Report

Green Finance Roadmap for Armenia

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Scaling up green finance practices in the Republic of Armenia

ARMSWISSBANK
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[1] https://www.un-page.org/files/public/national_sustainable_finance_roadmap_of_mongolia.pdf

Abbreviations and Glossary

ADB	Asian Development Bank
AMD	Armenian Dram
ANPP	Armenian Nuclear Power Plant
CSO	Civil Society Organization
EBRD	European Bank for Reconstruction and Development
EPIU SE	Environmental Project Implementation Unit State Entity
ESG	Environmental and Social Guidelines
ESS	Environmental and Social Standards
EU	European Union
EUR	Euro
GCF	Green Climate Fund
GHG	Greenhouse Gases
IEA	International Energy Agency
LTS	Long-term strategy
NBS	Nature-based Solution
NAP	National Adaptation Plan
NDA	National Designated Authority of the GCF
NDC	Nationally determined Contributions
OECD	Organisation for Economic Cooperation and Development
RE	Renewable Energy
REDD+	Reducing emissions from deforestation and forest degradation
SHPP	Small Hydro Power Plant
Solar PV	Solar Photovoltaic Plant
UCO	Universal Credit Organisation (co-operative lenders)
USD	United States Dollar
WBG	World Bank Group
WPP	Wind power plant

Foreign Exchange Rates

1,000 AMD = USD 2.20

1,000 AMD = EUR 2.09

I. Executive Summary and Recommendations

Executive Summary

This document builds on various previous studies of Armenia's green finance current conditions, as well as barriers and opportunities, to articulate a clearly defined and actionable Green Finance Roadmap. The proposed roadmap aims to serve as a key political document which will establish a comprehensive vision for green finance strategy contributing to implementation of Armenia's NDCs and Paris Agreement commitments. It provides a strategic framework to mainstream green finance in the architecture and practice of financial markets and thus, in medium to long term it aims to contribute to mobilizing private and public capital for green projects in Armenia.

The roadmap can serve Armenia as a strategic tool to organize the wide range of actors involved in the transition to sustainable finance around a common conception and of their roles and responsibilities. The roadmap also helps to prioritize actions and coordinate activities among stakeholders, including policymakers, supervisors, regulators, associations, corporations, and other financial sector participants to accelerate the expansion of sustainable finance. Ultimately, the proposed Armenian Roadmap aims at accelerating the transition from the traditional to "green" financial system.

By summing up the recommendations from all activities and outcomes of the Project, including the current situational stock-taking, best practices review, legal framework analysis, "green finance" manual preparation, private sector engagement and institutionalization of E&S approach in financial sector, and the repository of "Green Finance Instruments" this document provides recommendations to change the climate paradigm in Armenia and significantly scale up green finance. It also provides a concrete timeline in which these measures will have to be implemented to achieve the desired outcomes.

The document starts with two introductory sections which describe the green finance context (section 1) and the current state of green finance in Armenia (Section 2). These sections start from the panoramic view of Armenia's economic outlook, finances and their impact on SDGs, and they then delve into concrete barriers and challenges to green finance in Armenia versus the country's potential. The actual proposed roadmap constitutes the third section of the document, and addresses policy objectives, the establishment of the appropriate policy and regulatory framework, and gender considerations. However, the most consistent part of the section focusses on considerations related to the actual implementation of the roadmap. The document also includes four annexes which further strengthen the roadmap's actionable recommendations and provide a list of potential projects, anchored in international best practice, previous recommendations from the readiness project, and the pipeline of MDB projects in Armenia.

Throughout the design process of the "Armenia Green Finance Roadmap", with the purpose of collecting critical insights and validating initial assumptions the team of experts has carried out consultations with the representatives of private sector, banks and MDBs. The latter's were also asked about key instruments, frameworks and planned investment volumes along with factors that can positively and negatively influence the process.

Summary of Recommendations

The Green Finance Roadmap is broken down into two phases, initial actions that help develop the framework and raise funding in the short term (to 2030), and longer-term actions that accompany these and that will provide the foundations and infrastructure for the long-term application and growth of green finance in Armenia. Initial actions are those that are required to rapidly enable the scaling of green finance in Armenia. They focus on fund-raising, the adoption of a taxonomy, and the interlinking of MRV systems to allow the impact of finance to be tracked in a more robust manner. Parallel actions are those which will be implemented over the longer term, requiring for example legislative time or longer-term adjustments in training and government process developments.

These actions are also categorised along four strategic pillars:

- Shaping a favourable policy framework
- Scaling up green finance flows
- Establishing an ESG Framework
- Addressing capacity constraints

Overall this report makes 12 initial action recommendations and proposes nine parallel actions, as summarized by Table 1 below.

Table 1: Overview of recommendations

1. Shaping a favourable policy framework	2. Scaling up green finance flows	3. Establishing an ESG Framework	4. Addressing capacity constraints
Initial Actions			
1) Establishing/ formalizing Green Finance Task Force (under CBA) 2) Development and adoption of a Green Bond framework for Armenia 3) Development and adoption of a green taxonomy	1) Revision of the GCF Country Program to enable scaled-up climate finance flows 2) Development of favorable regulations for renewable energy developers and PPPs 3) Supporting the development of green projects for financing	1) Development and adoption of a harmonized ESG framework for the financial sector in Armenia 2) Establishment of ESG market standards	1) Enhance understanding of international green finance frameworks and issues in the private sector 2) Enhance structuring capacity for PPPs 3) Enhance carbon market operating capacity

4)	Development of a carbon pricing regime						
Parallel Actions							
4)	Creation of an integrated MRV framework linking projects to national inventory reporting	6)	Structured engagement with climate funds	3)	Strengthen regulations to monitor and enforce and develop the ESG framework	4)	Develop capacity for establishing and maintaining complex MRV systems in public and private sectors
5)	Strengthening of data collection to more clearly identify potential actions and vulnerabilities	7)	Creation of a dedicated fund to support green investments			5)	Comprehensive ESG and gender training for public/private sector
		8)	Deepening MDB/DFI partnerships				
		9)	Supporting establishment of dedicated private green finance institutions (e.g., leasing companies, private equity funds, crowdfunding platforms)				

II. The Green Finance Context

Armenia's Economic Outlook

Key macroeconomic indicators

After surging by 7.6% in 2019, Armenia's macro-economic performance worsened in 2020 due to the twin crises it experienced, namely the impact of the Covid-19 pandemic and the 44-days war in September-November of 2022. In reaction to these, GDP declined by 7.4% in 2020, which was followed by a 5.7% increase in 2021.

Armenia remains heavily indebted, both for the public sector, where external debt exceeded GDP in 2021, and the private sector, where debt levels rose to almost ¾ of GDP in 2020. In consequence, it is likely that any major investments in support of delivering the objectives of the NDC will have to depend on the availability of external finance on favourable terms, as well as the ability to efficiency and at low-cost finance private sector involvement in delivering on these objectives.

In February 2021, Armenia issued its fourth round of Eurobonds, with a volume of USD750 million, a 10-year maturity and annual interest at 3.9%, the lowest rate on an issue so far and to strong investor interest[2]. This followed the issuance of USD500 million in 10-year Eurobonds in September 2019 at a 4.2% annual interest rate. Armenia's rating for long-term foreign debt issuer default risk was confirmed as B+ 'Stable' in March 2022[3].

Armenia's output declined across all sectors in 2021. Industry, excluding construction, reversed from 8.3% growth in 2019 to contract by 1.5% in 2021 as declines in manufacturing, electricity generation, and utilities for water and waste management outweighed a 12.0% rise in mining and quarrying. Construction shrank by 6.6% as households and firms curtailed capital outlays. Services followed 10.4% growth in 2019 with a 9.2% plunge reflecting double-digit declines in trade, recreation, accommodation, transportation, and food services. Agriculture deepened its 2.6% fall in 2019 with a further 4.0% decline.

Table 2: Main Macroeconomic Indicators, %[4]

	2017	2018	2019	2020	2021	2022 (proj.)[1]

[2] https://www.azatutyun.am/a/31082673.html
[3] https://www.fitchratings.com/research/sovereigns/fitch-affirms-armenia-at-b-outlook-stable-18-03-2022
[4] EBRD Transition Report 2021-2022 "System Upgrade: Delivering the Digital Dividend", Country Assessment – Armenia

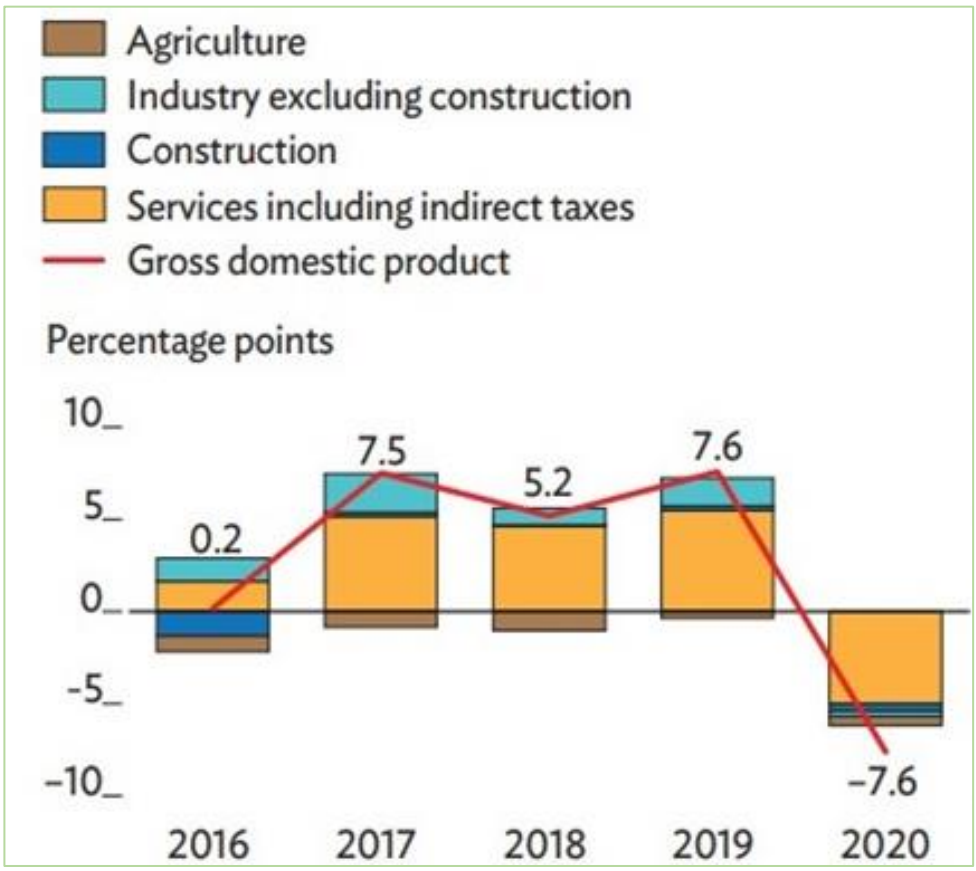
GDP growth	7.5	5.2	7.6	-7.4	5.7	2.8
Inflation (average)	1.0	2.5	1.4	1.2	6.9	9.0
Government balance/GDP	-4.8	-1.8	-1.0	-5.4	-4.0	-
Current account balance/GDP	-1.5	-7.0	-7.4	-3.8	-2.7	-4.5
Net FDI/GDP (neg. sign = inflows)	-1.9	-2.1	-1.7	-0.6	-1.6	-
External debt/GDP	91.3	87.7	90.9	102.1	-	-
Gross reserves/GDP	20.1	18.1	20.9	20.7	-	-
Credit to private sector/GDP	53.0	57.1	62.6	73.3	-	-

[1] ADB projections

On the demand side, private consumption, which provides about 80% of GDP, reversed 11.7% growth in 2019 with a 14.0% plunge as business closures and reduced income and remittances cut household spending. However, public consumption grew by 15.6% on government measures to mitigate the impact of COVID-19 and support economic activity. Investment, measured by gross fixed capital formation, dropped by 14.0%, reflecting a slowdown in government capital spending and caution among investors in a deeply uncertain economic and political situation. Net exports became less negative as imports fell more than exports in volume terms.

Figure 1: Armenia: Supply side contributions to growth[5]

[5] Asian Development Outlook 2021, ADB Publication



Average inflation eased from 1.4% in 2019 to 1.2%, reflecting weakened demand, both external and domestic. Price increases slowed from 2.1% to 1.2% for food and from 1.5% to 1.0% for other goods but accelerated from 0.5% to 1.4% for services. Given more recent developments, this increase in inflation is unlikely to abate, and it will affect the ability of the private and public sector to raise finance for capital projects such as investing in renewable energy or energy efficiency.

Socio-economic challenges

To soften the impact of COVID-19, the government implemented several forms of support. A stimulus package equal to 3.5% of GDP was allocated in 2020. Measures included subsidies for small and medium-sized enterprises to support their employees, direct financial support to vulnerable households and state-guaranteed loans to selected firms, all with the purpose of providing immediate support to those most affected by the Covid-19 pandemic. Within this support framework and jointly with the private financial sector, the Government specifically targeted assistance to the private sector through allocating USD367 mln (equivalent to 2.9 per cent of GDP) to support economic activity in 2020. Measures included subsidized loans to the most affected sectors and businesses, in particular tourism and agriculture, grants to the private sector, direct wage subsidies to micro, small and medium-sized enterprises (MSMEs), and a strengthened social assistance Programme with additional lump sum transfers. The main aim of this package was to preserve jobs and thus protect the most vulnerable. Other than this direct support, the Armenian

government also advised banks to undertake voluntary loan restructurings and/or offer limited payment holidays to ease the cash-flow pressures experienced by their borrowers.

As the pandemic continued into 2021, the government approved the Economic Response Programme and an action plan supporting it in February 2021 to support the economic recovery in 2021. Through 12 targeted actions and 14 assistance programmes, the Government aimed to restore economic activity, maintain viable and reliable business and consumer environments, and develop a medium-term economic policy agenda.

In 2022, the war between Russia and Ukraine will exacerbate the economic challenges posed by the continuing pandemic.

Box 1: Potential impact of war in Ukraine

The Russian-Ukrainian conflict will have a negative impact on the Armenian economy in several areas, including trade, remittances, as well as in the context of commodity prices and foreign investment, according to a World Bank forecast[6]. Fitch Ratings has similar concerns, as noted in its most recent rating and a more general outlook for the CIS+ economies[7].

The World Bank review notes that rising global food prices will affect the Armenian economy and may increase inflationary pressures. In addition, the Armenian economy is closely linked to Russia through trade, money transfers and foreign direct investment. In 2021, almost 30% of Armenia's exports (6.1% of GDP) went to Russia, including a wide range of goods, such as alcoholic beverages, textiles and food products. According to projections by the Ministry of Economy of Armenia, Armenian exports will drop by 40-50% due to the Russian-Ukrainian war. Nevertheless, this very bleak picture is balanced by competing estimates, which argue that the war will not affect Armenian exports because delivery of goods from outside the CIS area to Russia is becoming much more complicated, and many shipping companies have refused to cooperate with Russia. According to these estimates, the demand for basic goods, including food, will increase significantly, and this will also prompt Armenian companies to step up production and exports.

Money transfers from Russia, in terms of their share in GDP, have declined in recent years, but nevertheless remain significant and account for about 5% of GDP, covering almost a third of the

[6] World Bank Group Publication "War in the Region", Europe and Central Asia Economic Update, Spring 2022
[7] https://www.fitchratings.com/research/sovereigns/fitch-expects-significant-economic-shock-to-cis-region-from-war-in-ukraine-09-03-2022

trade deficit in goods. These flows are likely to decline due to weaker economic activity in Russia, devaluation of the ruble and limited financial flows from Russia. With a worsening economic downturn in Russia, many labor migrants may be forced to return to Armenia, putting pressure on the domestic labor market and fiscal spending.

Overall, the impacts are difficult to foresee, as the war continues.

Finance and the SDGs

The adoption of the SDGs has significantly transformed how the private and public sectors function to achieve inclusive and sustainable development. Following their adoption, in 2016 UN Secretary-General Ban Ki-moon announced the launch of the new Financial Innovation Platform targeting at developing, identifying, and piloting Innovative Finance Instruments (IFIs) that can support SDG goals.

Meeting the green objectives of the 2030 Agenda requires substantial and unprecedented investments into several SDGs (most importantly SDGs 6, 7, 11, 12 13, 14, and 15). Governments need to effectively support this sustainable development and ensure that the funds raised for this purpose are used efficiently to reach the communities and people furthest behind. They also need to ensure an enabling environment to raise these funds effectively and at low cost, by addressing risks and assuring investors.

Figure 2: Green Finance and the SDGs

Sector-Level Contributions of Green Finance to the SDGs

Three sectors are of critical importance to greening finance in Armenia, **agriculture**, **energy** and **infrastructure.** The energy sector and energy transition to a Paris Agreement-aligned, low-carbon future are important in terms of delivering clean, renewable energy and energy efficiency, while the infrastructure sector plays an enabling role in ensuring that demand for energy is kept low, through e.g., energy efficiency investments, while the increased use of renewable energy is enabled through e.g., electrification of transport. Both sectors require high volumes of targeted investment, to be delivered within robust frameworks by international and national investors.

