countries and mobilize private sector investment. However, recent performance has raised concerns about the effectiveness of IFIs in meeting their commitments to the SDGs and the Paris Agreement. For example, IFIs have been struggling to meet their climate finance goals, leverage private financing, and provide lending at scale for crises like the COVID-19 pandemic. The focus on maintaining high credit ratings and adherence to international financial policies may incentivise risk-averse decision making limiting engagements and impact on sustainable development.

Against this background, there is a growing demand for reforming the international financial architecture, including Multilateral Development Banks (MDBs), to make them more fit for purpose. The G20 and the UN Secretary-General have called for actions such as enhancing the effectiveness and efficiency of institutions, increasing transparency and accountability, and improving operational effectiveness. Three areas for action were highlighted:

- **Scaling up financing and catalysing investment:** IFIs need to enhance their financing tools, such as guarantees, equity investments, and risk-sharing instruments, to attract additional private sector investment. They should also work with the private sector and other development partners to provide technical assistance and support the design and implementation of sustainable development projects.
- **Supporting policy and institutional reforms:** IFIs should strengthen collaboration with governments to support reforms in areas such as governance, public financial management, and creating an enabling environment for sustainable development investments.
- **Aligning strategies and operations:** IFIs should ensure their strategies and governance structures are aligned with an integrated approach to investing in the SDGs. They should improve conditions for lending, develop coherent impact measurement standards, and collaborate effectively with international partners to share lessons and best practices.

Both development banks and IFIs face challenges and opportunities when it comes to sustainable investment. On the opportunity side, there are examples of green bonds and innovative financing mechanisms, such as public-private partnerships and long-term financing for renewable energy projects. However, the technical capacity to evaluate the sustainability of specific projects may be lacking. In addition, political and regulatory environments can be challenging, with some countries favouring traditional energy sources over renewable ones. Financial sustainability can also be a concern, as some sustainable finance projects may require significant grants.

To address these challenges, UNDP is working with development banks globally to leverage resources and implement joint projects. The role of IFIs in supporting the quality of SDG investor maps and relevant project pipelines is crucial in unlocking climate finance. Overall, collaboration between development banks and IFIs is vital to overcome challenges and seize opportunities in sustainable investment.

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Low Carbon Transition and Green & Sustainable Finance

Summary Note of Capacity Building and Knowledge Sharing Workshop

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