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Mobilising finance for climate action in Georgia

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This is a draft report prepared by the Secretariat for information at the 2017 Annual Meeting of the GREEN Action Task Force in Almaty, Kazakhstan. This report reviews needs for investment in climate action in Georgia, and available and potential capital sources for such investments. It also examines challenges and opportunities regarding further mobilisation of such finance, particularly for climate change mitigation, from various sources - private and public, national and international. The Secretariat plans to publish the report at the end of 2017.

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Foreword

1. The nationally determined contribution (NDC) of Georgia, communicated to the United Nations Framework Convention on Climate Change (UNFCCC), stresses that substantially limiting Georgia's greenhouse gas (GHG) emissions to meet its climate goals needs to boost investments in low-carbon technologies throughout the country. More broadly, Georgia's Socio-Economic Development Strategy "Georgia 2020" provides the clear vision for development, highlighting three key principles: fast and efficient economic growth; inclusive economic growth, envisaging the universal involvement of the population in the development process; and rational use of natural resources, ensuring environmental safety and sustainability and avoiding natural disasters. All of them inevitably require further policy reforms to mobilise various sources of finance for the economic growth that is green, stable and inclusive.

2. This report focuses primarily on challenges and opportunities regarding further mobilisation of finance for climate action in Georgia, particularly for climate change mitigation, from various sources - private and public, national and international. Climate-related issues are closely linked to other environmental and energy-related issues, such as air quality, energy security and access, waste management, among others. Thus, the analysis included in the report may also provide insight into finance to address other issues around the country's green growth agenda, for example: energy productivity; air pollution prevention; better waste management; conservation of natural resources and ecosystems; and technologies and innovations that help tackle the issues above.

3. This report is structured as follows. Chapter 1 provides a brief summary of background information and highlights key findings and potential way-forward based on the analysis in the subsequent chapters. Chapter 2 takes stock of various estimates of financial needs for pursuing Georgia's climate action, based on publicly available information. Chapter 3 outlines the overview of key climate policies and targets in Georgia, which are critical to create demand for investment in climate action. Chapter 4 maps and discusses the existing and potential sources of finance for climate action in Georgia to meet the demand. Chapter 5 reviews several policy domains that may not have been designed specifically to address climate change risks, but can have significant influence on the ease of mobilising finance for climate action in the country.

4. This report was prepared as part of the project "International Climate Finance for Eastern Europe the Caucasus, Central Asia", supported by the German Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety and implemented by the GREEN Action Task Force hosted by the Organisation for Economic Co-operation and Development (OECD).

5. Analytical methodologies employed in this report are based on the approaches taken in various OECD work, including OECD (2017) *Investing in Climate, Investing in Growth*, OECD (2015-IEA-ITF-NEA) *Aligning Policies for a Low-carbon Economy*, and

OECD (2015) *Policy Guidance for Investment in Clean Energy Infrastructure*, as well as various ongoing work under the OECD Centre on Green Finance and Investment (<http://www.oecd.org/cgfi/>). The information sources are policy-related documents and database that are publicly available or those provided by the government of Georgia. The OECD also conducted consultations with a range of Georgian stakeholders in both private and public sectors, as well as their development co-operation partners including multilateral and bilateral providers of finance and support. The stakeholder consultations involved the semi-structured bilateral and online interviews between February and April in 2017, as well as via email exchanges. Input was also provided at a “Policy Dialogue on Green Economy in Georgia: Workshop on Green Finance Mobilisation” co-organised by the Ministry of Environment and Natural Resources Protection and the OECD in Tbilisi on the 22nd and 23rd of June 2017.

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Acronyms and abbreviations

ADB	Asian Development Bank
CCEF	Caucasus Clean Energy Fund
CPLC	Carbon Pricing Leadership Coalition
CRS	Creditors Reporting System
DCFTA	Deep and Comprehensive Free Trade Area
DEG	German Investment and Development Company
EBRD	European Bank for Reconstruction and Development
EC-LEDS	Enhancing Capacity for Low Emission Development Strategies Program
EIB	European Investment Bank
EMS	Environmental management system
ESCO	Electricity System Commercial Operator
ESG	Environment, Social and Governance
ESMS	Environmental and Social Management System
EU	European Union
EUR	Euros
FDI	Foreign direct investment
FMO	Dutch Development Bank
GCF	Green Climate Fund
GCPF	Global Climate Partnership Fund
GEDF	Georgian Energy Development Fund
GEEREF	Global Energy Efficiency and Renewable Energy Fund
GEL	Georgian Lari
GHG	Greenhouse gas
GIG	Georgian Industrial Group
GNERC	Georgian National Energy and Water Supply Regulatory Commission
GoG	Government of Georgia
GOGC	Georgian Oil and Gas Corporation
GSE	Georgian State Electrosystem
HPP	Hydropower plant
IDB	Inter-American Development Bank
IEA	International Energy Agency
IFC	International Finance Corporation
IFC	International Finance Corporation
ILO	International Labour Organization
IMF	the International Monetary Fund
IPCC	Intergovernmental Panel on Climate Change
ITF	International Transport Forum
JSC	Joint Stock Company
KTCF	Korea Technical Assistance and Cooperation Fund

LEDS	Low Emission Development Strategy
LULUCF	Land use and land use change
MDBs	Multilateral development banks
MFI	Microfinance institution
MFO	Microfinance organisation
MIGA	Multilateral Investment Guarantee Agency
MoENRP	Ministry of Environment and Natural Resources Protection
MoESD	Ministry of Economy and Sustainable Development of Georgia
MPSF	Municipal Project Support Facility
MtCO ₂	1 000 000 ton CO ₂
NAMAs	Nationally Appropriate Mitigation Actions
NAP	National adaptation plan
NBG	National Bank of Georgia
NDC	Nationally determined contribution
NEA	Nuclear Energy Agency
NEEAP	National Energy Efficiency Action Plan
NIF	Neighbourhood Investment Facility
OeEB	Austrian Development Bank
PPA	Power purchase agreement
PPP	Purchasing power parity
SACE	Servizi Assicurativi del Commercio Estero (the Italian Export Credit Agency)
SEAPs	Sustainable Energy Action Plans
SMEs	Small and medium-sized enterprises
SPV	Special purpose vehicles
TA	Technical Assistance
toe	tonne of oil equivalent
TPES	Total primary energy supply
TPP	Thermal power plant
UNDP	United Nations Development Programme
UNECE	United Nations Economic Commission for Europe
UNFCCC	United Nations Framework Convention on Climate Change
UNIDO	United Nations Industrial Development Organization
USAID	United States Agency for International Development
USD	United States dollars
VAT	Value-added tax
WPP	Wind power plant

Executive summary

6. Georgia has undertaken a wide range of economic reforms and achieved significant improvement in economic and social indicators, while its environmental performance has lagged behind. Having recognised the environmental challenges, the government of Georgia and the Georgian municipalities, often in collaboration with its development co-operation partners, has been actively developing strategic policy documents for climate action and green growth in Georgia. They include nationally determined contribution (NDC), Low Emission Development Strategy (LEDS), National Energy Efficiency Action Plan (NEEAP), and Nationally Appropriate Mitigation Actions (NAMAs). 11 Georgian municipalities have submitted their own Sustainable Energy Action Plans (SEAPs) under the “Covenant of Mayors” initiative. The government of Georgia has also started developing a Green Economy Strategy, a national renewable energy action plan and a Climate Action Plan as an implementation strategy for the NDC.

7. These strategic policy documents for climate action make it clear that Georgia needs to further scale up finance from various sources to implement climate action in the country. There is also a wide recognition in Georgia that finance for climate action should not only benefit the environment, but also enhance business opportunities, technology transfer and job creation, which in turn will contribute to stable and inclusive economic growth. While it is challenging to have a complete picture, the estimated investment needs in some areas are already fairly detailed, such as for energy efficiency measures calculated under NEEAP and LEDS, as well as hydropower projects (about 2.4 billion over the same period). Investment needs for other sectors and topics (e.g. non-hydropower renewable energy and adaptation) remain less detailed or unavailable.

8. Limited availability of low-cost, long-term capital, especially from private sector, in Georgia severely hampers investments in climate- and environment-related projects and other types of fixed assets. This is also exacerbated by high collateral requirements, information gaps in available technologies and financial products, limited capacities in both providers and recipients of finance in Georgia, among others. Finance for climate action from commercial banks, institutional investors and businesses does exist, but is largely concentrated on hydropower, while mobilisation of finance for energy efficiency from these sources remains limited. A national-level, central data depository that collects, collates and maintains information on, for example, loan-level data, performance track records of investment projects and technologies, and hydro-meteorological data, could partly help to solve the issues around information gaps.