Agriculture

Armenia's 4th National Communication on Climate Change notes that GHG emissions from the agricultural sector contributed ca. 2.3mt CO2e in 2016, equivalent to 22.3% of total emissions.[8] The agriculture sector is furthermore vulnerable to climate change impacts in the form of extreme weather events, temperature variations, both absolute and seasonal, variations in precipitation which can contribute to either lack of water or flooding. As temperatures in Armenia are rising faster than elsewhere, 80% of the territory of Armenia is already at risk of desertification. While this is not solely due to climate, but affected also by non-climate influences, e.g., driven by over-

[8] UNFCCC, 4th National Communication on Climate Change, Yerevan, 2020, https://unfccc.int/sites/default/files/resource/NC4_Armenia_.pdf

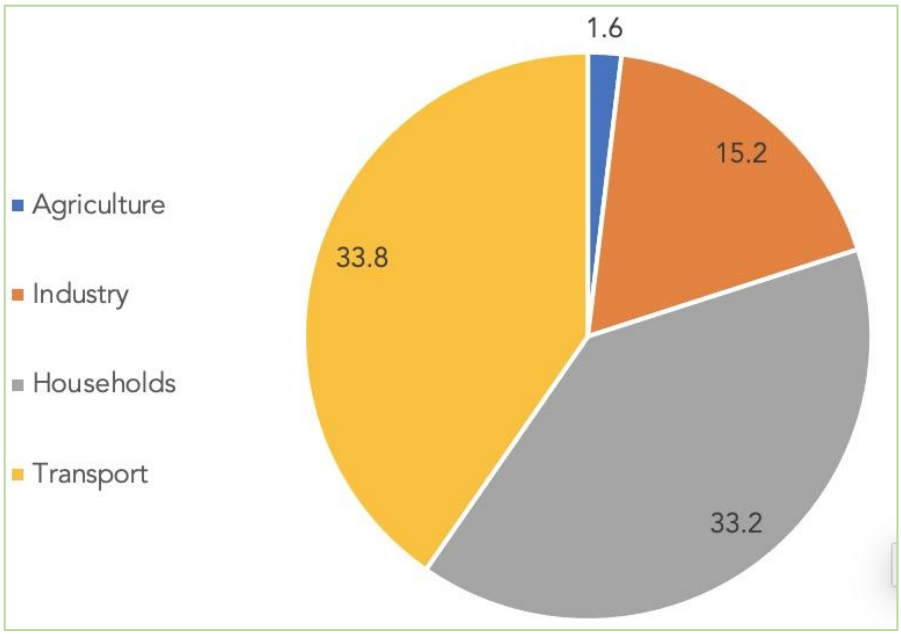
exploitation and soil degradation, the overall risks are exacerbated by climate change impacts. As such, the agriculture sector has been identified as a priority sector for green finance.

Energy

The energy sector is of strategic importance for Armenia not just environmentally, but also in terms of achieving its national development goals, ensuring security, as well as providing reliability and access to energy services for the population. Armenia's NDC for 2022-2030 with the reference to the "Republic of Armenia Energy Sector Development Strategic Programme to 2040" prioritizes generation of energy from renewable sources and increasing energy efficiency among key priorities for the country's energy security and key drivers of low carbon development.

At present, electricity in Armenia is mainly generated by nuclear, hydro and thermal plants. Of this, 39% is generated by a single nuclear power plant while the remaining 60% is generated equally by hydro and thermal plants. As such, electricity in Armenia is already relatively low carbon, compared to other countries in the region, and further investment will continue to improve on this.

Figure 3: Share of Energy Use in Armenia, 2018[9]



The IEA analyzed the realistic potential for increased contributions by source, finding that the highest potential applied to solar PV, where Armenia's potential is higher than the average for the EU, with a specific daily photovoltaic power output of 3.25-4.48 kWh/kWp and global horizontal

[9] Republic of Armenia Energy Strategy to 2040

irradiation of 3.86 – 5.43 kWh/m2[10]. Some two-thirds of this potential is at a level of 4.0- 4.4 kWh/kWp (or 1 460-1 600 kW full load hours per year), which is like Spain. By comparison, wind potential suffers because most sites with good windspeed are located remote from load centers and at heights above 2,000m, and for hydropower, a major boom since the introduction of feed-in tariffs has led to a backlash and restrictions on further construction of small hydropower.[11]

Table 3: Power use in Armenia, 2016 to 2019 and 2030 (planned)

Year	Consumption	Export	Own Use	Total
	TWh			
2016	5.57	1.2	1.03	**7.3**
2017	5.38	1.4	1.02	**7.8**
2018	5.24	1.6	0.96	**7.8**
2019	5.47	1.25	0.88	**7.6**
2030(p)[1]	5.75(e)[2]	5.0(p)	1.25(e)	**12.0(p)**

[1] (p) = planned
[2] (e) = estimated

The Republic of Armenia Government aims to increase the share of solar power generation at least to 15% of the total generation or 1.8 TWh by 2030. For that purpose, solar power plants with total installed capacity of 1,000 MW including autonomous plants will be constructed. The capacity of two PV plants already tendered will comprise 200 MW each. Soon, new tenders for construction of seven solar photovoltaic power plants with total installed capacity of about 520 MW will be conducted. Achieving this target will require a comprehensive review of the current regulatory framework governing the power sector, including connection and dispatch regimes, and treatment of financial support.

In the retail sector, according to the data from Electric Networks of Armenia, on 1 January 2022 6,940 autonomous solar energy producers were connected to the grid with an estimated installed capacity equivalent to 136 MW. Considering the favourable current regulatory regime, where net-metering is applicable for installations up to 500 KW, and the availability of attractive financing schemes, it is expected that this figure will be doubled during the next 2-3 years.

Beyond solar, in the coming years the prospective changes in the renewable power world markets can enable not also renewable energy power plants with integrated storages to compete with traditional base plants. The fact that the solar and wind technologies are considered as part of the least cost solution for new generation under all scenarios stresses the importance to Armenia of

[10] World Bank ESMAP 2020
[11] IEA – Armenia Energy Policy Review 2022: https://iea.blob.core.windows.net/assets/8328cc7c-e65e-4df1-a96f-514fdd0ac31e/Armenia2022EnergyPolicyReview.pdf

ensuring a policy and institutional environment that supports the development of these technologies to the maximum extent possible, not only to ensure the lowest cost generation but also to minimize reliance on other imported energy sources and to strengthen Armenia's energy security and competitiveness.

Infrastructure

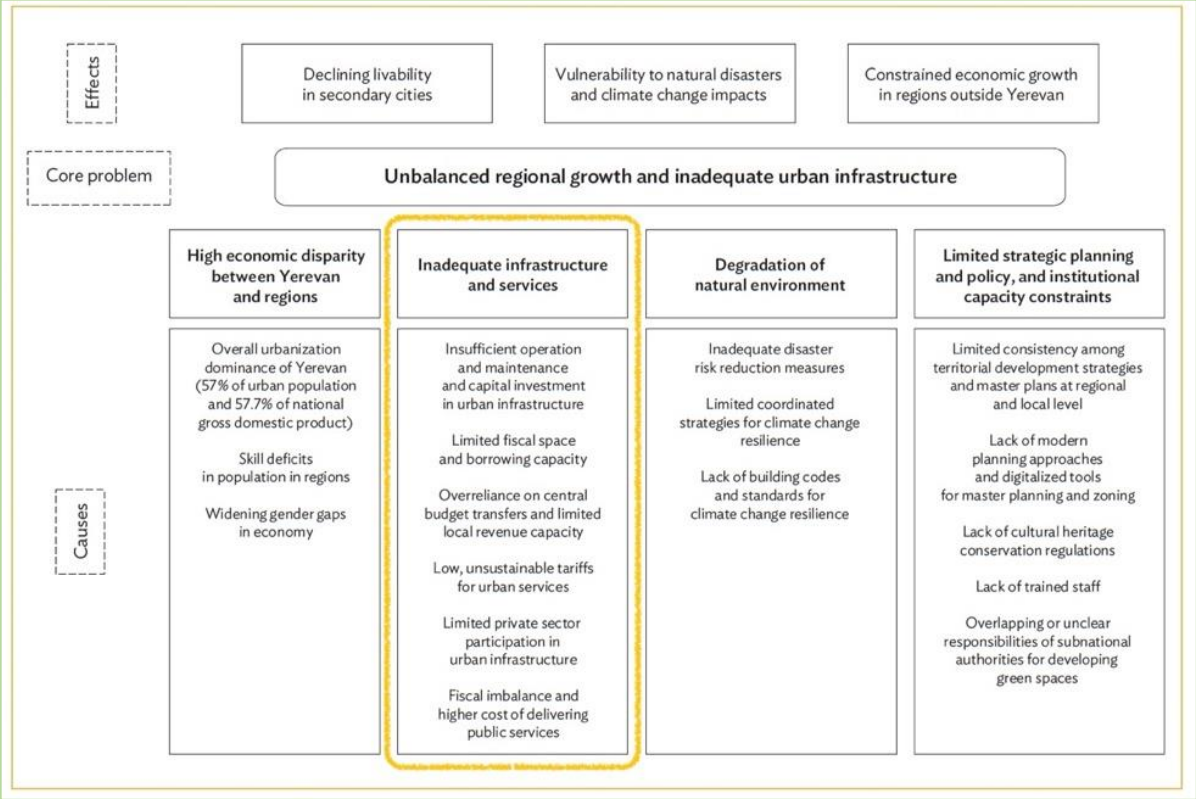
Infrastructure investment is increasingly recognized as one of the key factors behind long-run economic growth, as well as enabler of more equal regional growth, higher mobility of resources between and within regions can build equitable growth and spread economic gains more widely across growth centers and regions. All of these are challenges in highly centralized small countries such as Armenia.

During the last decades, supported by its development partners, Armenia has made a sizeable improvement in hard infrastructure renovation and building, leading to better access to education, healthcare and other critical services, delivering the SDGs in Armenia. Nevertheless, significant gaps in the implementation of large-scale infrastructure projects remain and Armenia's infrastructure sector continues to be highly in need of investment, to address shortcomings in the availability of modern, green infrastructure that works in support of the SDGs.

At national level, Armenia is facing continued shortages of access to infrastructure almost across the whole breadth of infrastructure, except for power supply and access to safe drinking water supplies. Connectivity, quality and performance of transport infrastructure is generally weak[12]. This is reflected also in the portfolio of development partners such as the MDBs, which heavily invested in infrastructure projects and connectivity, including roads, border crossings and air navigation[13]. Armenia's geopolitics and geographical location present transport challenges as it depends heavily on road transport and cross-border access. The challenges of Armenia's transport sector result in a high cost, especially for traded goods, and expensive infrastructure maintenance and development. There is significant financial and technical assistance support to develop transit routes across Armenia to provide shorter links and faster service, which in turn would increase the environmental performance of the sector.[14]

Figure 4: Infrastructure challenges in Armenia[15]

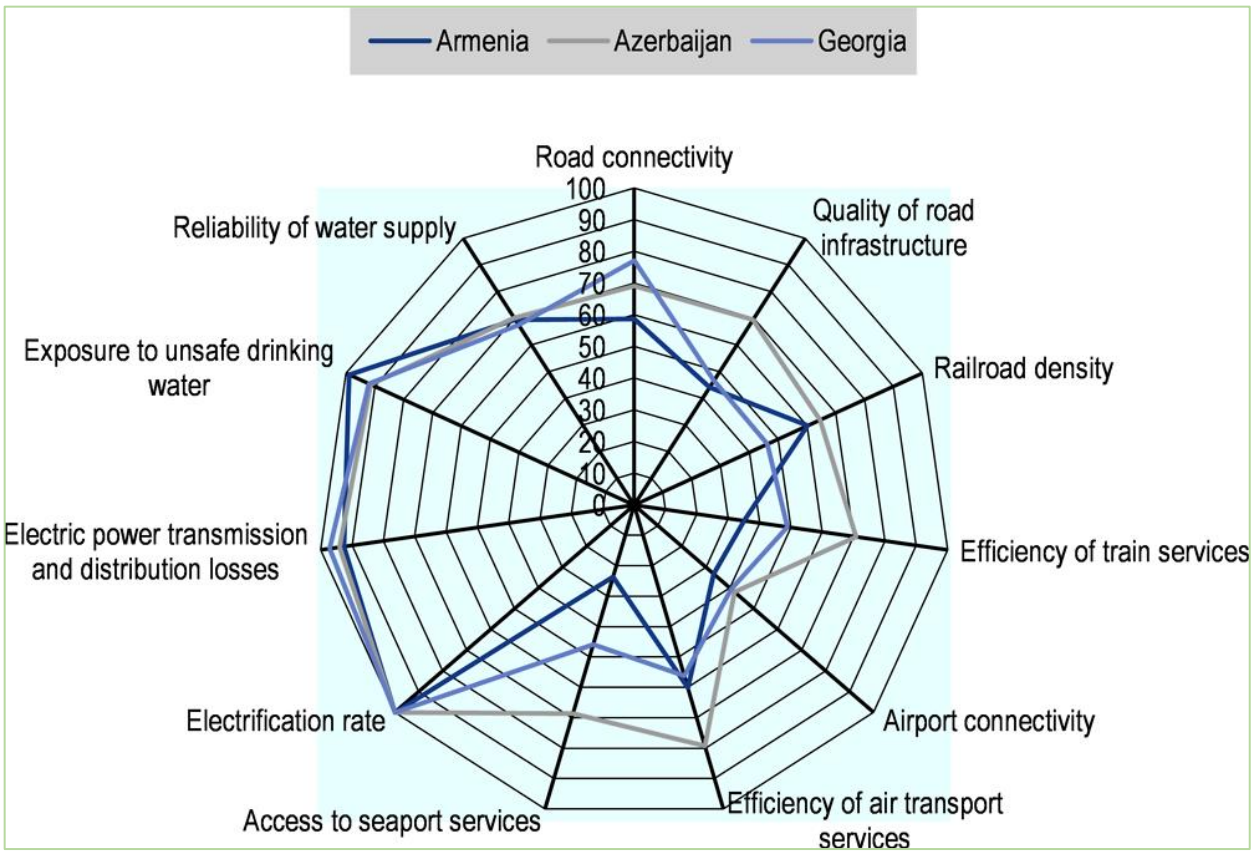
[12] OECD 2020: https://www.oecd-ilibrary.org/sites/50079b68-en/index.html?itemId=/content/component/50079b68-en
[13] See e.g., for EBRD https://www.ebrd.com/work-with-us/project-finance/project-summary-documents.html?1=1&filterCountry=Armenia
[14] ADB, 2019, *Armenia's Transformative Urban Future*
[15] ADB 2019 *Armenia's Transformative Urban Future*, Appendix II



Besides national infrastructure, urban infrastructure is also a challenge in Armenia, with many services in urgent need of repair and modernisation. Recent projects in this field include the modernisation of urban transport and waste by EBRD, as well as streetlighting[16]. As many of these projects are financed by development partners, rather than through private capital, the projects reduce the sovereign borrowing capacity of Armenia. Given the high level of importance of Yerevan in the urban landscape of Armenia, it is also hard to delineate clearly between national and urban infrastructure. For example, the identified issues in urban transport affect overall economic productivity.

Figure 5: Quality of infrastructure in Armenia[17]

[16] https://pipeline.gihub.org/Project/Search?search=true&country=Armenia
[17] WEF 2019 https://www3.weforum.org/docs/WEF_TheGlobalCompetitivenessReport2019.pdf


Armenia
Azerbaijan
Georgia
Road connectivity
100
90
80
70
60
50
40
30
20
10
0
Quality of road infrastructure
Railroad density
Efficiency of train services
Airport connectivity
Efficiency of air transport services
Access to seaport services
Electrification rate
Electric power transmission and distribution losses
Exposure to unsafe drinking water
Reliability of water supply

III. Current State of Green Finance in Armenia

Finance and Armenia's NDC Partnership Plan

On 22 April 2021, the Government of the Republic of Armenia approved the Nationally Determined Contributions (NDC) of Armenia for 2021-2030 under the Paris Agreement, by which the Government declared its commitment to reduce greenhouse gas (GHG) emissions by 40% compared with base year 1990 by 2030.

The NDC Implementation Plan is currently being developed under the UNDP EU4Climate regional project. It will outline the approaches of the Government of Armenia towards the implementation of the NDC 2021-2030. It includes the identification of gaps, tasks and institutional development for the successful implementation of the NDC, along with its monitoring, evaluation, and periodic revisions.

The approval of the NDC implementation plan, expected in Q3 or latest Q4 2022, will provide the legal basis necessary for the implementation of the NDC. The plan aims to include several legal and institutional actions and effective funding mechanisms to ensure that the country fulfils the commitments it has set under the NDC.

The financing needs assessment is part of the NDC Financial Strategy and Investment Plan, also being developed the framework of the UNDP EU4Climate project. The document will identify the list of measures, projects and respective potential sources of funding and financial resources required to meet the NDC target.

Armenia's Potential for Green Finance

<u>Sectoral investment needs</u>

Strategic action plans in relevant areas need to be developed, funding sources and tools should be identified for implementation of these actions; step-by-step introduction of public expenditure and institutional scrutiny system to address climate change issues need to be implemented.

The introduction of new financial mechanisms contributing to and promoting public-private, state-community partnerships in the newly developed National Energy Efficiency Program, as well as in agricultural waste management, forested areas expansion and sustainable land management programs is essential but will also require training and knowledge transfer. To ensure the availability of basic data at sector- and project-level this must also include the development of energy efficiency standards and policy and regulatory mechanisms to ensure their application in the industry, commercial and public sectors, as well as the introduction of comprehensive but manageable monitoring, evaluation and reporting mechanisms for mitigation programs.

In the **agriculture sector**, several measures are identified for the agriculture sector in the NDC. It states the importance of improved nitrogen fertilizer management, the development of organic farming and the sustainable intensification of animal breeding. Climate finance for the agricultural sector Armenia is expected to support GHG reduction by promoting biogas and soil restoration with carbon capture. Climate finance for adaptation highlights the potential for investment in better water management in combination with improved irrigation systems. At the beginning of 2019, the Government of the Republic of Armenia approved a list of agricultural assistance programs with defined financial instruments.

While climate change and climate impacts are not explicitly mentioned, several actions are highly relevant to increasing the sector's resilience to climate change:

- Interest rate subsidies to
    - support the modernisation of irrigation systems and water efficiency;
    - Procurement of anti-hail nets to prevent damage from extreme weather events;
    - Crop variation to incentivize intensification and modernisation of fruit growing, berries; and
- Investment in irrigation system restoration and improvements of water management.

The key policy framework defining the priorities of Armenia's **energy sector** comprises three major strategies. First, it is the Government Programme for 2021-2026 that stipulates the general approaches and targets, as well as the "Republic of Armenia's Energy Sector Development Strategic Programme to 2040" and the "2022-2030 Energy Savings and Renewable Energy Programme". The latter two provide operational objectives and an implementation roadmap. These policy documents outline the vision and priority intervention areas for increasing country's energy security and achievement of the overall goal to become carbon neutral economy by the mid of century (NDC) as summarized below:

- **Maximize usage of renewable energy potential by 2030**

- Achieve 1,000 MW of installed capacity (15% of total generation volume) of industrial-scale solar PV plants
- Explore potential for building 500 MW of wind capacity
- Balance the supply and mitigate negative effects on the distribution network through building battery storage system of 300MW (1,200MWh) capacity.

- **Extending service lifetime of Armenia Nuclear Power Station's second unit**

  After 2026 lifetime extension for the ANPP is on the main priorities of the Armenian Government and the construction of a new nuclear power plant upon the expiration of the term is the main objective. The USD330 mln investment program focused on the ANPP Unit 2 design lifetime extension will be completed by 2023.

- **North-South Road corridor construction program**

  The full implementation of the program is expected to lead to more efficient transport through Armenia and to make Armenia a key route for long-distance trade between India, the Arab Gulf and Europe.

- **Maximize utilization of energy efficiency potential**

  To achieve energy savings equivalent to 20% of total energy consumption by 2030. The following key sectors are prioritized due to their energy intensity and importance for energy demand (see Figure X above) within the framework of the Programme:

  - Households (32% increase in energy efficiency)
  - Transport (36%) and
  - Public schools (15%).

- **Regional Power Connections - Armenia-Iran and Armenia-Georgia**

  The construction of two power transmission lines, as well as respective infrastructure is expected to play a decisive role in terms of having power system of regional significance. The 400 kV Iran Armenia double-circuit overhead transmission line will increase the electricity exchange capacity between both countries' power systems from 350 MW to 1,200 MW, allowing interseasonal trade. To the north, the "Caucasus Electricity Transmission Network" is aimed at connection of the Armenian and Georgian power systems by a 500 kV overhead transmission line enhancing the reliability of the two countries' systems.

- **Liberalization of wholesale market for electricity trade**

  The Armenian power market is dominated by the former monopolist and its associated companies. Liberalizing it is a pre-requisite for increased power trading with Georgia and Iran, but also to enable small-scale and independent renewable power production. In the first quarter of 2022, following commitments of Armenian Government to abolish the current monopoly of the Electric Networks of Armenia corporation (ENA) in power distribution and

opening the market to six companies which have received the required licenses to purchase electricity from producers and sell to end consumers (at this stage corporate consumers only). Despite continuing market barriers this reform effort is expected to gradually decrease electricity tariffs by spurring competition.

In the **infrastructure sector**, a range of investments are planned. On 15 April 2022, the Government of Armenia approved the "State Support Programme for Energy Efficient Renovation of Apartments and Dwelling Houses" that is planned to be operationalized by the Urban Development Committee and the Central Bank of Armenia. The strategy plans for state subsidies to be allocated for energy efficiency upgrades achieving at least 20-30% increases in energy efficiency. The instrument are AMD-denominated loans of up to USD 20,000 equivalent with a subsidized interest rate between 0 to 5% per annum, depending on the region where the project is planned.

To respond to these challenges, Armenia needs to invest USD 450-600 million annually into economic infrastructure, including energy, transportation, water supply and sanitation and telecommunications.[8] In its Strategic Programme of Prospective Development (2014-2025), the Government set annual infrastructure investment targets by sector. Jointly, these targets amount to about USD 340-350 million per year, but this remains below the estimated annual needs.

- 1.4-1.5% of GDP in transport (85% of which would be dedicated to the road network and 15% to other projects)
- 0.3% of GDP in energy
- 0.3% of GDP in irrigation and
- 0.4% of GDP in drinking water systems.

The OECD's project database tracks 34 major infrastructure projects planned and under construction in Armenia with a cumulative value of USD 13.9 billion. By value, energy projects account for the largest share (51%, USD 7.2 billion), closely followed by the transport sector (43%, USD 5.9 billion). By comparison, industry and mining projects (USD 395 million) and water projects (USD 409 million) represent much smaller shares of total investment in Armenia's infrastructure (3% each).

There is a strong link between finance, digitalization, and the green recovery. Armenia's information and communication technology (ICT) industry is among the few sectors of the economy that did not shrink during the COVID-19 pandemic in 2020. Its growth remained positive but slowed from 11.8% a year earlier to 2.8% as expansion in ICT services decelerated from 10.2% in 2019 to 8.1%. The COVID-19 pandemic has thus helped to highlight the strategic importance of transforming Armenia into a digitalized economy with the potential to produce innovative goods and services. Such a transformation would help to restore and sustain economic growth, generate highly productive and well-paid jobs, and improve social well-being. In the long run, the use of digital technology would build resilience, ensure business continuity, and boost productivity and inclusion. It would also contribute to reducing environmental impacts, compared to growing the industrial sector.

The pandemic has also challenged the government to find innovative ways to make the public sector more efficient and effective. An e-government survey conducted by the United Nations in 2020 ranked Armenia among the countries with relatively high e-government development, at 68 of 193 countries surveyed and with more than 20 public services in online operation. Nevertheless, it remains a challenge to address the gap in online service utilization, accelerate the pace and scope of digital public services, and achieve full digitization of services. To help firms further digitize internal processes, boost productivity, and access new markets, the government will have to enact a favorable legislative framework to generate an enabling digital business climate for start-ups, offering support for digitization, research and development, and innovation. This should go alongside attempts to open further the financial markets to increase access and their efficiency, thereby reducing transaction cost and potentially interest rates and the cost of borrowing.

At the same time, further efforts are required to use the natural potential for renewables to ensure that the economic recovery from the pandemic and the 44-day war will be green. Favorable natural conditions for renewables, paired with a conducive regulatory environment, could attract foreign direct investment in this area. This is even more important, bearing in mind Armenia's high level of import dependence on fossil fuels and the need to maintain competitiveness. Also, the authorities should prioritize and implement efficiency-enhancing infrastructure investment, while ensuring fiscal discipline and keeping public debt within manageable levels.

Carbon Finance

Armenia does at present not have an operational carbon pricing mechanism. An initial study is planned or has concluded, organised by UNDP.18 It aimed to set out options for carbon pricing. At the same time, IEA in its 2022 Energy Policy Review of Armenia noted that "*With the European Commission's proposal to introduce a carbon border adjustment mechanism, the government of Armenia is assessing the implications for the country's exporting industries and exploring policy options for a carbon-pricing or emissions trading system. Aside from facilitating future trade with the EU, the introduction of such a mechanism could prove a significant incentive for increased energy efficiency in energy-intensive industries.*"19

Carbon pricing, even if only applied to major emitters, could generate a substantial drive for decarbonisation through supply-chain effects that move the impact of the pricing scheme beyond these emitters also to smaller companies. Furthermore, exposure to the planned EU Carbon Border Adjustment Mechanism20 will further drive decarbonisation of the electricity sector in Armenia. This is likely to spur investment in green technologies and low-carbon supply options.

18 https://jobs.undp.org/cj_view_job.cfm?cur_job_id=102572
19 https://iea.blob.core.windows.net/assets/8328cc7c-e65e-4df1-a96f-514fdd0ac31e/Armenia2022EnergyPolicyReview.pdf
20 https://www.consilium.europa.eu/en/press/press-releases/2022/03/15/carbon-border-adjustment-mechanism-cbam-council-agrees-its-negotiating-mandate/

On the government budget side, carbon revenue from a pricing scheme could be recycled to support new financial instruments for the further scaling up of green finance in Armenia, e.g. by providing a revenue stream for a dedicated fund.

Armenia's key policies and programmes

Long-term low emission development

In early 2022 UNDP Armenia commissioned the development of the "Long-Term Low-Emission Development Strategy for the Republic of Armenia" (LT-LEDS). The LEDS is expected to prioritize options for climate change mitigation; whilst focusing also on the economic and social development impacts of mitigation actions. The Report is planned to be finalized by the end of 2022. More specifically it will:

- Link the LT-LEDS to national climate change policy, national development plans and sectoral planning processes;
- Engage stakeholders across the economy to enhance buy-in and ownership of climate mitigation strategies; and
- Link financial, technological and capacity-building needs that are required for the LT-LEDS to be implemented.

Agriculture

In accordance with the "Strategy of the main directions ensuring economic development in agricultural sector of the Republic of Armenia for 2020-2030" the core of the revised agricultural policy is built around the modernisation of agriculture in Armenia, including:

- Increase of agrarian efficiency
- Increase of food security
- Introduction of modern technologies
- Increase of export volumes
- Growth of profitability of all entities engaged in the entire value chain of agriculture - small households, farming cooperatives, processors, and exporters.

The Government has accordingly prioritized cooperation between education, scientific, research, and industrial sectors, which is expected to support the introduction of new technologies and expand non-agricultural activities in rural communities. The Government Programme for 2021 – 2026, along

with further elaboration these priorities, commits to promote the large-scale implementation of energy efficiency and energy saving measures in the agricultural sector, taking into consideration the requirements of the "Armenia European Union Comprehensive and Enhanced Partnership Agreement".

Renewable energy and energy efficiency policy framework

Through its NDC document for 2022-2030, Armenia outlined the development of power generation from renewable resources and energy efficiency as a key priority for the country's energy security and a key driver of low carbon development. It reaffirmed the commitment to double the share of renewables in power generation to at least 15 per cent in 2030 in power generation mix, increasing clean energy production and energy security simultaneously. At the same time, under the Government Programme 2021 – 2026, provisions of the EU-Armenia Comprehensive and Enhanced Partnership Agreement Roadmap defined 34 actions on energy efficiency, renewable energy, and energy security.

The Armenian government is actively pursuing renewable energy investments through Public-Private Partnership (PPP) agreements as the chosen model, with the Government planning to conclude PPP agreements for utility scale generation construction by means of attracting investors exclusively on a competitive basis, where their access to the electricity market cannot be granted without additional guarantees from the state.

Increasing energy efficiency is another important layer of the Government's policy to boost clean energy potential of the country. The average energy efficiency potential for current technologies amounts to 30% - 40% for buildings. The average cost per unit of energy conserved in buildings is 1 to 4 US cents per kWh meanwhile the average cost of energy generated by the Armenian power system is about 5 US cents, which makes energy efficiency upgrades by means of effective thermal insulation (per KW) 2-3 time cheaper than the construction of production capacities covering this demand. Along with the improving energy efficiency through insulation, upgrade of heating and cooling systems, and incentivizing efficient consumer behavior in this sector will further extend the saving potential to about 60%. Appropriate financial instruments are in place for these measures.

Infrastructure – E-mobility

Promotion of electric mobility is among more recent priorities of the Armenian Government. This lifted VAT on electric vehicles and agreement was reached within the Eurasian Economic Union to exempt these vehicles from custom duties. In Armenia, annual import quotas for the years 2022 and 2023 are established at the level of 7,000 and 8,000 units. With GEF financing, the Government also plans to implement a demonstration project under which part of the government fleet will be electrified.

The "Programme and Action Plan for the period of 2022-2024 aimed at implementation of the first phase of activities of the "2022-2030 Energy Savings and Renewable Energy Programme"

prioritizes development of a promotion concept for electric vehicles in Armenia, including the introduction and expansion of the charging network.

Green finance in Armenia

Survey Information from "Scaling up green finance practices in Armenia"[21]

The major share of "green finance" provided to clients in Armenia at this time through the private banking sector comes from Development Finance Institutions (DFIs), and in some cases is blended with the financial intuition's own financial resources. These are usually advanced to clients of the institutions through credit lines that target energy efficiency upgrades of SMEs and renewable energy solutions, increasingly in the form of solar roof top installations and industrial scale PV plants. Some financial instruments targeting greenhouses and high value agriculture solutions are also available.

Depending on the financing source, different eligibility requirements apply, and these can be divided in two separate groups:

- DFI-provided loans must comply with the conditions imposed by the funding provider of the facilities supported, and typically include:
    - Minimum 20% increase in energy efficiency; or
    - Industrial scale solar PV stations; or
    - Renewable energy solutions for SMEs and households; or
    - Agriculture (greenhouses and orchards);
- Internal resources are not driven by formal eligibility requirements but are mainly renewable energy finance for industrial scale solar PV stations, SHPPs, wind farms.

Pricing of resources received from DFIs can be considerably more advantageous in AMD, compared to normal bank lending, while tenors usually are much shorter. Specifically, for financial resources received from IFIs, including those blended with own resources, the average conditions in 2020 of the proposed financial instruments for final borrowers are set out below:

- In AMD – from 7.5-10.5 % annually, with maturity of 12-60 months (in rare cases up to 120 months);
- In USD – from 8-11% annually, with maturity of 48-120 months.

By comparison, for financial products from own resources the conditions are usually as follows:

[21] Final Report – GCF Readiness Project "Scaling up green finance practices in the Republic of Armenia", 13/11/20

- In AMD – from 11-14 % annually, with maturity up to 144 months;
- In USD – from 8-11% annually, with maturity up to 120 months.

In terms of raising funding, only one out of 21 banks and non-banking financing institutions that responded to the survey is seriously considering green bonds as a source of funding. This was initially planned for an issue by the end of 2020 but did not happen until March 2022[22]. In the absence of a national certification and tracking system, Ameriabank used an institutional Green Bonds framework to give its investors comfort about the use of proceeds.[23]

Given that this was the first green bond in Armenia, with a face value of USD8 million and AMD 3 billion, debt remains the main type of instrument utilized to raise green finance, and only one FI has noted using mezzanine finance instruments, which are quite usual ways of financing renewable energy installations in international markets. This indicates that further innovation in finance could lead to unlocking a bigger market. Straightforward debt has the drawback that it is not an efficient method of raising finance, and where the local FIs rely on the DFIs, it leaves them exposed to foreign exchange risk.

Role and impact of DFIs

As noted above, DFIs have been critical partners in enabling the Armenian financial institutions to move towards green lending, by creating a supply of funds with a dedicated use of proceeds to stimulate the market for green lending. They have done this also by combining their own funds with those of climate funds such as the GCF to enhance their impact by reducing borrowing cost.[24] While this approach has worked, it is by definition limited and driven by the rules and procedures of the DFI in question. It does for example not normally link to national inventories or GHG tracking and MRV systems.

[22] https://arka.am/en/news/business/ameriabank_is_the_first_in_armenia_to_place_green_bonds_via_public_offering_/
[23] https://ir.ameriabank.am/docs/default-source/default-document-library/gbf_ameriabank.pdf
[24] https://www.ebrd.com/work-with-us/projects/psd/52441.html

Barriers to Green Finance

Macroeconomic Barriers

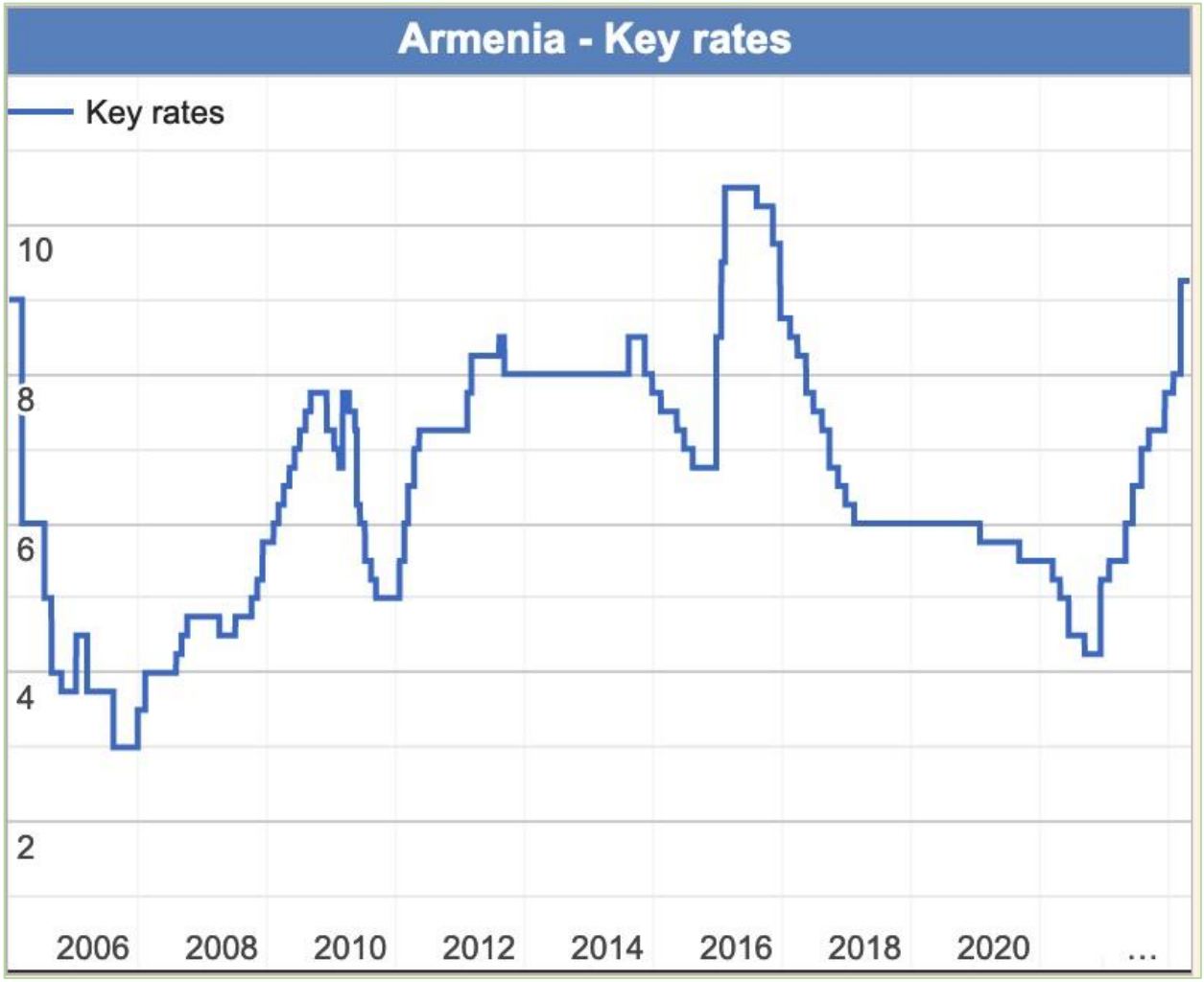
Armenia suffers from a lack of long-term funding required for capital projects, high interest rates and foreign exchange volatility, exacerbated by geopolitical and economic issues. These are likely to counteract any domestic policy action and continued increase in the competitiveness of green solutions, at least for the near-term future. As such, even if the financial barriers outlined below can be overcome, it is likely that work on creating an enabling environment by promoting green solutions through education, marketing, capacity building, as well as supportive policy and economic measures will be required for increased interest in these solutions.