9. Despite the progress made in policy development mentioned above, the government of Georgia, together with the National Bank of Georgia (the country’s central bank) and other public and private financial institutions, needs further policy reforms to enable finance to flow to achieve Georgia’s targets on climate change and green growth. Such effort is needed to both (i) drive the demand for investment in climate action within the country, and (ii) enhance the financial system, other sectoral policies and enabling conditions, which are conducive to meeting the demand for such finance.

10. Creating demand for investment in climate action relies on a strong and stable policy signal, reasonably stringent environmental regulations and their enforcement, as well as effective communication to, and engagement with, relevant stakeholders. Georgian enterprises, from small- to large-sized ones, consider stricter environmental policies to be

the most important lever for them to invest in e.g. resource efficiency and cleaner production measures. Georgia's State Procurement Agency can also consider "greening" its public procurement system to promote investment in climate action and to trigger industrial and business model innovation.

11. Ensuring coherence among existing and upcoming climate- and green growth-related strategic policy documents will be crucial to create the demand for finance. Such policy coherence can help to build confidence among Georgian stakeholders, in both public and private sectors, to direct their financial resources to climate action. Better coherence will also help the government of Georgia avoid inefficiency, unexpected obstacles, and confusion among relevant stakeholders at the implementation phase of the measures included in those strategic documents. Further, financing climate action is needed not just at a national-level but also at municipal-level. Municipalities (including large cities such as Tbilisi and Batumi) face severe financial constraints to improve environmental quality and efficiency of their public infrastructure such as transport and public buildings.

12. Further rationalising the energy prices in Georgia will greatly help mobilise finance for energy efficiency measures and smaller-scale renewable projects (e.g. decentralised solar power). Although the Georgian government indeed has taken steps to increase tax rates on certain fossil fuels (e.g. amendments to the Tax Code in 2017), the current energy prices remain too low to attract finance for the measures mentioned above.

13. On the supply side of finance, using a broader range of capital channels than collateral lending would help lower financial cost and complement commercial bank loans, thus scale up finance for climate action in Georgia over time. The government of Georgia and the central bank are making progress in reforming its financial market (e.g. securities market, money market and payment system). This can also offer an opportunity to develop a comprehensive financial sector that is also conducive to green finance mobilisation. Establishing a green bank/fund, or strengthening an existing sovereign equity fund, could help investors mitigate financial risks and costs associated with climate-related projects.

14. Interest in green bonds is increasing in Georgia, although none has been issued as of August 2017. Challenges still exist, such as scalability of projects and the nascent bond market in Georgia. The government, in collaboration with, for instance, the central bank and the Georgian Stock Exchange, can develop its green bond standard or adopt an existing one(s) already developed by other institutions or countries.

15. Microfinance institutions, institutional investors and non-financial sector corporations can potentially be a greater part of the landscape of financial flows to climate action in Georgia. Some microfinance institutions and commercial banks are making progress in designing and providing loan products for climate action.

16. The government of Georgia should fully seize opportunities that stem from the Energy Community Treaty to drive further development of the competitive electricity market. A competitive electricity market, if designed properly, can create a further space for investments in renewable energy and energy efficiency. In parallel, state-owned enterprises in the energy sector, such as the Electricity System Commercial Operator, the Georgian State Electrosystem, and the Energotrans LLC could also act as channels to promote a green growth agenda that the government aims to promote.

1. Mobilising finance for climate action in Georgia: Assessment and recommendations on enabling policies

This chapter describes challenges and opportunities regarding further mobilising finance for climate action in Georgia, based on the analysis conducted in the subsequent chapters. It highlights the importance of (i) coherence among several strategic policy documents on climate change and green growth, (ii) demand creation for financing climate action through enhanced policies and regulations, and (iii) development of the financial market and other enabling conditions which are conducive to further mobilisation of finance for climate action in the country.

17. Georgia is often referred to as “a model of reform” (e.g. the Economist, 2017). Over the past 15 years, Georgia has undertaken a range of drastic reforms including a restructuring of the public sector, deregulation for businesses, a fight against corruption, and streamlining tax- and trade-related rules and procedures. The improved legal framework and capacity of the public sector has resulted in a number of positive results over the past decade, such as strong GDP growth, increased foreign direct investment (FDI) inflows and macroeconomic stability. The Georgian economy has proven its strengths and resilience even when it experienced various external economic and political shocks in the late 2000s. While the country suffers from the slow economic growth in the recent years, its 2.7% GDP growth in 2016 was higher than the average of Eastern Europe, the Caucasus and Central Asia as well as Turkey and the Russian Federation (1.0%) (World Bank, 2017a). In addition, the poverty rate, while still significant, fell from 46.7% in 2010 to 31.5% in 2015¹, driven by higher labour income and redistributive fiscal policy (World Bank, 2017b).

18. At the same time, the pursuit of simpler regulatory frameworks has also kept policies on energy use and environmental quality relatively lenient, including environmental safeguards and regulation as well as market-based mechanisms such as pollution charges (OECD, 2016a; UNECE, 2016). This has also been exacerbated by the limited domestic capacity and capability of the public sector, including the government bodies in charge of environmental regulations and policy-making. Examples of challenges are diverse. The level of air pollution remains high (e.g. from the urban transport systems and automobiles), so is the energy intensity of the economy (e.g. at the industrial facilities). Soil erosion is a critical threat to Georgia’s soils. Municipal wastewater pollutes surface water. The sea level rise of the Black Sea is considered to damage the coastal infrastructure. (IEA, 2017; UNECE, 2016; GoG, 2015a). Table 1.1. outlines some key indicators relating to Georgia’s green growth.

19. Having been recognised as a major threat to Georgia’s long-term socioeconomic development, environmental issues, including climate change and air pollution, have gained momentum on the political agenda of the country. The government has been determined to pursue economic growth that is green, stable and inclusive, and the country is increasingly engaged in policy development on climate change and green growth. Indeed, Georgia’s Socio-Economic Development Strategy “Georgia 2020” highlights three key principles of the economic development: fast and efficient economic growth; inclusive economic growth, envisaging the universal involvement of the population in the development process; and

rational use of natural resources, ensuring environmental safety and sustainability and avoiding natural disasters (GoG, 2014).

20. Regarding its climate action, Georgia has communicated internationally its climate targets through its nationally determined contribution (NDC), and developed key strategic documents such as Low Emission Development Strategy (LEDS), National Energy Efficiency Action Plan (NEEAP), and Nationally Appropriate Mitigation Actions (NAMAs), amongst others². Through the NDC, Georgia commits 15% of greenhouse gas (GHG) reduction below Business as Usual (BAU) by 2030, and 25% below BAU contingent on international support with finance and technology. It is also notable that 11 Georgian self-governing cities and municipalities have submitted their own Sustainable Energy Action Plans (SEAPs) under the European Union’s “Covenant of Mayors” initiative, aiming to reduce their GHG emissions voluntarily (Covenant of Mayors, 2017). As of 2017, 18 self-governing cities and municipalities are signatories to this initiative. Georgia also plans to develop more policy documents: such as a Green Economy Strategy, led by the Ministry of Economy and Sustainable Development, and a national renewable energy action plan, led by the Ministry of Energy, as well as a Climate Action Plan as the NDC implementation strategy, led by the Ministry of Environment and Natural Resources Protection. (Chapters 3.1 and 3.2)

21. Finance is a crucial enabler for implementing these policy documents above. This report focuses on challenges and opportunities regarding further mobilisation of finance for climate action in the country, particularly for climate change mitigation. The report looks into various sources of finance for climate action –private and public, domestic and international. The analysis included in the report also provides insight into finance to address other issues around the country’s green growth agenda, for example: energy productivity; air pollution prevention; better waste management; conservation of natural resources; and technologies and innovations that help tackle the issues above. Climate risks are closely linked to other environmental and energy-related issues, such as air quality, energy security and access, waste management, water supply and sanitation, among others, and tackling climate change issues typically helps to address other environmental problems as well.