There are also issues with the form of credit typically available in Armenia. Armenian banks do not typically issue long-term funding to their clients, except for some major corporates. While long-term funding maybe available to larger borrowers internationally, it is likely expensive and provided in foreign currency, exposing clients with local revenue streams to substantial foreign exchange risk. Underlying the lack of scaled-up investment is also an issue of limited awareness and access to finance in the regions outside Yerevan.

In terms of the macro environment, Armenia's interest rates have been volatile over the last decade, and rapidly increased in the wake of the 44-days war in 2021. The CBA rate stands at 9.25%, implying rates of up to 15% for small businesses. At this level, investment in long-payback capital projects such as power or infrastructure assets is likely uneconomical without correspondingly high-income streams. This exposes investors to substantial risk over the lifetime of their investments. Government, USD-denominated bonds are also being issued at high rates, of 7.25% in March 2022[25]. While the interest rate is more acceptable on these, they expose the government of Armenia to foreign exchange risk, which is difficult if not impossible to manage over the long term in the current geopolitical environment.

Figure 6: Central Bank Rates in Armenia, 2006 to 2022 [26]

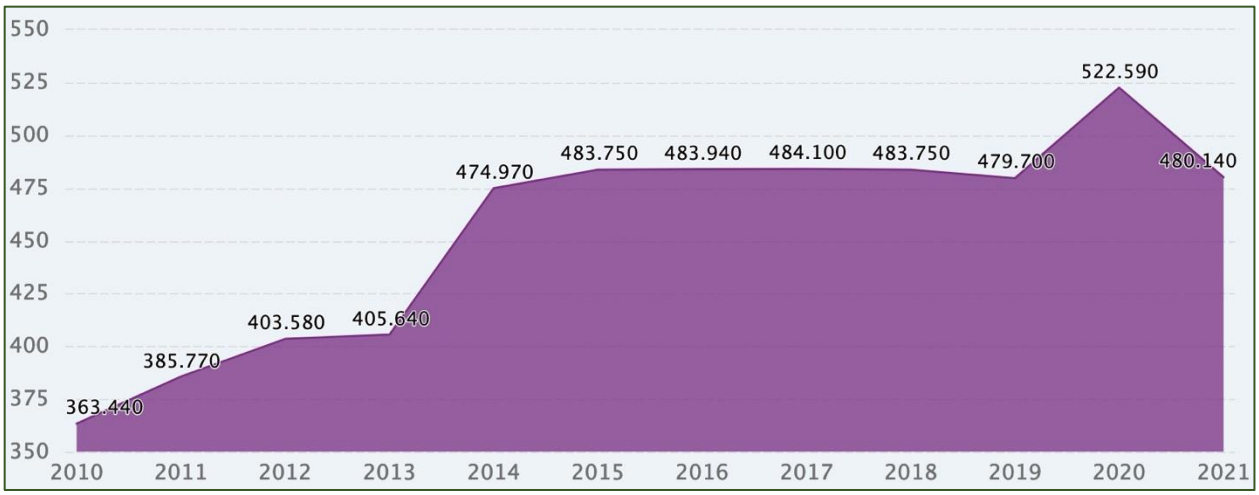
[25] https://www.armbanks.am/en/2022/03/21/138826/
[26] https://countryeconomy.com/key-rates/armenia



At the same time, providers of long-term, patient capital such as pension funds, have not become active in the region, or indeed in the space of green finance, due to complexity of structuring operations, lack of pipeline in critical sectors, real and perceived risk, and lack of internal capacity. It is however possible for Armenia to interest such capital providers by issuing substantial tickets in the form of bonds, if e.g., a development bank such as the EBRD or EIB were to participate in the investment, thereby reassuring more risk-averse investors. The volatility of the AMD is playing a major role in this, as it increases the foreign exchange risk within operations. Finding solutions through innovative financial instruments to cover this risk may become a prerequisite for unlocking funding from large-scale capital providers, such as major infrastructure or pension funds.

Figure 7: AMD/USD exchange rate, December 2010 to December 2021[27]

[27] https://www.ceicdata.com/en/armenia/foreign-exchange-rates-annual/am-official-rate-end-of-period-national-currency-per-usd



Microeconomic barriers to Green Finance

Several barriers mitigate against rapid upscaling of green finance in Armenia. Most importantly, there currently is no regulatory framework in place that governs the "green finance" activities of the local banks and non-banking financial institutions in Armenia, and as such there is no unified approach to ESG investing in Armenia either. The majority of Banks in Armenia do not have an internal documented methodology which would allow them to consistently define the qualification standards for "green finance" instrument which describes the necessary procedures to assess and track this. The absence of such documentation effectively prevents these institutions from raising green finance in international financial markets, such as green bonds. Instead, in a survey conducted for the project in 2020, most of survey participants reported that they use specific provisions suggested by IFIs through respective on-lending facilities. Among financial institutions, banks lead as providers of green financing, 80% of businesses and 2/3rds of households rely on banks for green finance, but Universal Credit Organizations play a major role in providing funding for the household sector.

Addressing this critical shortcoming will require legislative and regulatory action. The Armenian government and the financial regulator have a key role to play in delivering an enhanced green financial system that also accounts for 'transition risk'[28], related to the move to a greener and more sustainable real economy, in which sectors and projects dependent on e.g. heavy carbon-emissions fuels or supply chains are exposed to market risk from the transition. This includes setting the parameters for investment, accessing climate finance through donors and DFIs, and the establishment of a robust MRV system in which green finance can be tracked and reported.

There is also only limited internal capacity for green finance in Armenian banks and non-banking financial institutions. In the same survey, out of 20 Banks and non-banking financial institutions, 30% noted that their staff has some basic technical knowledge about renewable and energy efficiency

[28] https://www.gresb.com/nl-en/products/transition-risk-tool/

technologies gained during participation to respective trainings/seminars organized by partner IFIs and consulting companies within the framework of respective lending programs, and only 10% reported that they had a specially assigned coordinator that provides mentorship to the credit department's staff on the issues related to the "green finance" products. Finally, only 5% or 1 respondent reported that they had a dedicated department within the structure of their organization that is exclusively dealing with "green finance" products.

Armenia's climate and investment challenges

Climate Capacity Barriers

Cross-cutting capacity challenges affect both mitigation and adaptation, and there is a wide need to increase research and understanding in both adaptation and mitigation to ensure Armenia is well prepared for the challenges of climate change and that the next generation of leaders, both public and private sector, fully understand the climate-related challenges faced by Armenia.

In this context it will be necessary to increase state financing targeted at research and development in climate-related priority areas of science and technology development by allocating budget towards climate change research and forecasting activities. It will also be necessary to organize training courses for technical staff employed in specialized institutions, and to develop educational programs for climate change specialists at university level. This should include comprehensive climate change and disaster risk management-related topics to be covered in public education curricula, and a train-the-trainers approach to organizing teacher training.

In parallel it will be necessary to elaborate comprehensive policies for the development, advancement and transfer and adoption of innovations and technologies that will help to manage climate change impacts and reduce Armenia's contribution to climate change. This will include the identification of specific benefits for innovative companies in this field, such as the introduction of financial support mechanisms for start-up organizations offering innovative solutions in the field of climate change adaptation and mitigation, as well as the promotion of private investments to apply these.

Funds for these measures will need to come from government budgets, as experience elsewhere has shown that the private sector in developing and transition economies does not adequately respond to this challenge.

On the **climate mitigation** side, Armenia has substantial potential for achieving emissions reductions, but to achieve these will need to strengthen the underlying infrastructure of the national systems. In this regard, Armenia's National Communication to UNFCCC Secretariat N4, has identified certain limitations in terms of national capacities, including constraints, gaps, as well as needs under the new international requirements set out for implementation under the Convention, which, if

adequately prioritized and addressed, will contribute to improvement of national capacities to meet the country's commitments under UNFCCC and enhance the national capacities to address the challenges posed by climate change. The successful development of the potential for reducing GHG emissions in all sectors of the economy requires improving the analytical capacity by building it across sectors and actors in relation to economic, environmental, social, and financial benefits, opportunities, barriers and risks.

As Armenia is interested in participating in the Art. 6 trading mechanisms, which could provide an important source of finance for climate mitigation projects, being able to robustly track emissions data both at national and at project level will become critical, and these tracking systems need to be linked. To ensure transparency, consistent comparability, comprehensiveness and accuracy of the GHG inventory, it is therefore essential to be able to identify and allocate the appropriate functions in the procedures and processes of relevant agencies, ensure provision of continuous training for development of national capacities, adoption of data collection formats that can also be used by non-government project developers.

It will also be necessary to develop national factors for all carbon sources to link them to the application of the high-tier methodology for GHG inventory. This includes robust baselines. For example, for the improvement of the GHG emissions and removals inventory from the "Forestry and Other Land Use" sub-sector, an important precondition is the availability of a comprehensive forest inventory and the overall improvement of land use data collection and analysis system.

As much of this is related to the creation of fundamental infrastructure and processes of the state, public funding will be required, either from the state budget or from donor support.

Armenia has worked substantively on generating a better understanding of the **adaptation and climate resilience** challenges faced by the country. Throughout the development process for the "National Adaptation Plan to Advance Medium- and Long-Term Adaptation Planning in Armenia" under an UNDP-GCF project, and in several stakeholder consultations and discussions held since the plan's approval, it was possible to identify cross-sectoral national adaptation needs and barriers across all administrative levels. Addressing these needs will help to increase adaptive capacities and reduce vulnerabilities in all or most sectors.

Three key types of barriers to enhanced and effective adaptation action in Armenia have been identified:

- Governance and institutional barriers that limit adaptive capacity by exacerbating drivers of vulnerability, as well as impeding action, decision-making, and the flow of resources to where they are needed. Evident shortcomings exist in this regard in terms of institutional coordination of information collection, analysis, management and provision of data and information. Adaptation issues are not properly integrated in the functions of key public administration bodies. In addition, coordination between and within sectors is not at satisfactory level. Among the key barriers are insufficient coordination within the Inter-Agency Coordinating Council for the Fulfillment of Requirements and Provisions of the UN Framework Convention on Climate Change (the Council) and the information flows to and

within the Council. These are further exacerbated by climate change driven challenges that are not yet accounted for in national planning processes, again highlighting the existing weaknesses of the governance structures and institutional mechanisms.

- Information, knowledge, and technology barriers persist that inhibit the efficiency of adaptation by hindering understanding of the need and the technical potential for adaptation, the extent to which adaptation must occur, what needs to adapt, how adaptation can occur, and its associated outcomes and impacts. Tackling adaptation knowledge deficits and communication problems is paramount to improving climate resilience. The key issue within this broad umbrella is insufficient access to and availability of existing information across all administrative levels. This includes information such as climate- and hazard-related data, climate impact data, as well as socioeconomic data and assessments, and linkages to Disaster Risk Reduction measures and systems. There is a dearth of locally relevant information for regional development planners and communities, which is needed to enhance understanding of risks within relevant geographical contexts. The lack of information availability also impacts climate communication and awareness within government, academia, and the wider public, which in turn further hinders adaptive action, as well as motivation and facilitation of engagement on adaptation. One of the key barriers to accessibility of information, communication and awareness raising is the insufficient level of application of modern technologies in climate change adaptation. Monitoring and evaluation for adaptation does not currently exist in Armenia, and it would need to be greatly improved by enhancing information-sharing arrangements, compatibility and management.

- Financial barriers directly inhibit adaptation as financial literacy, access to capital, understanding of financial risk related to adaptation and access to financial services are vital components of adaptive capacity. Increased levels of adaptation finance and investment would improve the scope of adaptation action, which is required to manage the additional risks associated with climate change. Financing of local level community adaptation action is highly dependent on the support of the national government due to a lack of local-level financing mechanisms.

- Finally, a major barrier to adaptation is the high prevalence of low incomes in Armenia, coupled with Armenia's relative remoteness from major economic hubs along with regional- and geopolitical constraints and overall low investment rates in the economy, which frustrates economic growth. The national economy is substantially comprised of climate-sensitive sectors which depend heavily on natural ecosystems and other natural resources. While potential adaptation options exist to reduce this type of vulnerability, under these national development circumstances residual vulnerability will continue to exist. Besides, the private sector is severely constrained in its ability to participate in adaptation planning and action.

Taken together, these are substantial challenges, only some of which can be addressed through private investment, while many, like the underlying infrastructure of government reporting and data collection on mitigation, require investment from government budgets to be addressed.

For an appropriate assessment of the **loss and damage** suffered by Armenia due to climate change impacts, it is essential to upgrade the systemic observations, including hydro-meteorological observations networks, it is essential to ensure introduction of modern equipment and technologies for improvement of hydro-meteorological services and data quality, installation of new hydro-logical monitoring observation networks, introduction of centralized and automated monitoring system, creation of online monitoring and data transfer system, improvement of climate change global and regional model results, reduction of uncertainties, capacity building for early projection of HHP, development of early warning and alerting system for climate risks, as well as improvement of mechanisms and improved technical capabilities for information exchange.

For assessing economic losses and damages, it is important to ensure systematic data collection and mapping of damages in the vulnerable sectors caused by natural disasters due to HHP, according to an established methodology for data collection and damage assessment, as well as it is desirable to introduce physical and numerical models for long-term climate change impacts assessment. Like the challenges outlined on mitigation and adaptation, these are government tasks that will require budgetary finance.

Specific financing needs

There are different calculations on how much Armenia needs to finance to achieve the targets of its climate agenda by 2030. Among them, a study[29] conducted by the OECD shows that Armenia will need to invest at least USD 5.7 billion, plus another USD 3.5 bln in case it wanted to construct a new nuclear power station with an installed capacity equivalent to 600 MW, in gross fixed assets to reach its climate action targets by 2030. Out of USD 5.7 bln cited in the report, the following table shows the breakdown of first-tier priority projects in the energy sector are based on the review of different strategies and interviews with experts:

Table 4: Energy and Infrastructure Investment Needs in Armenia, 2022-2030

Finance Demand	Volume	Finance Supply	Volume
Construction of 1,050 MW solar PV	750 million	MDBs/DFIs	1,500 million
Construction of 500 MW of WPP	750 million	Private Sector	750 million
Modernization of Electric Networks of Armenia	450 million	Climate Funds	200 million

[29] https://www.oecd-ilibrary.org/sites/50079b68-en/index.html?itemId=/content/component/50079b68-en

Construction of a pumped storage plant	500 million	Green/ Sustainability Bonds	500 million
Advancing e-mobility	500 million		
Total	**2,950 million**		**2,950 million**

The figures in Table 4 above are calculated based on interview results with MDB officials, private sector representatives, commercial banks and sectorial experts. It is important to note that they would comprise a substantial upscaling of investment. In comparison, during the period from 2007 to 2019 USD2.5 bln of investments in Armenia's private sector were financed through international, private sector investments and public borrowings. Desk research of available documents and validation discussions with the representatives of the MDBs suggests that financing potential from World Bank may vary from 150 to 500 mln USD during the period, while EBRD will be able to provide financing around 80-100 mln USD in average annually. As such, it is difficult to see how the estimated USD1.5 billion from MDBs and DFIs will be achievable.

Raising USD 500 million from new bonds for investments (rather than repaying maturing debt) would add about 3.5% of GDP equivalent to Armenia's debt burden. In a situation where Armenia's external debt is already high due to the impact of the Covid-19 pandemic, it is also difficult to see how this can be managed.

Given Armenia's commitments under the Paris Agreement, and the government's planning and stated support for increasing the share of renewable power generation, a comprehensive review of the supporting regime for renewable power would be helpful to ensure that these targets can be achieved. Beyond delivering the commitments, this will have the benefit of diversifying the power generation pool of Armenia, thereby reducing risk, while also increasing the share of domestically produced power, benefitting the current account balance by reducing the need for and dependence on energy imports. From a security of supply perspective, multiple smaller generation sites also increase redundancy in the case of adverse external impacts on the power system.

Green Finance Partners

Despite the challenges of being able to raise and absorb the funds needed, and while the scale of effort maybe beyond Armenia's capabilities at present, the breakdown of funding needs and sources by the OECD points towards three key funding elements:

- Development partners in the form of MDBs, DFIs.
- The private sector.
- Climate Funds
- The public sector through the issuance of dedicated bonds.

Development Finance Institutions

Partnerships with DFIs, in particular MDBs is a critical pillar of the Armenian Government's effort to channel concessional funding for financing green finance projects. Thus, during the last 5 years approximately USD 100 mln were channeled from DFIs through Armenian commercial banks in the form of loans to the SMEs and households aimed at increasing energy efficiency and introducing of renewable energy solutions. The key providers were the EBRD, the Green for Growth Fund (GGF), the French Development Agency AFD, the WBG and Germany's KfW. In accordance with the "2019 Joint Report on Multilateral Development Banks' Climate Finance"[30] Armenia has received 107 mln USD in 2019, compared with 45 and 132 mln USD in 2018 and 2017 respectively.

DFIs, as noted above, have played a key role in making funding available to Armenian banks for green finance credit lines. More recently, they have also participated in critical green infrastructure projects, such as the metro in Yerevan, the Masrik-1 solar PV power plant, and the modernisation of road infrastructure.

Private Sector

Commercial banks play a critical role in Armenia's finance sector, where they are responsible for a large share of total lending. Non-banking financial institutions called Universal Credit Organizations (UCO) are serving a smaller part of the market, but a substantial part of the population, by providing access to finance that may not be available through banks. As such, this sector is playing a critical role in enabling individuals and businesses to access green finance.

International private sector actors are ready to invest equity and take on debt in Armenia in support of the green agenda, as most recently seen in the Masrik-1 project, where a range of bidders participated in the auction for solar capacity. Given the favorable international framework, this can be expected to continue.

More novel forms of private sector action, such as crowdfunding or venture capital funding, have thus far not played a significant role in Armenia's green finance development.

Climate Funds

Armenia has access to the resources of all climate funds, most importantly the GCF, but also the CIFs, the GEF, the Adaptation Fund, and bilateral programmes such as the NAMA Facility. It has been able to access a few projects through these, supporting both investment and capacity-building.

[30] https://publications.iadb.org/en/2019-joint-report-on-multilateral-development-banks-climate-finance

The GEF has been instrumental in supporting the development of the underlying infrastructure for reporting on climate issues, and national-level planning.

Most important amongst the climate funds is the Green Climate Fund. Since 2016, Armenia has established a close partnership with the Green Climate Fund, with the Ministry of Environment serving as Designated National Authority. Armenia's access to GCF funding is available through three different channels at present:

- **The Readiness and Preparatory Support Grant Program**, with annual cap at USD 1 million is aimed at capacity enhancement of NDA and other national stakeholders, as well as the development of the necessary strategic policy framework in Armenia.
- **International/regional accredited entities**, typically multilateral development banks and international organizations can access GCF finance to co-fund their projects in Armenia. Of these, 13 have operations in Armenia.
- **Direct access (national) entities**. There are four national entities in Armenia at present, one of which is fully accredited and two are in the process of accreditation.
    - The "Environmental Project Implementation Unit" is a State Non-Commercial Organization (EPIU) of Armenia and was accredited with the GCF on 28 February 2019;
    - The national "Armenia Renewable Resources and Energy Efficiency Fund" is in the process of accreditation.
    - Two commercial banks, "AmeriaBank" CJSC and "ArmSwissBank" CJSC, are also in the process of accreditation. They received nomination letters from the NDA during the first quarter of 2020.

The Green Climate Fund provides its financial support through a range of instruments, including grants, concessional loans, equity and risk guarantees to the projects that have been:

- Identified through "GCF – Armenia Country Cooperation Programme" – multi-year document linked with GCF replenishment rounds defining key priority sectors, projects and consultation framework.
- Nominated by the NDA – non-objection letter is required prior to commencement of negotiations;
- Corresponds to the GCF 8 Impact Areas and investment criteria – with Additionality concept as the most important one (leveraging ratio of funds requested).

To date, five investment projects, of which three cover Armenia along with other countries have been approved by the Green Climate Fund Board for financing with a total contribution from the GCF of up to USD 116.8 mln. The small number of country-driven projects in Armenia are due to the lack of nationally accredited entities and the slow progress with the accreditation of commercial banks

who would be capable to nominate big projects, like what happened in Mongolia, and a lack of close coordination with internationally accredited entities.

Box 2: Armenia's GCF Country Programme

The first draft of the "GCF – Armenia Country Cooperation Program", which was structured in a participatory and stakeholder-driven process, was designed within the framework of the Readiness and Preparatory Support Program "NDA Strengthening and Country Programming support for Armenia Ministry of Nature Protection", which is being implemented by the "Environmental Project Implementation Unit" State Entity. The program contains a comprehensive list of priority sectors and a list of five priority projects, three of which relate to green energy, with a total budget around USD 120 mln. Presently, the Country Program has not been approved and it is therefore not considered likely that the projects will be financed during the current GCF replenishment phase (GCF-1), which ends in 2023.

One of the most valuable and critical parts of the current draft of the Country Program is the development of a set of priority sectors for intervention with quantified benchmarks, that have served to be further integrated into the number of Government strategies. Among the most important ones was a target to increase power generation capacity from renewables, including large hydro-power and industrial-scale solar PV stations, and advancing energy efficiency and the promotion of low carbon transport.

Armenia will need to re-design the existing Country Program to aim it at the GCF's second replenishment round, expected to run from 2024-2027, and to link it clearly with the recently adopted/initiated national strategies, inter alia the NDC, Energy Sector Strategies, and the LEDS. This will allow Armenia to fully reconsider the project pipeline, and to put emphasis on a coordinated selection of country-driven and long-term strategy linked projects.

<u>Green/Sustainability Bonds</u>

For issuers, green, social and sustainability bonds are a way to tap into fixed income investors that wish to achieve green financing impact through the bonds that they invest in. There is a pool of approximately USD100 trillion of patient private capital managed by global institutional fixed-income investors. Investors have consistently demonstrated a desire to integrate climate and sustainable investment approaches into their portfolios. As such, the issuance of Green Bonds is an opportunity that Armenia has until now not been realized at scale and issuing such bonds from both public and private issuers could support a substantial scaling up of the investments in Armenia's green and sustainable future.

IV. Armenia Green Finance Roadmap

Policy objectives of the Green Finance Roadmap

Strategic Approach to Green Development

Armenia's green finance roadmap will need to be rooted in a wider vision of the development strategy of Armenia. This will require active involvement of Armenian government authorities and closely interlink the overall development framework with sustainability and climate action. When fully implemented, the Roadmap should deliver an economy-wide improvement in the way Armenia's finance sector provides the funds that underly the continued economic success of the country. This means that the sector and government will have to:

- Integrate green finance into financing and investment policies and frameworks considering all relevant climate, environmental, social, and governance considerations;
- Reorient and increase green investment flows towards the creation of a low-carbon, climate-resilient and circular economy; and
- Enhance the understanding and cooperation between the public, financial and non-financial sectors, to create an enabling environment that will substantially scale up green finance in Armenia.

Setting the policy and regulatory framework for Green Finance

Introducing Green Finance Principles

There is no universal definition of the principles of green finance, although there are close links and overlaps between various standards that have been proposed. The International Standards Organisation (ISO) has an ongoing process to define these principles under a new standard ISO32210 to define Principles and Guidance for Sustainable Finance and ISO14100 to help organizations assess green finance projects. Once this standard is adopted, it is recommended to rely on it. In the interim, the working group under ISO/TC322 has published a helpful document[31] outlining some concepts and principles. These follow the following structure:

- **Sustainable finance** is identified as the overarching framework under which various specific financial activities take place, namely:
    - **Green finance** – financing investments that provide environmental benefits in the broader context of environmentally sustainable development. Economic activities include the financing, operation and risk management for projects in areas such as environmental protection, energy savings, clean energy, green transportation and green buildings.
    - **Climate finance** – local, national or transnational financing, drawn from public, private and alternative sources of financing, that seeks to support mitigation and adaptation actions that will address climate change.
    - **Social finance** – financing that supports actions mitigating or addressing a specific social issue and or seeking to achieve positive social outcomes especially but not exclusively for a target population(s).

While the principle of green finance to help protect the environment is helpful, it needs to be considered that it is often understood more widely, including e.g., finance that will help make communities more resilient, lead to green growth and development, is integrated with international financial markets and follows high standards of transparency and accountability.

Box 3: Mongolia's Sustainable Finance Principles[32]

The Mongolian Sustainable Finance Principles act as guiding principles to create a level playing field among economic actors through:

- The **protection** of natural environment, people and communities, and cultural heritage.

[31] https://www.sis.se/api/document/preview/80030803/
[32] https://www.un-page.org/files/public/national_sustainable_finance_roadmap_of_mongolia.pdf

- The **promotion** of green economic growth, financial inclusion, ethical finance and corporate governance, and transparency and accountability.
- The **practice** of all these principles and reporting on a regular basis on the progress.

Common framework for ESG

ISO notes in TR3220 that "there has not been a standardized approach to evaluate ESG performance of investment portfolios, although ESG ratings, benchmarks and indices are used by investor". In the absence of such a common framework, alternative approaches are likely to be required, based on the need to satisfy the requirements of funding providers in the first instance, while also aiming to link these to the national reporting frameworks. In this context, utilisation of e.g., the MDB Climate Finance Tracking Methodology[33], or the development of a Green Bonds Framework[34], are helpful.

International Initiatives

Over the last decade, several international initiatives have emerged to promote sustainable and green finance, mostly on a voluntary basis.

- The **United Nations Environment Programme Finance Initiative** (UNEP FI) is a partnership between UNEP and the global financial sector to mobilize private sector finance for sustainable development. UNEP FI supports global finance sector principles to catalyze integration of sustainability into financial market practice. It promotes industry-based principles to help create a financial sector that serves people while delivering positive impacts. UNEP FI is a network for sharing knowledge and best practice aimed to amplify the collective voice of the finance sector in policy debate, engaging policymakers, regulators and supervisors on the role of the financial sector in contributing to sustainable development. It holds global and regional roundtables to bring together partners and other stakeholders to build momentum to advance sustainable finance market practice and provide clear signals from the financial sector to policymakers on the importance of integrating Environmental, Social and Governance (ESG) issues and sustainability impacts into financial decision-making.
- The IFC-supported Sustainable Banking Network (SBN) is a knowledge and capacity-building platform of financial regulators, banking associations, and environmental regulators from emerging markets committed to developing sustainable finance frameworks based on national context and priorities, as well as international best practices. SBN's main objectives are to:

[33] https://www.eib.org/attachments/documents/mdb_idfc_mitigation_common_principles_en.pdf
[34] https://mfin.gov.rs/en/activities/the-government-adopted-the-green-bond-framework-2

- Provide technical assistance to support members in creating an enabling environment through developing and implementing national sustainable finance frameworks
- Convene a global platform for practitioners to benefit from best practices and deepen collective learning; and
- Provide capacity building and knowledge sharing, with a focus on peer-to-peer exchanges among members.

The **Climate Bonds Initiative** (CBI) is an international organization working to mobilize the USD100 trillion bond market towards climate change solutions. The investor-focused, not-for-profit Initiative promotes investment in projects and assets necessary for a rapid transition to a low carbon and climate resilient economy. The strategy is to develop a large and liquid Green and Climate Bonds Market that will help drive down the cost of capital for climate projects in developed and emerging markets; to grow aggregation mechanisms for fragmented sectors; and to support governments seeking to tap debt capital markets. The work of the Initiative is an open-source public good.

Most importantly, CBI has developed a Climate Bonds Standard and Certification Scheme designed as an easy-to-use tool for investors and governments to assist them in prioritizing investments that truly contribute to addressing climate change. The Standard is an open source for the market, based on the Climate Bonds Taxonomy, which defines investments that are part of low carbon economy. The Climate Bonds Standard is overseen by a Board representing USD32 billion of assets under management.

The **International Capital Markets Association** (ICMA) has a well-defined framework for issuing green bonds, known as the Green Bond Principles (GBP). This is e.g., underlying the 2021 Green Bond issued by the Republic of Serbia. ICMA also oversees the Social Bond Principles and Sustainability Bond Guidelines, which provide for their respective areas. Introduced in 2014, the GBP are voluntary process guidelines that recommend transparency and disclosure and promote integrity in the development of the green bond market by clarifying the approach for issuance of a green bond.

Green Finance Taxonomy and components

Within the framework of the "Scaling up Green Finance Practices in Armenia" Project, the first attempt to propose a high-level vision on the potential Green Finance Taxonomy for Armenia was made. After a review of the international regulatory framework, such as the EU Taxonomy and the Green Loan Principles and green/sustainable finance roadmaps of comparable countries (discussed in the greater details in the section X of this document), the following taxonomy matrix has been suggested:

Table 5: Green Taxonomy for Armenia by Categories, Sub-Categories and Measures

Category	Sub-Category	Measure
Energy	**Energy Production**	• Biofuels • Cogeneration • Clean Fossil Fuels • Geothermal • Hydro & Pumped Storage • Nuclear • Solar • Waste to Energy • Wind
	Energy Management & Efficiency	• Buildings • Controls • Energy Management Logistics & Support • Industrial Processes • IT Processes • Lighting • Power Storage • Smart & Efficient Grids
	Energy Equipment	• Batteries • Fuel Cells • Appliances
Environment & Agriculture	**Environmental Resources**	• Advanced & Light Materials • Key Raw Materials & Metals • Recyclable Products and Materials
	Environmental Support Services	• Environmental Consultancy • Green Finance & Investments • Smart City Design & Engineering
	Food & Agriculture	• Land Erosion • Agriculture Logistics • Food Safety • Efficient Processing and Sustainable Packaging • Sustainable Plantations • Water management and efficiency • Fertilizer Management
Infrastructure	**Transport Equipment**	• Aviation • Railways • Road Vehicles
	Transport Solutions	• Railways Operator • Road Vehicles • Video Conferencing

	Waste and Pollution Control	• Cleaner Power • Decontamination Services & Devices • Environmental Testing & Gas Sensing • Particles and Emission Reduction Devises • Recycling Equipment • Recycling Services • Waste Management
	Water Infrastructure & Technology	• Advanced Irrigation Systems & Devices • Desalination • Flood Control • Meteorological Solutions • Natural Disaster Response • Water Infrastructure • Water Treatment • Water Utilities

It is recommended to validate this approach and define qualitative/quantitative characteristics for each sector/subsector through comprehensive stakeholder consultation process, which will also be critical from the perspective of synchronizing ongoing efforts with key ministries/institutions and across the donors. Final structure of the Green Finance Taxonomy for Armenia to be approved by executive order of the Central Bank should be 3-layered document:

- **Layer 1.**

  The main categories of the Taxonomy (e.g., Energy);

- **Layer 2.**

- Sectors/subsector of the Taxonomy for investment purposes (e.g., Energy Storage);

- **Layer 3.**

  Listing of the eligible technologies (e.g., battery storage systems).

The next level below Layer 3 would be the specific project, but this is not appropriate for the Taxonomy.

- Specific project – grid-integrated storage by battery systems (for diurnal management of non-dispatchable power supply);

Implementing the Green Roadmap

Addressing Armenia's Green Finance Barriers

The Green Finance Roadmap is broken down into two phases, initial actions that help develop the framework and raise funding in the short term (to 2030), and longer-term actions that accompany these and that will provide the foundations and infrastructure for the long-term application and growth of green finance in Armenia.

- **Initial actions** are those that are required to rapidly enable the scaling of green finance in Armenia. They focus on fund-raising, the adoption of a taxonomy, and the interlinking of MRV systems to allow the impact of finance to be tracked in a more robust manner.
- **Parallel actions** are those which will be implemented over the longer term, requiring for example legislative time or longer-term adjustments in training and government process developments.

A range of barriers have also been identified in the work leading to the development of the Green Finance Roadmap. At the highest level, these can be grouped into four overarching sets of barriers that will need to be addressed through a combination of measures undertaken by the public and private sector in Armenia. The matrix in Table 6 below sets out these barriers and solutions in the form of a heatmap, where green means there is a high potential for measures to affect the barriers, yellow means there is medium potential, and orange means there is low potential for strong impact of implementing the measures. Drawing from this, the measures are broken into further detailed actions below, and grouped in measure pillars.

Table 6: Barriers and Measures to Scale up Green Finance in Armenia

Measures/ Barriers	Policy Development	Partnership Development	Harmonization and Standardization Efforts	Training
Absence of favorable policies				
Lack of green finance scale				
Absence of harmonized ESG				
Lack of capacity				

The core of the Roadmap is contained in tables 7-10 below, with Table 7 providing a high-level overview of initial and parallel actions, Table 8 providing detailed actions, timings and responsible entities, Table 9 a timeline and Table 10 a stakeholder engagement overview.