Table 1.1. Green growth indicators in Georgia

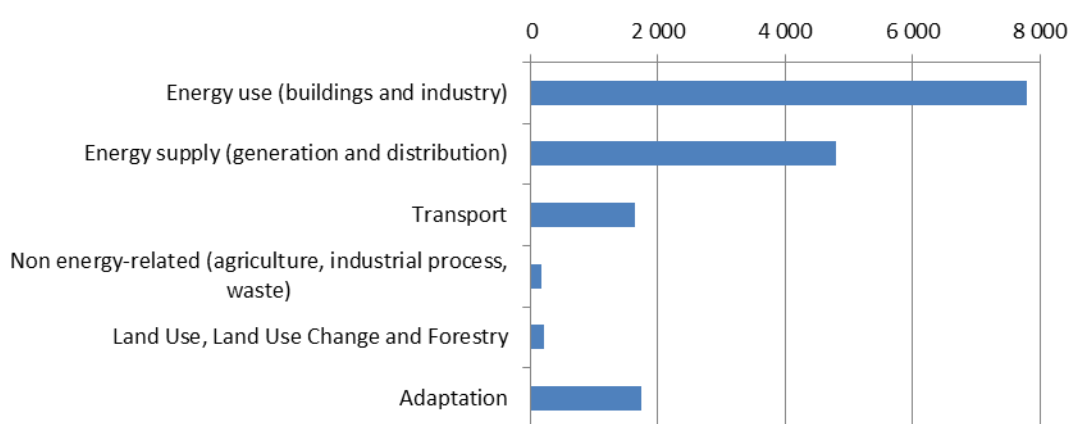
	2000	Latest year available
GDP growth (annual %)	1.8	2.8 (2015)
GDP per capita (PPP, constant 2011 international \$)	1 438.7	4 010.3 (2015)
Unemployment (% of total labour force) (ILO estimate)	10.8	13.4 (2014)
Gini Index (World Bank)	40.5	40.1 (2014)
CO ₂ productivity (US dollars per kilogram of energy-related CO ₂ emissions, 2010)	3.1	4.1 (2014)
Energy productivity (GDP per unit of US Dollar, 2010)	4 931.0	7 277.7 (2014)
Renewable energy (% TPES)	40.3	27.3 (2014)
Forest area (% of land area)	39.7	40.6 (2015)
Agriculture land (% of land area)	43.2	36.8 (2014)
Mean population exposure to PM _{2.5}	16.9	15.9 (2013)
Development of environment-related technologies (% all technologies)	9.6	7.9 (2012)

Source: Based on OECD (2017c) and World Bank (2017d)

Investment needs for climate action vs. available and potential sources of finance

22. Georgia’s strategic policy documents for climate action developed recently, including the NDC, LEDS and NEEAP, make it clear that Georgia will need to further scale up finance for implementing climate action from the various sources. Sectors and activities that require finance for their climate action are diverse. Chapter 2 takes stock of publicly available information on various estimated financial needs for energy use (e.g. buildings and industry), energy supply (generation and distribution), transport, land use, land use change and forestry (LULUCF), non-energy related GHG emissions (e.g. agriculture, industrial process and waste) and climate change adaptation, which are also summarised in Figure 1.1.

Figure 1.1. Stock-taking of long-term investment needs (USD million)



Note 1: Further disaggregated estimates are available on Figure 2.1 in Chapter 2.1.

Note 2: Cost estimation methodologies may differ among the information sources. Therefore, this figure does not aggregate the numbers across the sectors.

Source: Author’s analysis, based on EBRD (2015), GEDF (2017), GoG, (2015a; 2015b; 2016) and NEEAP Expert Team (2017)

23. There is also a wide recognition in Georgia that finance for climate action should not only benefit the environment, but also enhance business opportunities, technology transfer and job creation, which in turn will contribute to stable and inclusive economic growth. Some Georgian companies have already started to see “green” investments as an opportunity such as diversifying their business portfolios and strengthening their competitive advantages in the emerging new business contexts such as the Georgia-EU Deep and Comprehensive Free Trade Area (DCFTA) and the Association Agreement with the European Union (EU). For instance, JSC Partnership Fund, a sovereign equity fund, has invested in the facility that produces energy efficient construction material (building blocks) of Ytong Caucasus to supply energy efficient building material to the Georgian market (Partnership Fund, 2016). An obligation that Georgia has taken as part of the Association Agreement to ensure energy efficiency construction has driven this investment decision making. (Chapter 4.1.)

24. Estimation of investment needs in some areas is already fairly detailed. For instance, the detailed investment needs are calculated under NEEAP (e.g. the gross investment needs for energy efficiency would be approximately USD 8.3 billion from 2017 to 2030) and LEDS (e.g. USD 10.6 billion for energy efficiency, non-energy related GHG emissions and LULUCF, among others) as well as the third National Communication for

hydropower projects (about 2.4 billion over the same period) (GoG, 2016; NEEAP Expert Team, 2017; Winrock and Remmisia, 2017). The cost estimates for other sectors are less granular or with the greater degree of uncertainty (e.g. for “non-hydro” renewable energy and adaptation projects). The NDC shows that adaptation finance will require finance in the order of USD 1.5 and 2.0 billion from 2021 to 2030, but provides no explanation or reference on how these figures are calculated. While Georgia’s NDC includes mitigation targets that are contingent on international support, it does not show the amount the country will need from the international sources. (See Chapter 2 for more details)

25. Estimating an accurate national-level figure on financial needs for climate action towards 2030 remains challenging for Georgia and many other countries across the world (OECD, 2017a). Further improvement in the estimation of investment needs, especially for priority sectors (energy efficiency, renewable energy, transport, adaptation, among others), can help the government of Georgia prioritise specific projects in the light of the country’s targets on climate change and green growth. Such improvement in needs estimation could also potentially send a stronger signal to investors who may finance these priority projects. Enhancing the estimation of financial needs can include following steps.

- defining what “finance for climate action, or green growth” encompasses,
- defining total financial needs for priority programmes and projects as shown above, and
- identifying financial flows from domestic or international sources or both, depending on the scope of the work (thus tracking the total amount may not necessarily be needed).

26. Whether labelled as climate-related finance or not, various financial sources have already provided finance to, for instance, renewable energy and energy efficiency as well as climate change adaptation, although the total size is still insufficient for the amount needed (GoG, 2016;2015a; NEEAP Expert Team, 2017). Further, financing for renewable energy other than hydropower, energy efficiency in public sector, and resource efficiency and cleaner production especially at small and medium-sized enterprises (SMEs) are particularly underprovided (Chorgolashvili, 2017; Copenhagen Centre on Energy Efficiency, 2017; Singh, et al., 2016; Ministry of Energy, 2017). (Chapter 4.1)

27. Limited availability of low-cost, long-term capital, especially from the private sector, in Georgia severely hampers investments in climate-related projects and other types of fixed assets. The high collateral requirement from banks (e.g. about 220% of the value of the loan) also makes it difficult for Georgian companies, SMEs in particular, to take loans (EU4Business, 2017). A study shows that commercial banks normally do not reach the threshold of uncollateralised loan stipulated by law (25% of total portfolio), implying that the level of risks perceived by commercial banks is likely to be greater than the level required by the regulations (EIB, 2016). A high degree of “dollarisation” of assets in Georgia also may have various implications for mobilising finance for climate action, in addition to various negative effects on the country’s fiscal sustainability and the effectiveness of the monetary policies in general.

28. Based on publicly available data, the review of existing and potential sources of finance for climate action in Georgia suggests that the national and municipal governments, state-owned enterprises and development financial institutions remain the major financial source for climate action. NEEAP, for instance, also assumes that more than 40% of finance for energy efficiency will come from domestic public sources including state-owned entities (Chapter 2).