Table 7: Pillars and Actions of Armenia's Green Finance Roadmap, 2022-2030

1. Shaping a favourable policy framework	2. Scaling up green finance flows	3. Establishing an ESG Framework	4. Addressing capacity constraints
Initial Actions			
1) Establishing/ formalizing Green Finance Task Force (under CBA) 2) Development and adoption of a Green Bond framework for Armenia 3) Development and adoption of a green taxonomy 4) Development of a carbon pricing regime	1) Revision of the GCF Country Program to enable scaled-up climate finance flows 2) Development of favorable regulations for renewable energy developers and PPPs 3) Supporting the development of green projects for financing	1) Development and adoption of a harmonized ESG framework for the financial sector in Armenia 2) Establishment of ESG market standards	1) Enhance understanding of international green finance frameworks and issues in the private sector 2) Enhance structuring capacity for PPPs 3) Enhance carbon market operating capacity
Parallel Actions			
5) Creation of an integrated MRV framework linking projects to national inventory reporting 6) Strengthening of data collection to more clearly identify potential actions and vulnerabilities	4) Structured engagement with climate funds 5) Creation of a dedicated fund to support green investments 6) Deepening MDB/DFI partnerships 7) Supporting establishment of dedicated private green finance institutions (e.g., leasing companies, private equity funds, crowdfunding platforms)	3) Strengthen regulations to monitor and enforce and develop the ESG framework	4) Develop capacity for establishing and maintaining complex MRV systems in public and private sectors 5) Comprehensive ESG and gender training for public/private sector

Table 8: Pillars and Actions of the Green Finance Roadmap, Implementation Timeline and Entities

Area of Intervention	Initial action	Follow up Action	Timeline	Responsible entities
Pillar 1. – Policy Framework				
1.1 Establishing/ formalizing Green Finance Task Force (under CBA)	Executive order on formalization of the Task Force is issued by regulator	• Establishment of thematic Working Groups; • Quarterly meetings of the Task Force;	2022 for establishment in 2022	• Ministry of Finance • CBA
1.2 Development and adoption of a Green Bond framework for Armenia	Engagement with other transition economies on their experience with green bond issuance	• Adoption of best practices and implementation of lessons learnt • Definition of a Green Bond framework	2022 for issuance in 2023	• Ministry of Finance • CBA

1.3 Development and adoption of a green taxonomy	Executive order to develop taxonomy to be approved and applied by the regulator	• Identification of priority sectors for the taxonomy. • Consultation with finance and key priority sectors on taxonomy structure	2022 for implementation in 2023	• Ministry of Finance • CBA • Ministry of Environment • Line ministries (e.g., infrastructure, agriculture)
1.4 Development of a carbon pricing regime	Executive order to develop carbon pricing to be approved and applied by the relevant government department	• Identify priority sectors/emitters to come under the regime • Consultation with private sector on likely impact • Consultation with public on use of revenue generated	2023 for implementation in 2025	• Ministry of Finance • Ministry of Environment • Line ministries (e.g., infrastructure, agriculture)
1.5 Creation of an integrated MRV framework linking projects to national inventory reporting	Project launch for upgraded MRV system, also in response to UNFCCC ETF	• Consultation with private sector (finance and real) on scope of reporting • Training of MRV specialists	2022 for operationalization by 2024	• Ministry of Environment
1.6 Strengthening of data collection to more clearly identify potential actions and vulnerabilities	Establishment of clear processes under which data can be collected and communicated to direct actions.	• Consultation with private sector (finance and real) on scope of reporting • Training of MRV specialists	2023 onwards	• Ministry of Environment • Line ministries (e.g., infrastructure, agriculture)

Pillar 2. – Scaling up Green Finance Flows				
2.1 Revision of the GCF Country Program to enable scaled-up climate finance flows	Engagement with GCF CPD to revise country program in advance of GCF-2 replenishment phase	• Continued exchange with GCF and partners on potential for projects in line with Armenia's green development agenda	2022 for conclusion in 2023	• Ministry of Environment • NDA • Armenia's DAEs
2.2 Development of favorable regulations for renewable energy developers and PPPs	Market survey of developers and financing institutions to identify and prioritize barriers to renewables and green PPPs	• Implementation of a systematic process to remove barriers	2022 ongoing to 2025	• Ministry of Finance • Ministry of Energy)
2.3 Supporting the development of green projects for financing	Identification of priority projects across key sectors (energy, Infrastructure, agriculture)	• Updating on at least annual basis • Linking of project list to DFI/Climate Fund pipelines • Advancing Green Procurement Principles	2022 ongoing to 2030	• Ministry of Environment • Line ministries (e.g., infrastructure, agriculture)

		• Tracking projects against the NDC/LTS documents		
2.4 Structured engagement with climate funds	Systematically assess potential for climate fund contributions to green finance agenda in Armenia	• Identify priority projects from the roadmap and investment pipeline for support by climate funds	2022 ongoing to 2030	• Ministry of Environment • NDA • Armenia's DAEs
2.5 Creation of a dedicated fund to support green investments	Executive order to establish such a fund and/or expand the role of an existing institution to cover this responsibility to be approved and applied by the relevant government department	• Consultation with public and private sector on pipeline • Identification of dedicated revenue streams	2022 for implementation in 2024	• Ministry of Finance • Ministry of Environment • Line ministries (e.g., infrastructure, agriculture)
2.6 Deepening MDB/DFI partnerships	Appoint dedicated focal points in line ministries for engagement with DFI counterparts	• Closely work with MDBs/DFIs on definition of country priorities and strategies	2022 ongoing to 2030	• Ministry of Finance • Line ministries (e.g., infrastructure, agriculture)
2.7 Supporting establishment of green finance institutions (e.g., leasing companies, private equity funds, crowdfunding platforms)	Defining regulatory and policy requirements to establish green finance institutions • Structuring Fund of Funds for green finance projects • Establish enabling regulatory and policy framework for equity/debt crowdfunding	• Establishment of a Fund of Funds with Initial funding provided by the Government and co-investments by the private sector/DFIs/Climate Funds; • Supporting green-focused start-up environment by e.g., investing in accelerator programmes	2023 for operationalization in 2024	• Ministry of Finance • CBA

Pillar 3. – ESG Framework				
3.1 Development and adoption of a harmonized ESG framework for the financial sector in Armenia	Establishment of mandatory standards for banks, UCOs and other financial institutions to be applied across financial sector eventually	• Consultation with private sector (finance and real) on scope of reporting • Training of ESG specialists • Defining ESG regulatory framework for stock exchange	2023 for operationalization in 2023	• Ministry of Finance • Ministry of Environment • CBA
3.2 Establishment of market standards for ESG	Identifying the preferred ESG framework for Armenia	• Establishing compulsory market standards for banks, UCOs and other financial institutions • Introducing voluntary ESG ranking approach • Introducing a green Insurance scheme	2023 for operationalization in 2024	• Ministry of Finance • Ministry of Environment • CBA
3.3 Enhance carbon market operating capacity	Assessing capacity, process and data requirements for carbon market operations compliant with EU requirements	• Industry consultation on required skills for carbon market operations in Armenia • Training of finance sector carbon market specialists • IT procurement to support the system	2023 for operationalization in 2025	• Ministry of Finance • Ministry of Environment
3.4 Strengthen regulations to monitor and enforce and develop the ESG framework	Assessing capacity, process and data requirements for ESG monitoring	• Industry consultation on mandatory standards for ESG in Armenia • Training of finance sector ESG specialists • IT procurement to support the system	2023 for operationalization in 2024	• Ministry of Finance • Ministry of Environment • CBA

Pillar 4. – Addressing Capacity Constraints				
4.1 Enhance understanding of international green finance frameworks and issues in the private sector	Identify gaps and capacities in the private sector in regards to international best practice in green finance	• Encourage private sector participation in international frameworks • Design and implement training activities and rewards	2023 ongoing to 2025	• Ministry of Environment • Ministry of Finance • CBA
4.2 Enhance structuring capacity for PPPs	Assess gaps in regulation and capacity for PPPs at sector level	• Design and implement training activities and rewards	2022 to 2024	• Ministry of Finance • Ministry of Environment • Line ministries
4.3 Develop capacity for establishing and maintaining complex MRV systems in public and private sectors	Assess gaps in MRV capacity for sector level	• Design and implement training activities and rewards	2023 ongoing to 2025	• Ministry of Environment • Statistical Committee of Armenia
4.4 Comprehensive ESG and gender training for public/private sector	Assess gaps in MRV capacity for sector level	• Design and implement training activities and rewards	2023 ongoing to 2025	• Ministry of Environment • Ministry of Labour and Social Affairs

Timeline

Table 9: Timeline for Implementation of the Roadmap

No	Measure	2022	2023	2024	2025	2026	2027	2028	2029	2030
1.1	Establishing/ formalizing Green Finance Task Force (under CBA)									
1.2	Development and adoption of a Green Bond framework for Armenia									
1.3	Development and adoption of a green taxonomy									
1.4	Development of a carbon pricing regime									
1.5	Creation of an integrated MRV framework linking projects to national inventory reporting									
1.6	Strengthening of data collection to more clearly identify potential actions and vulnerabilities									

No	Measure	2022	2023	2024	2025	2026	2027	2028	2029	2030
2.1	Revision of the GCF Country Program to enable scaled-up climate finance flows									
2.2	Development of favorable regulations for renewable energy developers and PPPs									
2.3	Supporting the development of green projects for financing									
2.4	Structured engagement with climate funds									
2.5	Creation of a dedicated fund to support green investments									
2.6	Deepening MDB/DFI partnerships									
2.7	Supporting establishment of green finance institutions (e.g., leasing companies, private equity funds, crowdfunding platforms)									

No	Measure	2022	2023	2024	2025	2026	2027	2028	2029	2030
3.1	Development and adoption of a harmonized ESG framework for the financial sector in Armenia									
3.2	Establishment of market standards for ESG									
3.3	Enhance carbon market operating capacity									
3.4	Strengthen regulations to monitor and enforce and develop the ESG framework									
No	**Measure**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**
4.1	Enhance understanding of international green finance frameworks and issues in public sector									
4.2	Enhance structuring capacity for PPPs									
4.3	Develop capacity for establishing and maintaining complex MRV systems in public and private sectors									
4.4	Comprehensive ESG and gender training for public/private sector									

Inclusive Approach to Implementing the Roadmap

To deliver an inclusive and gender-balanced green finance sector, Armenia's Green Finance Roadmap will need to be implemented in an integrated, multi-stakeholder approach to deliver Armenia's low-carbon development and advancing the circular economy through the provision of finance dedicated for this purpose. It will need to achieve specific objectives set out below.

- Embedding "green" thinking and behavior into public and private finance leadership and practice
- Mainstreaming green finance principles throughout existing policies
- Building green finance market infrastructures through new policies and regulations

To deliver these objectives, the government will need undertake the following actions:

- Develop and adopt an action plan with clearly defined milestones and targets
- Addressing capacity constraints
- Creating opportunities for private sector investment, e.g., by structuring PPPs for renewable energy or shaping regulations enhanced energy efficiency

For the implementation of the Green Finance Roadmap Table 9 below sets out the range of stakeholders and a simplified stakeholder engagement framework, to assure an inclusive and consultative implementation of the roadmap, including stakeholders throughout.

Table 10: Role of Stakeholders in the roadmap implementation

Organization	Pillar 1. – Policy Framework	Pillar 2. – Green Finance Flows	Pillar 3. – ESG Framework	Pillar 4. –Capacity Constraints
1. Government ministries, agencies and public bodies				
Ministry of Agriculture	• Definition of policies in the sector of "clean energy"	• Project identification	• Legislative/ regulatory support in adaptation challenges	• Recipient of capacity building support
Ministry of Economy	• Definition of Economic policies for "green" sectors	• Supporting development of projects and liaison with the NDA	• Economic analysis of impact of ESG • Development of the Green Taxonomy	• Implementation of periodic screenings of private sector entities and proposing capacity building interventions • Recipient of capacity building support
Ministry of Energy	• Definition of policies in the sector of "clean energy"	• Project identification		• Recipient of capacity building support
Ministry of Environment (NDA)	• Coordination with the Inter-Agency Coordination Council	• Liaison with climate funds • Project identification	• Legislative/ regulatory support in identifying e.g. ESG standards and supporting the development of taxonomies	• Identification of training needs in public and private sector, specifically for MRV • Liaison with the donors and climate funds to raise funding for trainings • Recipient of capacity building support
Ministry of Finance	• Promotion of the Green Procurement Principles	• Work with MDBs/DFIs on country assistance strategies		• Recipient of capacity building support
Ministry of High-Tech Industry	• Tech for Climate Policy Development	• Implementation support e.g. for green startup projects • Project identification	Legislative/ regulatory support in relation to digitalization, venture capital and start-ups, as we well as tech transfer	• Recipient of capacity building support
Ministry of Labor and Social Affairs	• Support gender-mainstreaming in definition of policies in the sector of green finance		Integration of gender in ESG frameworks	• Support capacity building efforts • Recipient of capacity building support
Ministry of Territorial Administration and Infrastructures	• Definition of policies in the sector of "clean energy"	• Project identification		• Recipient of capacity building support

Central Bank of Armenia	• Defining policy and regulatory incentives • Establishment/chairing of Green Finance Task Force • Supporting development of taxonomies •	• Supporting establishment of dedicated institutions (including Fund of Funds) • Establishment of Green Bonds Framework	• Defining mandatory requirements for banks and UCOs and other financial institutions • Regulation of green finance and ESG including integration into existing regulatory framework	• Implementation of periodic screenings of financiers and proposing capacity building interventions • Recipient of capacity building support
Statistical Committee	• Support the development of MRV processes and systems	• Track green finance flows	• Track ESG finance flows	• Support capacity building efforts • Recipient of capacity building support

2. Donor organizations, MDBs and other international development partners				
EU	• Policy development support		• Financing underlying ESG activities	• Financing implementation of projects aimed at capacity advancement
Climate Funds (AF, CIF, GCF, GEF, NAMA Facility)	• Coordination of country programming with NDA, line ministries	• Structuring financial instruments around host country priorities • Funding implementation of projects	• Imposition of high-quality lending standards	• Financing implementation of projects aimed at capacity advancement • Contribution to capacity building activities
MDBs (ADB, EBRD, EIB, KfW, WB/IFC)	• Coordination of the mid-term country assistance strategies with relevant line ministries	• Structuring financial instruments around host country priorities • Supporting implementation of projects	• Imposition of high-quality lending standards	• Financing implementation of projects aimed at capacity advancement • Support capacity building activities
UN Agencies (UNDP, FAO, IFAD, UNEP etc.)	• Provide international best practice input • Implement policy development activities	• Support project implementation with technical assistance	• Provide international best practice input	• Support capacity building activities

3. Private sector organizations				
Business angel networks, private equity funds, crowdfunding platforms	• Communicate with the Government agencies on policy and regulatory constraints	• Serve as innovative finance instruments	• Apply ESG standards and principles	• Contribution to capacity building activities
Consulting Companies	• Communicate with the Government agencies and support client private sector representatives			
AMX Armenia Security Exchange "Central Depository of Armenia"	• Communicate with the Government agencies and support client private sector representatives			
Representatives of companies operating in mitigation	• Provision of the feedback on priorities and investment appetite	• Recipients of advisory support to target respective sources and prepare competitive investment proposals	• Apply ESG standards and principles	• Recipients of capacity building support
Representatives of companies operating in adaptation	• Provision of the feedback on priorities and investment appetite	• Recipients of advisory support to target respective sources and prepare competitive investment proposals	• Apply ESG standards and principles	• Recipients of capacity building support
4. Civil Society Organizations and Industry Associations				
CSOs operating in the climate mitigation and adaptation domain	• Supporting enabling policy and regulatory environment formulation	• Development of grassroots projects	• In grassroots projects, apply ESG standards and principles	• Contribution to capacity building Recipients of capacity building support • activities • Assisting delivery of capacity enhancement projects
Sectoral business associations				
Union of Banks	• Liaise between CBA and commercial banks on the issues across 4 pillars			
Union of Universal Credit Organizations	• Liaise between CBA and UCOs on the issues across 4 pillars			
Lessors Association of Armenia	• Liaise between CBA and lessors on the issues across 4 pillars			

Gender Considerations of the Green Roadmap

It is critically important that the development and implementation of the Green Finance Roadmap in Armenia takes due regard of the need to balance gender considerations. This is not only the case because this is now expected by donors and climate funds or DFIs, but also because Armenian Women and girls are highly exposed to climate change impacts as have fewer capacities and access to resources, including financial resources, to cope with the climate impacts. In Armenia, women are more likely to be in poverty, as they represent 56% of the poor, and households headed by women are more likely to be under the poverty threshold. [35] This is connected to their lower workforce participation, with stands at only 51% 19 percentage points lower than that of men. Even those women who are in work are disadvantaged, as they on average experience a gender pay gap of 32%. Taken together, this means that they have considerably lower ability to access to finance, a challenge further exacerbated by often lower financial literacy, ability to bear or outright aversion to risk and lack of assets that could act as financial back up.

The Paris Agreement and its implementation guidelines call parties to revise and implement NDCs in gender-responsive and participatory manner, and this can be extended to green finance more generally. Over the last decade, Armenia has taken important steps towards developing and implementing gender-responsive policies and strategies:

- In 2013, equality of rights, authorities, responsibilities, opportunities and outcomes were protected by the RA Law on "Provision of Equal Rights and Equal Opportunities for Women and Men".[36]
- In 2019, Armenia adopted the "Gender Policy Implementation Strategy and Action Plan for 2019-2023", which aims to ensure gender sensitivity of programs included in the state budget.[37]

While Armenia is moving to apply gender-responsive budgeting, starting from 2020, this is likely to suffer from a range of factors, including but not limited to:

- low levels of involvement of women in decision-making and

[35] https://www.adb.org/documents/armenia-country-gender-assessment-2019

[36] http://www.un.org/womenwatch/daw/Review/responses/ARMENIA-English.pdf

[37] Gender Policy Implementation Strategy and Action Plan for 2019-2023,

- lack of gender desegregated data,

Outside the public sector, private sector, gender-focused financing of climate action that would prioritize gender inclusion is currently at its development stage. EBRD's Business Advisory Service is running the technical assistance programme "Women in Business" in Armenia[38], but unlike in other countries, EBRD has not launched a dedicated credit line in the country.

To ensure gender-sensitivity and -mainstreaming of the Roadmap, it is important to:

- Track lending progress for green objectives at sectoral level disaggregated by gender;
- Identify separately the gaps, needs, barriers experienced by women and men as related to green actions and their financing;
- Ensure that technical assistance for capacity development is also aimed at enhancing the abilities of vulnerable groups, including women; and
- Introduce innovative green financing tools specifically targeting green activities implemented by women businesses and entrepreneurs.

V. Annexes

I. *List of potential projects (1st tier priority projects)*

Table 11: 1st Tier Priority Green Projects in Armenia

Project name	Budget (mUSD)	Potential Source of Funding	Information sources
Mitigation			
Construction of 1,050 MW of new solar PV	750	MDBs	Analysis of available reports/strategies and validation with the key experts
Construction of 176 MW medium sized hydro-power stations	500	MDBs	Irena Report 2017 Ministry of Territorial Administration and Infrastructures
Construction of 500 MW of WPP	750	MDBs	Analysis of available reports/strategies and validation with the key experts

[38] https://www.ebrd.com/downloads/tambas/country/Small_Business_Support_Women_In_Business.pdf

Modernization of the Electric Networks of Armenia	450	MDBs (with possible blending from climate funds)	Analysis of available reports/strategies and validation with the key experts
Construction of a pumped storage facility	500	MDBs, Commercial banks, Green Bonds	Analysis of available reports/strategies and validation with the key experts
Advancing e-mobility	500	MDBs, Commercial banks, Green Bonds	Analysis of available reports/strategies and validation with the key experts
Energy efficiency upgrades of public and residential buildings	500	MDBs, Commercial banks,	Analysis of available reports/strategies and validation with the key experts
Reforestation and afforestation investments on public forest lands	180	MDBs, Climate Funds, State Budget	"An Assessment of Investment Needs for Climate Action in Armenia by 2030" Report produced under the EU4Environment
Subtotal for Mitigation	**4,130**		
Adaptation			
Installation of additional irrigation (for 25,000 ha)	56	MDBs, Commercial banks, State budget	"An Assessment of Investment Needs for Climate Action in Armenia by 2030" Report produced under the EU4Environment
Introduction of more climate resilient crops	13	MDBs, Climate funds	"An Assessment of Investment Needs for Climate Action in Armenia by 2030" Report produced under the EU4Environment
Subtotal for Adaptation	**69**		
TOTAL	**4,199**		

II. MDB Projects and Pipelines in Armenia

The table below shows the list of all of the projects in the pipelines of the ADB, EBRD and the World Bank. The projects marked in green are green.

Table 12: MDB Projects in Armenia

MDB/Project	***Project Volume***
World Bank - IBRD	*mUSD*
Water-secure Armenia Project (WATSAP)	80
Armenia DPO	100
Fourth Public Sector Modernization Project	30
Armenia Education Improvement Project Additional Financing	25
EBRD	
VISP – Armenian Air Navigation	3
FIF – EaP SMEC – InecoBank	5
DFF – Telecom Armenia	20
ADB	
Strengthening the Banking Sector for Financial Inclusion	60
Viability Assessment for Potential Wind Power Electricity Generation Projects	n/a
Second Water Supply and Sanitation Sector Project	n/a

World Bank

The World Bank has three projects in Armenia in its pipeline, two of which have significant green and sustainability components.

- The IBRD expects to approve in 2023 US$ 80 million for the Water-secure Armenia Project (WATSAP). The project aims to strengthen Armenia's institutional capacity for improved water security planning and management, providing for more resilient water systems, efficient service delivery, and stewardship in agricultural water use.
- The Bank is also working on a project titled Armenia DPO with the development objective to strengthen resilience, support an inclusive and sustainable recovery from the COVID-19 pandemic, while strengthening governance and promoting transparency. The Bank has committed US$ 100 million for this project. Lastly the IBRD has committed US$ 25 million for the Armenia Education Improvement Project Additional Financing, which is due to be approved and start later in 2022.

- The World Bank has also approved and is preparing to start its Fourth Public Sector Modernization Project in Armenia with a loan of USD29.90 million from the IBRD. The project development objective is to improve the efficiency of and access to selected public services for businesses and citizens. It is unclear whether this project will contain any sustainability or green components.

Asian Development Bank

The ADB also has three projects in its Armenia pipeline, and all three of them fall under the category of green and sustainable projects.

- The already approved Armenia: Strengthening the Banking Sector for Financial Inclusion consists of a loan to Ameriabank CJSC to increase the capacity of the borrower to serve more credit to SMEs in the agricultural sector of Armenia, and expansion of private financial services in Armenia in general. This project may include green components and certainly has sustainability impacts.
- The Second Water Supply and Sanitation Sector Project, which is still in the ADB pipeline, will focus on Yerevan city, Ararat, Armavir, and the mountainous Aragatsotn region. These regions have a combined population of 1.8 million (50% of the country's population) and cover an area of more than 5,400 square kilometers. The main reasons for focusing on this geographical area, especially Yerevan and the Ararat, are their economic importance, vulnerability to over abstraction of ground water, drought, climate change, and absence of intersectoral river basin management plans.
- The other ADB project in the pipeline is a Viability Assessment for Potential Wind Power Electricity Generation Projects. It is a technical assistance project preparation activity which will deliver feasibility analysis of candidate wind power projects and a robust utility-scale project investment pipeline. The development of Armenia's wind power potential will deliver climate mitigation benefits through an increased renewable energy share in the overall country energy mix. The proposed wind farm projects will support the achievement of the government's nationally determined contributions and a renewable energy target of a 15% share in the total electricity mix by 2030, with a long-term target of 26% by 2040.

European Bank for Reconstruction and Development

The EBRD also has three projects in its pipeline for Armenia, one of which is a green project.

- The EBRD FIF – EaP SMEC – InecoBank project which has already been signed will provide a senior loan to InecoBank of up to US$ 5 million under the SME Competitiveness Programme in Eastern Partnership ('EaP SMEC') established by the EBRD in cooperation with the EU to help finance investments in micro-, small and medium sized enterprises ('MSMEs') to support sustainable investments in technologies, meeting best standards in the field of product

quality, occupational health and safety, environmental protection, and promoting the use of green technologies, thereby enhancing MSMEs' competitiveness locally and regionally.

- The VISP – Armenian Air Navigation, could potentially fall under the sustainability agenda because it directly aims to remedy Covid-19 consequences. The project, which is already concept reviewed, will aim to address the urgent need of liquidity support to Armenian Air Navigation in the period of unprecedented economic impacts of COVID-19 crisis. The proposed transaction is in line with the Vital Infrastructure Support Programme (VISP) under the COVID-19 Solidarity Package Phase 2.
- Lastly, the EBRD has recently approved the DFF – Telecom Armenia consisting of an up to USD 20 million participation in an up to USD 45 million senior secured facility in favour of Telecom Armenia, to refinance the Company's existing debt – largely resulting from its leveraged acquisition by Team LLC, and to finance its growth capex plan, including network expansion in rural areas. It is unclear whether this project has any green or sustainable components – they could potentially stem from its aim to expand services to the most disadvantaged rural communities.

III. International best practice

Several countries have in recent years adopted Green Finance Roadmaps. This section is describing the most important elements of these for selected countries or entities, namely:

- Australia
- Canada
- The European Union
- Mongolia
- Morocco
- New Zealand
- The United Kingdom

Australia

The Australian Sustainable Finance Roadmap (2020)[39] includes several recommendations regarding fiscal incentives for buying green instruments by end consumers and small and medium sized enterprises:

One recommendation is for Australia's financial system participants to support the establishment of community finance that can be accessed by place-based groups, including clubs and social enterprises, as part of a place-based community resilience strategy. This should include collaborative initiatives with local government partners, development of standardized documentation that can reduce the costs for social enterprises to access finance, and support for credit guarantees and other measures that reduce the risk of financing and investing.

Such place-based recovery strategies, which simultaneously respond to and engage the nuances of 'place' and local communities while being aggregated across a regional scale to maximize the investment footholds required by private and institutional investors. The Roadmap proposes that financial system participants design and establish finance facilities that can be accessed by place-based groups, including clubs and social enterprises, through local government partners. Examples of previous financial system innovations include the Municipal Association of Victoria's Local Government Funding Vehicle that was established in 2014 and enabled 33 councils to access cheaper sources of funding following the 2007 global financial crisis.

A second relevant recommendation from the Australian Roadmap is for its financial system participants to develop income and revenue contingent loans as a mechanism to support individual and community resilience to acute shocks as well as chronic threats to climate and health, which amplify the impact of acute shocks on the most vulnerable.

Income contingent loans (ICLs) are identified as a mechanism to support individual resilience. ICLs are typically used to alleviate credit constraints for those facing tuition costs. The salient advantage of ICL schemes over alternative funding sources is the absence of default events that can have lifetime impacts on individuals who are subsequently unable to access credit. ICL schemes can be designed to link repayments to level of income, which can be verified through the Australian Taxation Office. Proponents have argued that ICL schemes can be used in a variety of applications, including revenue contingent loans (RCL) for farmers and small businesses.

ICLs could be made available to vulnerable groups. When loans are paid back, this would be formally acknowledged in an individual's credit score and thus bring them into mainstream finance.

[39] https://www.asfi.org.au/roadmap

The establishment of ICL/RCL schemes has the potential to significantly reduce reliance on payday loans and fringe credit and reduce negative consequences that arise from default.

RCL schemes could be developed to provide small loans to social enterprises. With support from a partner such as local government, larger size loans could be made to community projects, including to upgrade community facilities. These activities have broader benefits such as building and supporting community well-being and creating jobs.

The Australian Roadmap also recommends that financial system participants work collaboratively to promote climate risk mitigation efforts and to ensure buildings are disaster resilient:

- implementing a framework for assessing the cost of mitigation investment that factors in broader social costs and benefits;

- supporting, through credit guarantees and other measures, banks/lenders to lend for mitigation retrofits through issuance of resilience bonds; and

- supporting household-level risk mitigation (for owners and renters) through education and incentives for those who cannot afford to implement retrofitting.

There are several challenges in transitioning the built environment to be sustainable. Aside from the commercial office sector, where mandatory disclosure is used, there is a lack of consistent benchmarks available to compare the performance of the diverse spread of building types in Australia. For example, there is no requirement to measure or disclose energy and carbon in a systematic manner across the breadth of the built environment. These problems are exacerbated in the residential sector where it is not mandatory to measure the performance of individual homes. Therefore, there remain significant challenges to ensure the residential construction sector is equipped to deliver, and incentivized to meet, consumer expectations.

In addition to the importance of changes to the National Construction Code focused on enhancing over time the energy efficiency of buildings to reduce emissions and reduce energy bills for homeowners, future changes need to be considered because of the expected lifetime of the home, including allowance for increased frequency and severity of natural disasters due to climate change over time.

The Australian Government's Technology Investment Roadmap proposes a Technology Investment Framework that outlines the respective roles of the private sector and government, defining the role of the private sector as driving deployment of commercially mature technologies and the government to remove roadblocks, enable consumer choice and support the emergence of the best enabling environment.

Lastly the Roadmap recommends that Australia's financial system participants finance the development and regeneration of real assets, including infrastructure and property (housing, industrial and commercial), through several actions, including:

- integrating environmental, social and governance (ESG) factors into the investment decision-making process for new infrastructure projects, and for expansions to existing assets, using broadly accepted standards and frameworks relevant to the specific category of infrastructure assets;

- using a national rating scheme for the energy performance of homes such as the Nationwide House Energy Rating Scheme (NatHERS) and establishing mandatory disclosure of performance at the point of sale and lease;

- supporting an industry approach to adopt consistent rating tools as measurement benchmarks;

- integrating built environment ratings into consumer and business lending and investment valuations, including infrastructure projects; and

- working with stakeholders, including the construction sector, to update the National Construction Code so that future residential properties are built to be resilient to climate change and broader climate and geological risks, and ensure energy efficiency as well as use of sustainable materials.

Canada

Canada's Roadmap, titled "Mobilizing Finance for Sustainable Growth – Final report of the expert panel on sustainable finance"[40] was published in 2019, and suggests the importance of an incentive for Canadians to make climate-smart investments which would drive demand for financial products and services that promote sustainable outcomes.

Of the Roadmap's 15 recommendations, the most relevant concerns providing Canadians the opportunity and incentive to connect their savings to climate objectives. The document explains that without broader awareness, there is limited demand for climate-conscious products, and thus little motivation on the part of intermediaries to understand the related preferences of clients.

Therefore, the Roadmap recommends creating financial incentives for Canadians to invest in accredited climate-conscious products through their registered savings plans as a first step in raising awareness and reinforcing several virtuous circles of sustainability. This can be accomplished by providing a tax-based financial incentive for Canadians to invest in accredited climate-conscious products, such as green bonds, through their registered savings plans (such as registered retirement savings plans) or defined contribution pension plans.

This recommendation is broken down into two components. Firstly, the document recommends offering increased contribution space and a 'super tax deduction' for contributions to registered retail savings plans earmarked for accredited climate-conscious products. Specifically, the Roadmap proposes that the programme provide:

- taxable income deductions greater than 100% on eligible contributions, combined with
- an extended fixed-dollar contribution limit available only for eligible investments.

Investments that support Canada's climate adaptation and decarbonization efforts are evolving. This incentive programme must come with robust accreditation and eligibility criteria to protect savers and ensure they are investing in products that offer the potential for real climate impact.

Secondly, the Roadmap recommends offering a mirror deduction for registered defined contribution pension plans and group pension programmes, to widen programme reach. Once sustainability principles become more integrated into mainstream markets and key fundamentals (such as

40 https://publications.gc.ca/site/archivee-archived.html?url=https://publications.gc.ca/collections/collection_2019/eccc/En4-350-2-2019-eng.pdf

disclosures and taxonomies) mature, plan providers should be encouraged to offer default plan options that invest in climate-conscious investments.

As retail agents, advisors and plan custodians prepare options for their clients and plan participants, additional segments of the financial sector would also become engaged on the issues.

Lastly, the Roadmap recommends defining a roster of eligible investment products and developing robust accreditation standards for the super deduction program, in collaboration with the financial sector.

Robust eligibility and assurance criteria for the super deduction programme are critical to maintaining integrity and avoiding 'greenwashing'. While accreditation standards develop, initial programme eligibility could include green bonds that meet the Green Bond Principles (GBP) as well as ETFs and mutual funds that are dominated by such GBP-aligned green bonds.

Over time, the standards should encompass the evolving realm of investments that support Canada's climate adaptation and decarbonization efforts, including transition and resilience bonds and themed low-emissions, climate-smart indices, and funds. Standards should also evolve alongside innovation, market patterns and other international developments, including progress on sustainability taxonomies and the possible development of a Canadian stewardship code.

In due course, provinces should assess the formal responsibilities of Canadian investment advisors and agents in engaging clients on their sustainability preferences and communicating the merits of related investment options. This ties to the longer-term need for clearer standards of conduct, better data and user-friendly analytic tools, and accelerated training and competency building on climate-related matters within the financial support ecosystem.

European Union

The EU Sustainable Finance Roadmap 2022-2024[41], published in February 2022 is an even more high-level document than the other roadmaps and offers no best practice in terms of financial instruments that could act as fiscal incentives for buying green instruments by end consumers or small and medium sized enterprises.

Nevertheless, the EU Strategy for Financing the Transition to a Sustainable Economy[42] published in July 2021 offers recommendations to create a more inclusive sustainable finance framework and especially targeting citizens as either retail investors or consumers and SMEs to access sustainable finance opportunities. The Capital Markets Union and the sustainable finance framework together aim to provide SMEs with more financing opportunities and encourage greater retail investor participation in capital markets. In addition to encouraging green retail lending, the Commission is also highlighting green mortgages.

The EU also has a sleuth of activities to increase the capacities of financial advisors and improve overall financial literacy. For example, the Commission supports Member States in their efforts to provide capacity building and technical advice on how SMEs can voluntarily report on sustainability risks and impacts. To that end, and in line with the proposed CSRD, the European Financial Reporting Advisory Group prepared a simplified voluntary sustainability reporting standard. In addition, the Invest EU Programme provides de-risking mechanisms while the SME pillar of the Single Market Programme offers advisory services for SMEs through the Enterprise Europe Network and the Joint Cluster Initiative.

The Commission also singles out digital solutions in its efforts to help SMEs use sustainable finance tools and to support retail investor understanding of the sustainability impact of financial products. Technological innovation, such as artificial intelligence, blockchain, big data, and the Internet of things, has a significant role to play in sustainable finance. Further EU initiatives, such as including sustainability-related information in the European Single Access Point (ESAP) and the Open Finance Framework, will help to unleash this potential.

The EU Climate Adaptation strategy aims to create the enabling conditions to support society's resilience to climate change and reduce the risks. A natural disaster insurance dashboard from the European Insurance and Occupational Pensions Authority will indicate potential insurance coverage gaps in Member States. In addition, the Commission aims to initiate a Climate Resilience Dialogue between insurers, re-insurers, public authorities and other stakeholders to exchange best practices

[41] https://www.esma.europa.eu/sites/default/files/library/esma30-379-1051_sustainable_finance_roadmap.pdf

[42] https://eur-lex.europa.eu/resource.html?uri=cellar:9f5e7e95-df06-11eb-895a-01aa75ed71a1.0001.02/DOC_1&format=PDF

and identify ways to address the climate protection gap, either through recommendations or through voluntary commitments.

The Commission is also working closely with Member States to increase the use of green budgeting tools, having developed a green budgeting reference framework and annual surveys on existing practices in green budgeting in the EU to support the many Member States who want to redirect their national budget to green priorities. Analytical work, technical support and training as well as an annual conference promote a mutual learning process to ensure that budgetary policies and spending are in line with environmental commitments.

Risk-sharing between public and private investors can effectively address market failures that hinder the financing of sustainable infrastructure and innovation driven transition. The Sustainable Europe Investment Plan, the investment pillar of the European Green Deal, aims to mobilize at least EUR 1 trillion in sustainable investments over the next decade from private and public actors. The InvestEU programme will provide risk-taking capacity and support for related advisory initiatives to the EIB Group, national promotional banks and other financial institutions.

Mongolia

The National Sustainable Finance Roadmap of Mongolia: Unlocking Mongolia's Potential to Become a Sustainable Finance Knowledge Centre in the Region[43], is a more detailed in its recommendations than the other roadmaps included in this study. The most relevant recommendation concerns supporting financial institutions (FIs) in the process to develop new green products and services (e.g., Retail loan products; Green Mortgage; SME lending; Corporate lending; Adaptation finance; Biodiversity finance; Project finance; Digital finance).

The country has already made significant progress in growing its financial intermediation. ADB, EBRD and more recently from the GCF have all offered loans and technical assistance. For example, the GCF alongside the Government of Mongolia and the Mongolia Sustainable Finance Association, helped to establish the Mongolia Green Finance Corporation. The Corporation borrows through local partner financial institutions (PFIs) to enable access to low-cost credit facilities that help boost private sector involvement in green development.

Nevertheless, access to finance remains a constraint for enterprises, and especially for MSMEs. The Roadmap therefore recommends the provision of risk-sharing and of other products and services to better address the needs of the needs of the market such as:

- Green mortgages.

- SME lending especially targeting the replacement of old energy inefficient equipment, where the Roadmap singles out the sustainable textile and cashmere sector for its market potential; and

- Specifically targeted retail loan products, which may include electric vehicle loan programmes, loans for efficient electric heating equipment for *Gers* (yurts) – the predominant form of housing in Ulaanbaatar, presently heated by coal burners that cause health-threatening air pollution in the capital – and energy efficiency for single and multi-family housing. These loan programmes can use a portfolio approach to credit structuring and therefore represent a good application for loan loss reserve risk sharing products. Leveraging on the financial access rate of banks, products such as green credit cards and green deposits could also be considered as innovative products contributing to sustainability.

[43] https://www.un-page.org/files/public/national_sustainable_finance_roadmap_of_mongolia.pdf

Morocco

The Roadmap of the Moroccan financial sector for the emergence of sustainable finance in Africa[44] (published in 2016) offers recommendations along five dimensions:

- Socio-environmental risks' governance
- Financial products/tools dedicated to sustainable development
- Promoting financial inclusion
- Capacity building, and
- Transparency and market discipline

One of the key measures proposed in this Roadmap is to progressively integrate environmental considerations in the public support offered to SMEs, especially through guarantee funds and co-financing funds. The aim being to support investment projects in the green economy and adaptation projects to climate change which weigh heavily on corporate budgets and encourage businesses that committed themselves to an environmental and social management. The Roadmap specifically singles out setting up, whenever needed, refinancing mechanism of loans to eligible projects.