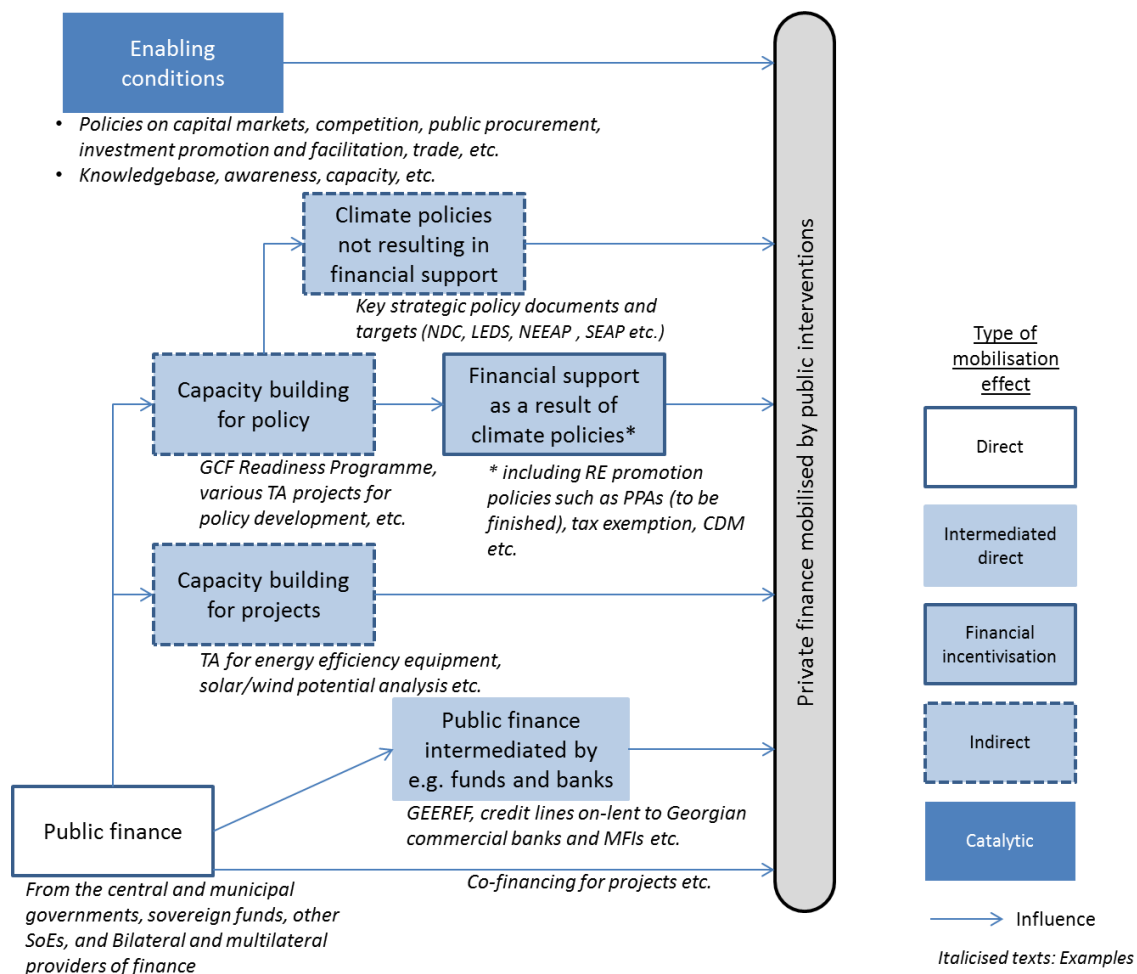
29. Finance for climate action from commercial banks, institutional investors and businesses does exist, but is largely concentrated on hydropower, while mobilisation of finance for energy efficiency, “non-hydro” renewable energy and adaptation from these sources remains limited (Chapter 4.1.). Hydropower projects in Georgia have already attracted a number of private-sector investors and lenders both within and outside of the country. This was made possible by the power purchase agreements (PPAs) and other preferential policies for renewable energies backed by the government. While PPAs have been an essential policy lever for attracting finance in hydropower projects, they have also led to a high degree of financial liabilities born by the Georgian government (IMF, 2017). The government of Georgia is revising the rules on renewable energy development in a way that the government would discuss the terms for each project separately and agree on the individual tariff level.

Ensure coherence between strategic policy documents to mobilise finance for climate action

30. Despite the progress made, the government of Georgia, together with the National Bank of Georgia and other public and private financial institutions, needs further policy reforms to both (i) drive the demand for investment in climate action within the country, and (ii) build the financial system, other sectoral policies and enabling conditions, which are conducive to meeting the demand for such finance. Figure 1.2 illustrates the interaction between different factors that influence mobilisation of finance for climate action (e.g. direct investment, financial incentives, capacity and knowledge enhancement), particularly investment by private-sector sources. The contents of LEDS and NEEAP also imply the importance of both the measures to create demand for climate-related projects, and funding mechanisms to meet the demand.

31. LEDS and NEEAP both have dedicated sections to the financing aspects. They should be complemented and enhanced by a broader policy framework in Georgia, such as on investment promotion and facilitation, capital market development, competition and information base (OECD, 2015; OECD-IEA-ITF-NEA, 2015). Indeed, the government of Georgia plans to significantly raise public investment, starting in 2017 with a focus on road, energy and seaport infrastructure, and the failure to mainstream climate and green growth consideration into such public investment will risk locking in the high GHG emissions from infrastructure over the coming decades. (Chapter 4.1.)

Figure 1.2. Factors that influence mobilisation of private finance for climate action in Georgia



Note: Acronyms: CDM (Clean Development Mechanism), GCF (the Green Climate Fund), GEEREF (Global Energy Efficiency and Renewable Energy Fund), LEDS (Low Emission Development Strategy), MFI (Microfinance institutions) NDC (Nationally Determined Contribution), NEEAP (National Energy Efficiency Action Plan), SEAP (Sustainable Energy Action Plan), PPAs (Power Purchase Agreements) TA (Technical Assistance)

Source: Author based on McNicoll & Jachnik (2017)

32. Ensuring coherence among a dozen of climate- and green growth-related strategic policy documents at the national and sub-national levels will be crucial. Such policy coherence can help to build confidence among Georgian stakeholders, in both public and private sectors, to direct their financial resources to climate action. Better coherence will also help the government of Georgia avoid inefficiency, unexpected obstacles, and confusion among relevant stakeholders at the implementation phase of the measures included in those strategic documents. There has already been some built-in coherence such as the use of the MARKAL Georgia Model for LEDS and NEEAP. On the other hand, overlaps in the sectoral coverages between these policy documents imply that there may be a risk of lack, or insufficient level, of coherence among these key strategy documents (Chapter 3.2.).

33. Financing climate action is needed not only at the national level but also at the municipal level. Municipalities (including large cities such as Tbilisi and Batumi) face

severe financial constraints to improve environmental quality and efficiency of their public infrastructure such as transport and public buildings. Proper implementation and enforcement of the sub-national level policies and mobilisation of necessary finance are of critical importance in order to achieve the national targets on climate change and green growth. National-level strategies should also function as an umbrella for sub-national level strategies.

34. The transport sector is the one of the biggest emitter of Georgia's GHG and air pollutants in the urban areas. While there are sub-national level activities going on such as in Tbilisi and Batumi, a national-level strategy on sustainable transport system has just started to be developed in 2017 (UNDP Georgia, 2017). There is no ministry of transport, but a division under the Ministry of Economy and Sustainable Development, which is responsible for inter-city or inter-municipality transport. There is no governmental body in charge of co-ordination among different sub-national level policy frameworks across the country. There are emerging initiatives by some of the Georgian municipalities and development co-operation partners to facilitate investment projects in municipalities such as, the Municipal Project Support Facility (MPSF), the EBRD's Green City Framework and ADB's Tbilisi Sustainable Urban Transport Programme (Box 3.1. in Chapter 3).

Create demand for climate-related activities

35. Creating demand for investment in climate action relies on a strong and stable policy signal, reasonably stringent environmental regulations and their enforcement, as well as effective communication to, and engagement with, relevant stakeholders. Georgian enterprises, from small- to large-sized, consider stricter environmental policies to be the most important lever for them to invest in e.g. resource efficiency and cleaner production measures (Chorgolashvili, 2017). On the contrary, Georgia is the only country in the Eastern Europe, the Caucasus and Central Asia region, except Turkmenistan, that does not have any quantitative target on introduction of renewable energy or energy efficiency measures as of July 2017. NEEAP is expected to fill this gap by introducing, for instance, energy efficiency targets and specific measures to achieve them (e.g. energy audit and labelling). The government is now starting to develop a national-level renewable energy action plan in the light of the Georgia's compliance with the Energy Community acquis. (Chapters 3.2 to 3.4.)

36. Preferential policy measures (e.g. PPAs and VAT exemptions) for hydropower and its untapped potential have successfully enhanced the hydropower project development in Georgia. While this is good in itself, they may also have made it more challenging to draw private investors' attention to "non-hydro" renewable energy projects. Differentiated tariff policies between hydropower and other types of renewable energy (e.g. higher tariffs for wind, solar and geothermal than for hydropower) could be used to ensure the "level-playing field" between different energy sources. Moreover, attractive short-term lending opportunities, such as retail banking (rather than corporate banking) often exacerbate a shortage of long-term capital that could be mobilised to finance climate action in Georgia. These opportunities are certainly positive for economic growth, but may be making it more challenging to increase profiles of long-term investment in corporate banking and "non-hydro" renewable energy to a certain extent.