The Roadmap also advocates incentives for banks to use and mobilize "green" resources, especially through international credit lines with funding from MDBs and the GCF, and the issuance of green bonds. It also recommends strengthening and broadening the overall range of financing offers dedicated to sustainable development projects, focusing on innovation.

Another recommendation is to incentivize banks (including through tax incentives) to develop green savings products, such as retirement savings schemes whose premiums would be placed in green assets. In this regard, the Roadmap sets a goal to supply 500 million dirhams each year.

Lastly, the Roadmap encourages the establishment of incentives for insurance companies to extend the offer of coverage against climate change impacts and develop insurance solutions for environmental risks.

[44] https://www.greenfinanceplatform.org/policies-and-regulations/roadmap-aligning-moroccan-financial-sector-sustainable-development

New Zealand

New Zealand's Sustainable Finance Roadmap[45] for Action, published in November 2020, offers several relevant recommendations related to incentives for buying green instruments by end consumers or small and medium sized enterprises.

The roadmap involves three key themes – changing mindsets, transforming the financial system, and financing the transformation, and carves out 11 key recommendations to help facilitate change.

- **Changing mindsets**

  The report recommends that financial system actors consider and account for ESG risks and opportunities as well as real-world impacts; educating and training management in sustainable finance; and improving governance and accountability through introduction of a stewardship code for financial institutions.

- **Transforming the financial system**

  The report sets out recommendations to improve the availability and quality of data, reporting and disclosures, and calls for the establishment of a Centre for Sustainable Finance to facilitate better coordination and promote inclusivity.

- **Financing the transformation**

  The report issues recommendations for building resiliency through prudent regulation over environmental risks and developing standards and pathways that encourage investments which will result in positive environmental, social and economic outcomes.

One of the document's recommendations is to explicitly require financial system actors to consider, manage and account for environmental and social risks and opportunities and real-world impacts, for example by removing barriers to purpose-led businesses and investment models. To this end, the Roadmap suggest providing incentives for purpose-led businesses, with initiatives such as provision of tax incentives; providing KiwiSaver (the national voluntary retirement savings scheme) investment incentives (such as the 90/10 scheme in France); and allowing a more beneficial tax treatment for income associated with achieving public good.

Additionally, the New Zealand Roadmap also recommends integrating environmental, social and cultural outcomes into investment decisions. This would require the introduction of market mechanisms

45 https://static1.squarespace.com/static/5bb6cb19c2ff61422a0d7b17/t/5f9f7a83aa6e763a1b0f6759/1604287127400/20207-000234_Sustainable+Finance+Forum+Final.pdf

and fiscal incentives to internalize environmental and social outcomes. The Roadmap cites the example of Germany where the government designed governance and incentive systems such as climate-focused taxes, emissions trading and fees that provide carbon leakage protection.

Lastly, the Roadmap recommends developing standards and pathways that encourage investments which deliver positive environmental, social and economic outcomes. One way to achieve this, is by creating liquidity requirements for the national voluntary retirement savings scheme, KiwiSaver. By changing the scheme's structure and incentives providers could move from passive investment to active, long-term investments which provide for positive environmental, social and economic outcomes. This would allow KiwiSaver funds to invest in less liquid asset classes with risk/return characteristics aligned to active management and long-term investing. Furthermore, the government could support this active management approach using verification/certification standards.

United Kingdom

Published in October 2021 the UK's Greening Finance: A Roadmap to Sustainable Investing[46] is a very high-level document which offers few details but rather structures its information along basic subjects such as getting the right information to market participants, defining what counts as green, being a responsible steward of capital, and leading international efforts to green finance.

The Roadmap outlines the actions the UK government and regulators are taking – working in partnership with the private sector – to close the information gap for market participants on sustainability by:

- Implementing **Sustainability Disclosure Requirements (SDR)** across the economy – introducing disclosures incrementally as new regulatory or legislative measures come into force

- Delivering **a UK Green Taxonomy** and ensuring it has been road-tested in the market as a useful investment tool.

- Lowering the barriers to investors acting as effective and responsible **stewards of capital**

- Leading **international efforts to bring about global and systemic change** in the financial system

The Roadmap follows the government's 2019 Green Finance Strategy, which set out a suite of policies to assist in aligning UK financial flows with a low-carbon planet. The government states that it views the task of "greening the financial system" as composed of three fundamental phases. The Roadmap addresses the first phase: informing investors and consumers and addressing the information gap in relation to environmental and sustainability issues between corporates and investors. Notably, the Roadmap also introduces sustainability disclosure requirements (SDR) for UK companies and reveals further developments in relation to the UK Green Taxonomy (Taxonomy). In addition, the Roadmap identifies proposed timeframes for further developments on each of these topics.

The Roadmap provides a great deal of information about the UK's plans in relation to sustainable finance. However, assessing its impact is difficult at this stage because several measures (including SDR and the Taxonomy) will be consulted on before implementation, and the ISSB standards upon which SDR relies have not been promulgated. Another unknown is to what extent the TSC under the Taxonomy will diverge from the TSC for the EU Taxonomy — both initially and over time, given the similarity of the regulatory regimes that each TSC underpins.

[46] https://www.gov.uk/government/publications/greening-finance-a-roadmap-to-sustainable-investing

Importantly, the government has promised to update its Green Finance Strategy in 2022, which will go beyond the timetable in the Roadmap and set out an indicative sectoral transition pathway to 2050.

IV. Recommendations from the Readiness Project

The Green Finance Roadmap report builds on the recommendations from previous projects under the GCF-Armenia Readiness Project *Scaling up green finance practices in the Republic of Armenia*, which has been operational since July 2020. Table 10 below gathers these recommendations by project and area of coverage.

Table 13: Recommendations from previous reports under the Readiness Project

Report	Recommendation	

Scaling up green finance practices in the Republic of Armenia	Policy, Standards, Legal/Regulatory, MR	*Government Policy and Regulation Support*
		• To contribute towards raising awareness of businesses and households on the benefits of "green technologies";
		• To impose policy and fiscal restrictions on brown financing projects;
		• To enable fund raising:
		  ○ Clear policies defining "green finance" policies, state support mechanisms, incentives and structures;
		  ○ The facilitation of the issuance of green bonds in accordance with the Green Bond Principles and Climate Bond Standards
		  ○ To amend budget codes for municipal governments and state-owned enterprises to enable them to more easily take green finance packages;
		• To provide financial support:
		  ○ Help to channel more resources from IFIs and climate funds;
		  ○ The introduction of tax and custom incentives and direct subsidies for renewable energy and energy efficiency equipment (such as tax holidays and reimbursement of income tax paid by borrowers of mortgage finance);
		  ○ An increased cap for enterprises seeking to install solar PV modules under the net-metering approach, which is currently capped at 0.5 MW;
		  ○ To channel resources for enabling cashback and grants for MSEs and households willing to benefit from renewable energy and energy efficiency solutions
		• To introduce minimum energy efficiency requirements for different sectors of economy (priority–construction of new residential buildings).
		Central Bank
		• To improve the funding environment for green projects in general:
		  ○ To impose appropriate restrictions on brown financing projects;
		• To enable fund raising via e.g., green bonds:
		  ○ To enact specific regulation outlining the concept of "green finance" and defining support mechanisms;

		• To enable enhanced finance flows from banks:
		  ○ To reduce mandatory reservation costs to the zero;
		  ○ To reduce minimum capital and liquidity requirements for "green finance" instruments;
		  ○ To reduce risk weights for "green finance" instruments;

	Infrastructure and Capacity	The government should consider investing in delivering the institutional and human infrastructure and capacity to enable businesses and households to invest in green solutions in an efficient and informed manner. • Financial institutions should adopt clear and robust internal processes and link them to emerging international standards. • Financial institutions should grow internal technical capacity to deliver rapid and robust assessment of green finance project proposals and loan applications.
	Raising Awareness	• The government and the financial sector actors should consider ways to undertake comprehensive awareness raising campaigns, e.g., deploying modern communication technology to enable both businesses and consumers to visualize the benefits of renewable energy and energy efficiency solutions, and to be able to undertake initial calculation of benefits from these investments, similar to e.g., online mortgage calculators. Such a campaign should particularly target smaller size enterprises and households in the regions. • Establishing both generic and inhouse training programmes for bank staff to help them promote green finance solutions, as well as community/association-based outreach programmes to promote green solutions to targeted household audiences, could be a powerful tool to increase the dissemination of green finance information throughout the Armenian economy. • A focus of training should be put on non-bank financial institutions which are reported in the survey to have lower satisfaction levels in terms of service delivery.
	Motivation	• Design awareness-raising campaigns that strongly focus on the economic benefits from investing in green solutions, emphasising the triple bottom line, of investments being good for the household or business budget, good for the environment and the planet, and good for the country. • Develop awareness-raising campaigns for other green products that focus on the economic benefits they can deliver.
	Reduced financing cost	• Seek to expand access to favourable credit provision from DFIs and donors such as the Green Climate Fund or the EU to bring down the overall cost of green finance in Armenia. • Consider regulatory measures that would enable financial institutions to lend at lower levels for green products than other products, through e.g., reform of banking regulations.

		• Provide taxation or other benefits to bring down the cost of green products, both physical and financial, to reflect the environmental and economic benefits of such products to Armenia.
	Quality of Financial Products	• Undertake a study to further gather information on how solar products are marketed and how financial institution processes are set up to enable this, to draw lessons for other green products. • FIs should consider innovation to provide a broader range of financing instruments and have a wider choice of finance raising instruments themselves.

Report	Recommendation	
Scaling up green finance practices in the republic of Armenia	Public Policy Preparation	• Development of a comprehensive road map for the transformation of the Armenian financial sector towards green and sustainable lending; • Providing certainty to investors by developing long term approaches to policy support for e.g., renewables and climate mitigation; • As appropriate provision for long-term funding support for critical sectors such as buildings energy efficiency, small scale renewables, or small-scale infrastructure investments in order to provide investors certainty, and reduce financing costs; • Development of long-term road maps and assessments to identify climate risks and sector vulnerabilities in order to provide information to the financial sector about needed investments and investment risks emanating from climate change in Armenia; and • Identification of priority legislative actions in order to clearly identify and provide a timeline for preparation for critical actions- but need to be undertaken by financial institutions and to allow them to build capacity for these.
	Regulatory Preparation	• Consideration of the establishment of frameworks to allow fintech to play a larger role in green and sustainable finance in Armenia, for example through the introduction of crowdfunding as a way to raise finance; • Assessment of risk frameworks to enable the preferential treatment of risks taken where these are aligned with the objectives of the Paris agreement, for example by having lower capital requirements for green lending where such an approach is possible under Basel 2; • Introduction of mandatory reporting requirements similar to the French article 173 law and/or transposition of TCFD requirements and o Introduction of regulations such as national and/or international taxonomies to identify green and sustainable investments in a way that is compatible with international approaches
	International Development Preparation	• Further develop cooperation with multilateral and bilateral partners in order to enhance access to donor funds and technical support to be able to provide investment support to both financial institutions (through capacity building and project preparation) and borrowers, to the provision of grants and or reduced interest rates; and • Proactive participation in international networks dedicated to green and sustainable finance and • Further develop the capacity of Armenia to access donor climate finance.

	Strategic Preparation	• Adoption of a long-term strategy that is aligned with the objectives of the Armenian government and the Paris agreement, and tracking the government's adopted road map for the transformation of the financial sector in Armenia towards more green and sustainable lending.
	Fund-raising Preparation	• Adoption of international standards for the tracking of green and sustainable lending operations including the building of internal capacity; • Undertaking of a comprehensive risk assessment off the existing long portfolio against medium- and long-term climate change risks affecting Armenia; • Build long-term relationships with DFIs, investors, and development partners working with financial institutions around which the transition of the business can be structured; and o Upgrading reporting of operations to comprehensively inform investors about the environmental impact of the loan portfolio.
	Operational Preparation	• Development of enhanced screening of possible lending operations against the Paris agreement objectives and climate risks; • Building capacity to be able to comprehensively report on the long portfolio and shift direction in landing into green and sustainable lending to become more fully aligned with the long-term direction of the international financial system; • Development, as appropriate, of internal project preparation and screening procedures in order to develop a better understanding of the flow of green and sustainable finance lending operations from the existing and potential client base in Armenia; • Utilization of a wider range of products including equity and guarantees in order to be more flexible with the provision of funding for green and sustainable projects and to balance overall risks in the transition of the lending portfolio towards green and sustainable finance; and • Development of new products, such as blended finance operations with donor funds, in order to grow the green and sustainable lending portfolio over time.
	International Preparation	• Participation in international initiatives such as “Mainstreaming climate finance” or the UNEP - FI initiative to learn and become fully integrated into the international efforts to build a worldwide green and financial system; • development, as appropriate, of direct relationships with donors, such as the GCF, DFIs, and other potential partners including filling traffic organizations in order to be able to access funds needed for both internal transformation, capacity building, and support to clients in implementing green and sustainable lending operations.

Report	Recommendation	
Review of regulatory framework and designing package of recommendations for advancing "green finance" in Armenia	Introducing new laws	Particularly, in the area of Targets & Metrics, there is currently nonregulations could be amended. Therefore, we propose completely new regulation (adopted by the Government of the Republic of Armenia) on these topics: • Regulation defining environmentally sustainable economic activities (similar to EU Taxonomy) • There is no regulation on disclosure of e.g., metrics and targets used to assess and manage sustainability risks (similar to EUSFDR)
	Amending existing regulations	Law • Law on Securities Markets • RA Law on Investment Funds • Law on Insurance and Insurance Activities • Law on Audit Activity • Law on Accounting • Law on Joint Stock Companies • Law on Limited Liability Companies Regulation • CBA Regulation 4/04 "Prospectus and Reports of the Reporting Issuers" CBA Regulation 4/07 "Requirements On Investment Services Providers' Activities" • CBA Regulation 10/06 "Minimum Requirements to Internal Controls and Risk Management Mechanisms for Investment Fund Manager" • CBA Regulation 08/03 "Information Publication by Banks, Credit Organizations (and others)" CBA Regulation 3/10 "Minimum Requirements Of Internal Control System Of The Insurance Company". Soft Law • Corp. Governance Code

Report	Recommendation	
Environmental and Social Management System (ESMS)	General Conclusions and Recommendations	• Composition of the ESIA study team–individual(s) and organizations. Specify professional registration and certification status (in those countries where this is required for environmental and social assessment practitioners). • References–written materials used in study preparation. This list is especially important given the large amount of unpublished documentation often used. • Record of consultations–the record of consultations for obtaining the informed views of the affected people and local NGOs should be included. The record should document the public consultation process and its influence on project design and/or implementation. The record should specify any means other than consultations that were used to obtain the views of affected groups and local NGOs. (List community individuals and organizations consulted.) • Specialist studies–include all specialist studies that were undertaken to inform the ESIA, such as ecological flows, hydrological studies, soil surveys, health impact assessment, gender assessment and climate risk analysis. • Terms of reference–include the approved terms for the ESIA and specialist studies. • Authority approval–include correspondence from the environmental authorities regarding the approval of scoping reports, terms of reference, ESIA reports.
Report	**Recommendation**	
Scoping study on private sector engagement for advancing "green finance" in Armenia	Concluding remarks and Recommendations	• 10 recommended investment projects are selected based on the developed evaluation criteria and compliance with GCF Investment Criteria and Country Cooperation program. The full applications of selected projects are forwarded to ArmSwissBank to be further passed to the Ministry of Environment of RA for consideration.

Report	Recommendation	
For the Assignment "Engagement of consulting firm for supporting international consultant in designing curricula and implementation of training on ESS and Gender	Training 1	This training would focus on actual drafting the key components of the Environmental and Social Management System based on IFC PS1 such as: • ES Policy; • ES risk and impacts; • Management Program; • Organizational capacity; • Monitoring and reviewing • External communication. In order for the ESMS to be final, a professional review of the documentation would be required
	Training 2	• Covering the science of climate change and the role of the financial system in the natural world; • Global, international and national policy, regulatory and industry responses to support flows of finance for sustainable growth; • Identifying, disclosing and reporting climate-related financial risks, and other environmental and sustainability risks; • Introducing key sustainable finance frameworks/principles (e.g., UN SDGs, PRI/PRB, TCFD, Green Bond and Green Loan Principles; • Supporting customers in their transition to sustainability; • Overview of green and sustainable FinTech; and • Ethical dimensions of green and sustainable finance, and the role of Green and Sustainable Finance Professionals.
	Training 3	• Introduction to climate-related disclosures – starting the climate journey; • Understanding the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD); • WRI GHG Protocol Corporate Accounting and Reporting Standard Scope 1, 2 and 3; • The Global GHG Accounting and Reporting Standard for the Financial Industry (CFAS, 2020)
	Training 4	Example of Institutions to be covered: • Donors ○ Adaptation Fund;

		○ Climate Investment Funds; • Development Finance Institutions ○ ADB; ○ AFD ○ EBRD ○ EIB; and ○ WB/IFC. • Processes to be covered ○ Environmental and Social requirements
	Training 5	• Main principles overarching the issuance of green bonds; • Requirements for a green bond issuance (from inception to maturity); • Content and characteristics of a green bond framework; • Actors involved in the green bond issuance process, their roles and responsibilities; ○ Green bond labelling schemes, including CBI standard; ○ Market dynamics; ○ Role of regulation and key policy developments around the world; ○ CBI taxonomy and other classification systems; and ○ Green bond certification processes.
	Training 6	Institutions to be covered: • Donors ○ Green Climate Fund; ○ Adaptation Fund; ○ GEF's Non-grant Instrument; o Climate Investment Funds; • Development Finance Institutions ○ ADB; ○ AFD

		○ EBRD ○ EIB; and ○ WB/IFC. Processes to be covered: • Scope and mandate; • Procedures; • Accreditation and partnership framework; • Investment criteria; and • • Reporting requirements.