37. Further rationalising the energy prices in Georgia will greatly help mobilise finance for energy efficiency measures and smaller-scale renewable projects (e.g. decentralised solar power) which are largely economically unattractive to date (GoG, 2016). Although the Georgian government has taken steps to increase tax rates on certain fossil fuels (e.g. amendments to the Tax Code in 2017), the current energy prices remain low. This

is mainly due to both the low cost of domestic electricity generation especially from large-scale hydropower, and subsidy for natural gas used for supplying electricity and heat (IEA, 2015; OECD, forthcoming; Pavlenishvili & Biermann, 2016; Singh, et al., 2016). (Chapter 3.5)

38. The high social and political sensitivity around the energy subsidies has made discussion on their reform difficult in Georgia, as is the case also in many other countries across the world. Energy subsidies should be means-tested and well targeted only for low income households but not applied across the board for all. Indeed, the energy subsidies in Georgia aim to protect socially vulnerable groups from the impact of increase in electricity and natural gas tariffs (hence called “social gas”) and its level is relatively low (1.4% of GDP in 2014) compared to other Eastern Europe and the Caucasus countries (OECD, forthcoming). Nonetheless, the current energy prices that do not reflect the full cost of carbon emissions have presumably contributed to an increase in natural gas, oil and coal use to meet the country’s growing total primary energy supply over the past few years (i.e. 53% in 2004 to 72% in 2014). (Chapter 3.5.)

39. An increasing number of countries have overcome the political obstacles to starting subsidy reforms, including developing countries such as India, Indonesia and Peru (OECD, 2017a). Successful reforms generally have several features, such as: data on the monetary value of the subsidies; their distribution across beneficiaries; and analysis of how energy-related services, air quality and/or GHG emissions could be improved when prices better reflect costs (OECD, 2017a). An energy subsidy inventory in Georgia, developed by the OECD (forthcoming), can help Georgia facilitate further energy subsidies reforms in Georgia.

40. “Greening” the Georgia’s public procurement system can help to create demand for investment in low-emission goods and services, and to trigger industrial and business model innovation (OECD, 2017a). Georgia’s State Procurement Agency can consider integrating environmental and energy performance criteria into the Law on Public Procurement. The Georgia’s current procurement system works well to ensure competitive public tendering, but does not adequately consider lifetime environmental or energy performance of goods and services (OECD, 2016b; Singh, et al., 2016). The ratio of the government’s current expenditures for purchases of goods and services to GDP accounts for 18.4% (World Bank, 2017), and how the government decides to spend such an amount of money can have a considerable impact on the dissemination of products and services (Baron, 2016). (Chapter 3.6.)

Improving the capital market and other enabling conditions to meet the investment demand

41. Developing a well-functioning capital market has a great potential to help diversify financial channels, lower the cost of investment, complement bank lending, thus enhance the flow of capital, including for climate action, in Georgia over time (MoESD, 2016; OECD, 2017a; 2017b). Currently the role of the capital market is modest in Georgia, and commercial banks held 91.9% of the financial sector assets in 2015, followed by microfinance institutions and credit unions (5.9%) (MoESD, 2016). Public and private sectors have provided equity investments particularly to large-scale renewable energy projects such as hydropower, while much less so for smaller-scale, non-hydro renewables and energy efficiency projects (see Chapter 4.1. for further detail). Non-bank financing channels, such as lease, vendor credits and private-sector energy service companies are very

limited as financial channels for energy efficiency in Georgia, despite its potential to improve risk-return profiles of energy efficiency activities and projects (UNIDO, 2017).

42. Georgia is making progress in developing its financial markets (e.g. securities market, money market and payment system), which can offer an opportunity to develop a comprehensive financial sector that is also conducive to green finance mobilisation. While the climate-, or green growth-, related aspect has yet to become a part of this work, there is a growing interest in this issue shown by the actors working on the financial market development at several fora in Georgia (e.g. IFC, 2017a; OECD, 2017d). The government and the National Bank of Georgia have been reviewing a range of legal frameworks relating to the financial sector regulations. This can provide a basis for examining where potentials exist to “mainstream” climate risks into the individual menus of the current financial market reform in the short- and long-run. Moreover, regardless of whether there is an explicit green mandate built in to the reform of the Georgian capital market, improving the market will have direct and indirect implications for future green finance mobilisation (Chapter 5.1.2).

43. Interest in green bonds is increasing in Georgia, although none has been issued to date (IFC, 2017a). Some major challenges still exist, such as scalability of projects and the Georgia’s nascent bond market. The government of Georgia, in collaboration with the National Bank of Georgia, would also need to develop its green bond standard or adopt existing ones already developed by other institutions or countries. The OECD analysis shows that globally, bond financing for renewables, energy efficiency and low-carbon vehicles could reach USD 620-720 billion per year by 2035 from USD 95 billion in 2016 (OECD, 2017b). Bilateral and multilateral development finance institutions could support a demonstration issuance of green bonds in Georgia by, for instance, purchasing green bonds through a cornerstone investment fund (IFC, 2017b). (Chapter 4.2.)

44. Microfinance institutions, institutional investors and non-financial sector corporations can potentially be a greater part of the landscape of financial flows to climate action in Georgia. Some microfinance institutions (e.g. MFO Crystal) and commercial banks that primarily target SMEs (e.g. JSC ProCredit Bank) are making progress in designing and providing loan products to energy efficiency activities and smaller-scale, often decentralised, renewable energy facilities. Microfinance is however likely to need concessional financing to lower its high interest rates so that it matches with typical characteristics of (e.g.) energy efficiency activities and decentralised renewable energy (e.g. long payback periods, greater levels of technical uncertainty). The Dutch Development Bank, FMO, started to work with MFO Crystal on a green microfinance programme in 2017. (Chapter 4.2.)

45. Georgia is also undertaking a pension system reform (Paresishvili, 2017; World Bank, 2016), which could potentially be a future source of funding for climate-related projects through direct investment or purchase of green bonds. The accumulation of pension fund assets is expected to increase from GEL 313 million (USD 128.8 million) in 2018 to GEL 29.7 billion (USD 12.2 billion) in 2035 (Paresishvili, 2017). However, further clarity is needed as to whether such climate-related projects or green bonds can be eligible asset class for Georgian pension funds. (Chapter 4.2.)

46. There is neither a national development bank nor a green investment bank in Georgia, while investors, commercial banks and corporations active in Georgia could benefit from such a national funding entity to scale up their investments in climate action. LEDS and NEEAP have separately proposed options to set up a public entity with a specific mandate on green finance, which may deliver direct investment in or risk mitigation instruments, or both, to climate-related projects.

47. There is a further need to review the existing public financing entities and mechanisms, and to take a comprehensive approach to mobilise green finance to implement the NDC, LEDS, NEEAP, NAMAs, SEAPs and other key policy documents. Such an approach should also avoid the fragmentation of the financial mechanisms and crowding-out of private-sector finance, and provide investment and/or risk mitigation instruments to underserved sectors (e.g. transport and SMEs) and activities (e.g. energy efficiency and other renewable energy than hydropower). Establishing a new green bank (or fund) may be an idea worth exploring (GCF, 2017; Giorgobiani & Brandt, 2017; Winrock and Remissia, 2017). Yet, it might also be sensible to strengthen the functions and/or scale of an existing state fund or entity, such as JSC Partnership Fund, JSC Georgian Energy Development Fund (GEDF), the Enterprise Georgia and the Municipal Development Fund, so as to have a greater support for “green” aspect within their own mandates. The latter can be supported by the review of national financial institutions in terms of their current expenditure on climate-related activities and their needs in terms of gaps in information, capacities and institutional arrangements. (Chapter 5.1.3.).

48. A comprehensive stocktaking and review of risk mitigation instruments that are available or missing in the country can be useful. A range of domestic and international providers of public finance has deployed various risk mitigation instruments for climate action in Georgia, such as credit enhancement mechanisms and direct public investment. Examples include fixed tariffs agreed by the government for renewable energy, (partial) credit guarantees, fund seeding through sovereign funds (e.g. the GEDF and the Partnership Fund), cornerstone stake investment (e.g. GEEREF), among others. Nevertheless, there is still a great level of demand for low-cost financing, and the Georgia’s fiscal space is limited. Thus, making the efficient use of the available risk mitigation instruments and identifying important risks that have not been adequately covered in the country are both important to improve the risk-return profiles of climate-related projects. (Chapter 5.1.3.)

49. Open, competitive and unbundled electricity markets, if designed properly, create more space for renewable energy in developing countries including Georgia (OECD, 2015). In this regard, the government should fully seize opportunities that stem from the Protocol concerning the Accession of Georgia to the Treaty establishing the Energy Community (Energy Community Treaty) in order to promote further renewable energy and energy efficiency development. Georgia has a well-functioning power sector in general, but assessments by multiple organisations have concluded that creating a more competitive and transparent electricity market remains a critical challenge to the country (ADB, 2015; Energy Community Secretariat, 2017; Kochladz et al., 2015). (Chapter 5.2)

50. On the other hand, state-owned enterprises in the energy sector, such as the Electricity System Commercial Operator (ESCO), the Georgian State Electrosystem (GSE), and the Energotrans LLC can also act as channels to promote a green growth agenda that the government aims to implement. Georgia’s green growth agenda could be pushed through, for instance, preferential financing and taking influence via the board (Prag & Röttgers, 2017). NEEAP also proposes loss reduction in electricity transmission networks and grid integration of new generation by GSE and modernisation of railways by the Georgian Railways, among others. (NEEAP Expert Team, 2017). However, it should be noted that such a way of promoting green growth agenda through state-owned entities must not be used as a justification for keeping an uncompetitive energy market. (Chapter 5.2)

51. To bridge the information gap, the government of Georgia could establish, or help establish, a central data depository that collects, collates and maintains information on, for example, loan-level data, performance track records of investment projects, and technologies

and hydro-meteorological data. Georgia's first Biennial Update Report (submitted to UNFCCC) describes the lack of data on climate change-related information as chaotic, dispersed, inaccurate, outdated and unreliable, thus one of the biggest obstacles to climate change action in Georgia (GoG, 2016). One lesson from the credit line products for renewable energy and energy efficiency is that better understanding among potential borrowers about energy efficiency technologies and their cost-benefit profiles could have expedited disbursement of the credits. A range of countries are also active in setting up learning networks and platforms in order to improve information flows, raise awareness of benefits from green investment and good national and international practices, and enhance analytical capabilities (Chapter 5.3)

Notes

¹ Based on the poverty line of USD 2.5 per day purchasing power parity (PPP)

² During the drafting period of this report, LEDS and NEEAP were still under review by the government. Thus, this report referred to the draft documents for LEDS and NEEAP prepared by Winrock International and Sustainable Development Center Remissia (for LEDS) and the NEEAP Expert Team (for NEEAP).

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2. Investment needs for achieving Georgia's climate targets

This chapter takes stock of investment needs to achieve Georgia's climate targets. The Georgian government and its development co-operation partners have estimated investment needs for the country's climate action, but information on the estimates is often fragmented in different policy documents. Thus this chapter review several publicly available information sources and attempts to an overview of the needs for finance towards 2030.

52. An analysis of Georgia's strategic policy documents reaffirms that massive investment will be needed to achieve the country's targets on climate change and green growth agendas. It is a challenging task to estimate investment needs for climate action to achieve the given targets such as in the Nationally Determined Contribution (NDC). Georgia, like many other countries, has not yet determined the total volume of national-level investment needs until 2030. In general, it remains technically demanding to define what to be counted as finance for climate action, make a precise estimation of investment needs (both gross and incremental), define timeframes, prioritise sectors and projects, and identify specific financial sources, amongst others.

2.1. Stock-taking of investment needs for climate action in Georgia

53. Figure 2.1. intends to take stock of investment needs in the light of Georgia's climate-related targets under the Nationally Determined Contribution (NDC) and the Low Emission Development Strategy (LEDS). The sectors include energy use (e.g. buildings and industry), energy supply (generation and distribution), transport, land use, land use change and forestry (LULUCF), non-energy related GHG emissions (e.g. agriculture, industrial process and waste) and climate change adaptation. The stocktaking is based on the policy documents and other publicly available information. Information shown in Figure 2.1. is by no means sufficient to obtain a complete picture of financial needs towards 2030, and the methodologies for estimation might have been different across the documents.

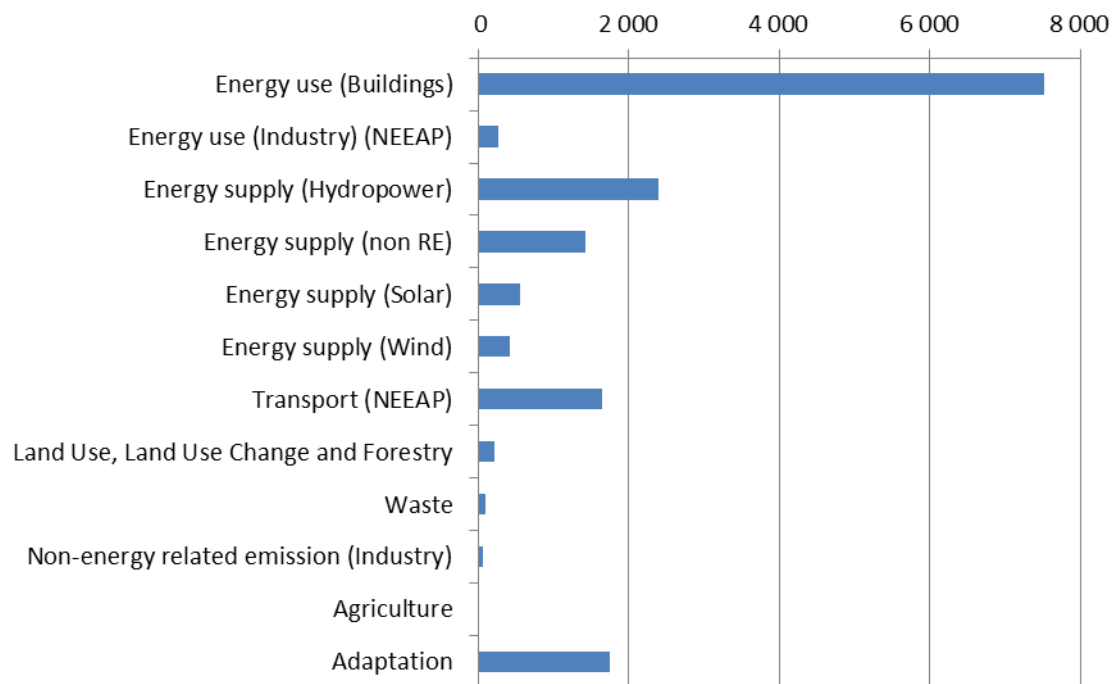
54. Various policy documents in Georgia offer several useful, yet slightly fragmented, information on potential costs of climate action in the country. For instance, LEDS estimates long-term investment needs for nearly 40 measures in various sectors, while a number of other measures (e.g. policy reforms) are still to be calculated (Winrock and Remmisia, 2017). The National Energy Efficiency Action Plan (NEEAP) shows that the total gross financial needs to implement the energy efficiency measures under NEEAP are expected to be approximately USD 8.3 billion from 2017 to 2030. NEEAP contains the cost estimates of seven thematic measures, including for buildings, industry, transport, energy supply and demand sectors as well as horizontal measures (NEEAP Expert Team, 2017).

55. The estimated costs of developing renewable energy projects, which appear in some policy documents, still seem to require further scrutiny especially for other sources than hydropower. Georgia's third National Communication to the UNFCCC shows that the continued expansion of hydropower development with a cumulative additional capacity of 2 601 MW by 2030 would cost about USD 2.4 billion for the period between 2017 and 2030

(GoG, 2015a). In terms of wind and solar energy, the estimates included in Figure 2.1. only shows information drawn from several documents prepared by the government and financial institutions, such as the Georgian Energy Development Fund (GEDF) and the European Bank for Reconstruction and Development (EBRD) (EBRD, 2015; GEDF, 2017; Ministry of Energy, 2017). Therefore, these estimates do not take into account future financial needs for projects that may potentially be developed by 2030, but have not been committed or considered yet.

56. The NDC contains an estimated cost for adaptation measures, such as climate-resilient coastal infrastructure, water management, and agriculture and forest management, which would amount to between USD 1.5 and 2.0 billion from 2021 to 2030 (World Bank, 2017b). However, the estimation was made on the basis of an expert judgement and no background information is available in the NDC or any other policy documents.

Figure 2.1. Stock-taking of long-term investment needs (USD million)



Note 1: Cost estimation methodologies may differ among the information sources. Therefore, this figure does not aggregate the numbers at the national level.

Note 2: The estimates for the energy use in industry sector and the transport sector are derived from NEEAP, the estimate for adaptation cost is based on the figure included in the NDC, the estimate for hydropower plants is derived from the Third National Communication of Georgia, and the rest comes from LEDS

Source: Author's calculation, based on GEDF (2017), GoG (2015a, 2015b), NEEAP Expert Team (2017) and Winrock and Remmisia (2017)

57. The Ministry of Energy (2017) emphasises the importance of introducing further solar and wind energy projects and outlines potential projects, although there has not been any quantitative target on renewable energy introduction at the national level or a clear

project pipeline to date. The absence of a quantitative target makes it more challenging to provide a credible prospect of investment needs for such renewable energy plants. One estimate by the Ministry of Energy is that ongoing and potential renewable energy projects include 146 power plants (mostly hydropower) with a projected total installed capacity of 5 358 MW, which would require investments amounting to approximately USD 8.8 billion (Energy Community Secretariat, 2017).

58. To complement Figure 2.1., Table 2.1. outlines several “non-hydro” renewable projects, either implemented or planned, which implies a possibility of further increase in the figure on investment needs for renewables summarised in Figure 2.1.. For instance, in 2016, the first Georgian wind power plant, Qartli Wind Farm (20 MW), began operation and is forecasted to generate 88.0 GWh of electricity annually. The Georgian Energy Development Fund is also developing the larger Zestafoni Wind Power Plant Project, whose expected cost will amount to USD 227 million (GEDF, 2017). JSC Caucasian Solar Company is currently conducting feasibility studies on solar energy projects, which plan to be completed in 2018. The total expected installed capacity of these potential solar projects would reach 500 MW and cost around USD 490 million (Ministry of Energy, 2017).

Table 2.1. Examples of renewable energy projects in Georgia, excluding hydropower projects

Type	Main actors involved	Description	Status as of July 2017
Wind	GEDF, GOGC, EBRD, etc.	WPP owned by Qartli Wind Farm LLC, owned by GEDF and JSC Georgian Oil and Gas Corporation (GOGC) as of August 2017, while its shares plan to be sold through the Georgian Stock Exchange .	Installed
	GEDF, and Calik Enerji Sanayi ve Ticaret A.S	Nigoza WPP (installed capacity of 40 MW in Shida Kartli region)	Planned
	GEDF, and Calik Enerji Sanayi ve Ticaret A.S	WPP (a total installed capacity of 120 MW) in the Imereti districts	Planned
	GEDF	GEDF invited investors to express interest in joint development of another WPP in Zestaponi, with an estimated installed capacity of 150 MW	Planned
	GEDF	GEDF conducts feasibility study for Qartli Wind Farm Phase 2 with an estimated installed capacity of 150 MW	Planned
Solar	Tbilisi International Airport	316 KW Solar PV installation	Installed
	Ilia State University	35 KW Solar PV installations	Installed
	JSC Caucasus Solar Company	Feasibility studies to be conducted for " Akhaltsikhe Solar Power Plants 1 and 2 " Gardabani Solar Power Plants 1 and 2 " Gidani Solar Power Plant " Algeta Solar Power Plant " Kaspi Solar Power Plant " Mameuli Solar Power Plant " Saakadze Solar Power Plant " Ksani Solar Power Plant	(Under feasibility study)
	GEDF	A solar power plant project in Udabno, Kakheti region, with the estimated installed capacity of the project of 5 MW	Planned

Note: The acronyms stands for: EBRD (European Bank for Reconstruction and Development), GEDF (Georgian Energy Development Fund), GOGC (Georgian Oil and Gas Corporation), and WPP (wind power plants).

Source: Author’s analysis based on EBRD (2015), GEDF (2017), and Ministry of Energy (2017)

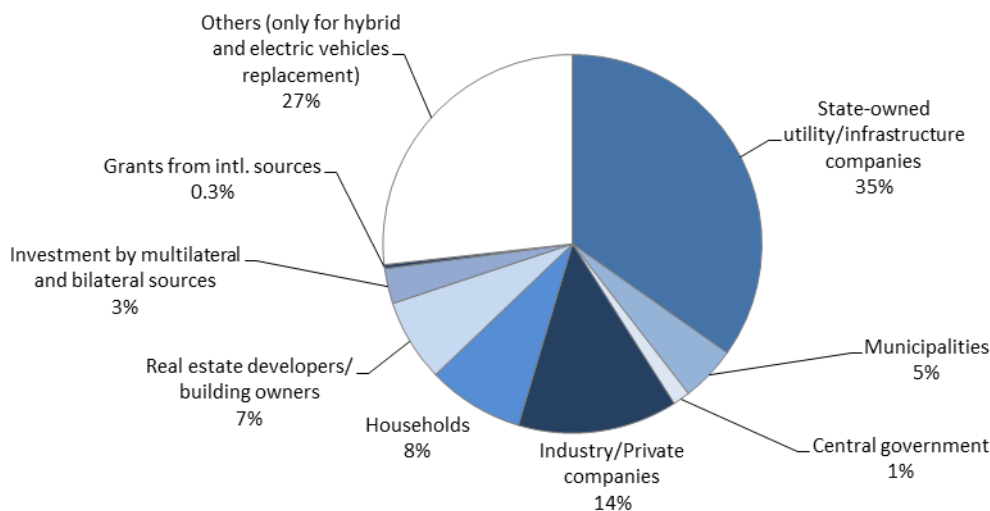
2.2. Capital sources to meet the needs: An example from NEEAP

59. Various sources, including private and public sectors and households, should be used to meet financial needs for climate action in Georgia. For instance, Figure 2.2. shows that the cost estimation conducted under NEEAP divides the energy efficiency costs by source, showing that a substantial share of the finance for energy efficiency should come from domestic public sources including state-owned entities (more than 40%) and domestic and international private sector.

60. These state-owned entities include JSC Georgian State Electrosystem (GSE), JSC Georgian Railway and JSC Georgian Oil & Gas Corporation (GOGC)³, which are expected to invest in or channel finance for energy-efficient infrastructure. For instance, NEEAP proposes: loss reduction in electricity transmission networks and grid integration of new generation by GSE; modernisation of railways by the Georgian Railways; and replacement of old thermal power plants with new technologies by GOGC (NEEAP Expert Team, 2017).

61. NEEAP also expects private sector entities and households to provide a substantial amount of finance, accounting for nearly 30%, or 60% if it includes finance for replacement of passenger transport with hybrid and electric vehicles, of the total estimated investment need. NEEAP does not clarify how much of the private-sector investment should come from domestic sources and how much is provided by international sources. Chapter 4 reviews currently and potentially available financial channels for climate action in Georgia, including those from the private sector sources.

Figure 2.2. Expected financial sources for energy efficiency measures in NEEAP for the period 2017-2030



Note 1: The original estimates were made in Euros. The exchange rate applied is USD 1 = EUR 0.904 according to OECD (2017), Exchange rates (indicator). doi: 10.1787/037ed317-en (Accessed on 14 August 2017) .

Note 2: “State-owned utility/infrastructure companies” include JSC Georgian State Electrosystem, JSC Georgian Railway and JSC Georgian Oil & Gas Corporation.

Source: Author’s calculation based on NEEAP Expert Team (2017)

Note

³ These companies are owned by JSC Partnership Fund , a national fund 100% owned by the Georgian government. Thus they are indirectly owned by the state

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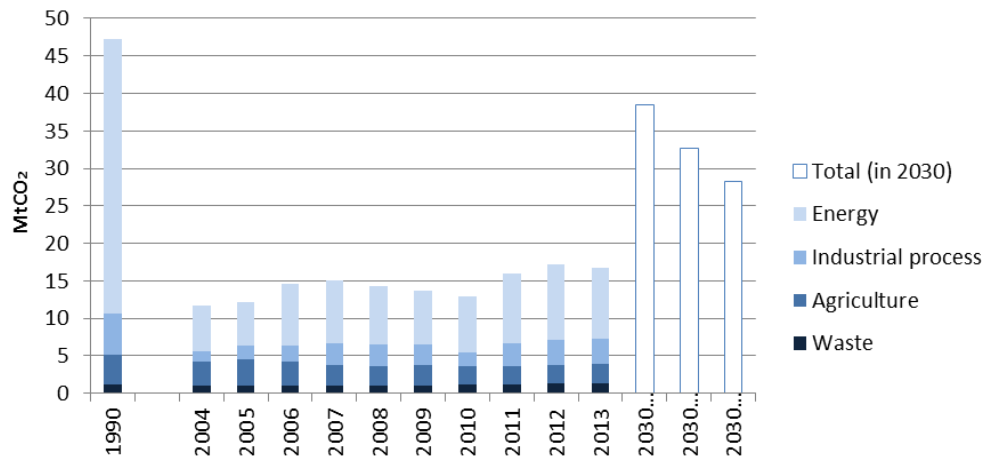
3. Creating investment needs: Overview of climate policies in Georgia

Strong and stable climate policies are essential to create demand for investment in climate action in Georgia. Uncertainty about the climate policies and regulatory frameworks that directly affect business opportunities, costs, risk and returns on investment are one of the most frequently cited barriers to scaling up finance for climate action in Georgia and elsewhere in the world. This chapter provides a brief overview of the country's nationally determined contribution (NDC) and two key strategic policy documents: the Low Emission Development Strategy (LEDS) and the National Energy Efficiency Action Plan (NEEAP), while also touching upon other strategic policy documents related to climate change mitigation in Georgia.

3.1. Outline of Georgia's nationally determined contribution

62. With certain fluctuation, Georgia's greenhouse gas (GHG) emission has increased 3.5% annually on average between 2004 and 2013 (Figure 3.1.). The trend correlates with the economic situations: GHG emissions increased between 2004 and 2007, when economic growth reached its peak, while the emissions declined due to several reasons. These include economic recession resulting from the global economic crisis that started in 2008, the war in the same year, and the increase of hydropower in the electricity generation sector over those years. Since 2011, GHG emissions have increased again due to a combination of several factors. These include revival of the economic growth, subsequent increase in demand for electricity, and the relatively low precipitation thus water resources available for hydropower, as well as the increase of coal consumption in the industry sector (GoG, 2015a).

63. While Georgia benefits from a substantial amount of water resource for hydropower, the largest share of GHG emissions comes from the energy sector (Figure 3.1.). In 2013, GHG emissions from the energy sector amounted to 9.4 MtCO₂, which is about 56% of Georgia's total GHG emission. GHG emissions from the energy sector can be disaggregated as follows: transport sector (33%), manufacturing industries and construction (21%), gas transmission and distribution (19%) and electricity production (10%) (GoG, 2015a).

Figure 3.1. GHG emission trend and NDC targets

Note: GHG emissions here exclude those from land use, land use change (LULUCF).

Source: Author's analysis based on (GoG, 2016; 2015b)

64. As shown in Figure 3.1, and detailed in Table 3.1 below, Georgia's unconditional target under the nationally determined contribution (NDC) is to reduce GHG emissions by 15% below the business as usual (BAU) scenario in 2030. The conditional target that assumes international financial support and technology transfer is to reduce GHG emissions by 25% below BAU in 2030 (GoG, 2015b). In absolute terms, a 15% reduction below BAU means about 32% below the GHG emission in 1990, and a 25% below BAU is approximately 41% below the 1990 level. The Ministry of Environment and Natural Resources Protection is also developing a Climate Action Plan, which will act as an NDC implementation plan, and be meant to include concrete steps and figures for achieving climate-related targets of the country.

65. Georgia's NDC does not indicate in a systematic way the size of finance needed to achieve its GHG emission reduction targets, even for the targets contingent on international financial and technical support. The NDC mentions the level of adaptation finance needed (USD 15-20 billion over the period between 2021 and 2030) but there is no information provided to clarify how these figures have been elicited or any reference to background information that backs the figures.

Table 3.1. Overview of Georgia’s nationally determined contribution

Scope of action	Targets	Priority sectors for mitigation actions
Mitigation	[Unconditional target] To reduce GHG emissions by 15% below the BAU* by 2030	Energy efficiency and renewable energy on both the supply and demand sides
	[Target conditional on international support] To reduce GHG emissions by 25% below the BAU* by 2030	(Same as above)
Adaptation	The main objective is to improve the country's preparedness and adaptive capacity by developing climate resilient practices that reduce vulnerability of highly exposed communities.	Agriculture Disaster risk management Coastal zone protection
Means of implementation	Quantified needs if any	Description
Finance	(The NDC mentions that the more ambitious target is subject to "technical cooperation, access to low-cost financial resources and technology transfer".)	The NDC does not indicate specific figures of need to be supported by international sources, but indicates that the total adaptation costs would be USD 1.5-2 billion in the period 2021-2030
Capacity development	(Same as above)	N.A.
Technology Transfer	(Same as above)	Priorities in the needs for international support for technologies transfer are: the protection of coastal infrastructure; technologies for sustainable water management; sustainable agricultural technologies; and technologies for sustainable forest management.

Note: * BUA: Business as usual

Source: OECD (2016a) based on GoG (2015b)

66. The adaptation section of the NDC mentions agriculture, disaster risk management and coastal protection against the sea level rise of the Black Sea as priority areas for Georgia. The NDC also outlines types of technologies for which international support is needed, such as technologies for: the protection of coastal infrastructure; sustainable water management; sustainable agriculture; and sustainable forest management. The implementation of adaptation actions will be further elaborated in the country’s national adaptation plan (NAP) that the NDC mentions is to be developed.

3.2. Strategic policy documents on climate action and broader development agenda

67. Strong and stable policy frameworks are the crucial enabler for any country to create demand for green investment. Georgia is making a great progress in policy development on climate and green growth agenda – some are at the national level while others at the sectoral or sub-national level (Table 3.2.). Socio-Economic Development Strategy “Georgia 2020” was adopted in 2014 as a national-level, overarching strategy to pursue sustainable and inclusive economic growth towards 2020 and beyond (GoG, 2014). It covers an extensive range of issues, including macroeconomic policy frameworks, competitiveness of the private sector, development of human resources and access to finance. Georgia 2020 also covers climate-related issues such as renewable energy and energy efficiency promotion.

Table 3.2. Examples of laws and strategic policy documents relating to climate change action in Georgia

Name	Scope	Status	Note
Nationally Determined Contribution Georgia 2020	National	Submitted to UNFCCC in 2015 Adopted in 2014	Communicates Georgia's climate-related targets internationally Identifies priorities and problems to be dealt with to achieve long-term, sustainable and inclusive economic growth, including renewable energy and energy efficiency
Main Directions of the State Policy in Energy Sector	National/ Sectoral	Adopted in 2007	Sets the enhanced use of renewable energy sources as a national priority
Law on Electricity and Natural Gas	National/ Sectoral	Adopted in 1999, amended in 2013	Supports priority use of local hydro, other renewable, alternative and gas resources
State Programme "Renewable Energy 2008"	National/ Sectoral	Adopted in 2008, amended in 2013	Specifies rules and procedures applicable to development of new renewable energy sources
Low Emission Development Strategy (LEDS)	National	Draft finalised as of August 2017	Identifies sectoral strategies and goals to achieve low-carbon development pathways
National Energy Efficiency Action Plan (NEEAP)	National	Finalised, and seeking government approval as of June 2017	Identifies energy emission targets, policy measures and financial needs
Nationally Appropriate Mitigation Actions (NAMAs)	Sectoral	Finalised	Developed NAMAs on biomass energy, buildings, sustainable forest management, transport and hydropower
National Forestry Concept for Georgia	Sectoral	Approved in 2013	Serves as a basis for sustainable development of the forest management and related policy frameworks
Sustainable Energy Action Plans (SEAPs) under the Covenant of Mayors	Municipal	10 SEAPs have been approved and submitted as of 2017	Shows the individual signatory municipalities' commitments to voluntarily reducing GHG emissions
Tbilisi Sustainable Urban Transport Strategy	Municipal/ sectoral	Finalised in 2016	Defines policy directions and priorities on sustainable transport to be implemented between 2015 and 2030
Green Economy Strategy	National/ Sectoral	Under development	Develops green economy interventions in various sectors, which can also lead to higher income and employment
Green City Action Plan of Tbilisi	Municipal	Under development	Presents benchmarking and prioritisation for tasks and defines the long-term Green City vision – within a timeframe of 10-15 years – supported by EBRBD
National Adaptation Plan (NAP)	National	Under development	The first draft of NAP for the agriculture sector is being finalised as of October 2017
National renewable energy action plan	National	Under development	This aims to develop a national policy framework for renewable energy sources, which is also compatible with Renewable Energy Directive 2009/28/EC
Climate Action Plan	National	Under development	This plan is being developed by the Ministry of Environment and Natural Resources Protection as an NDC implementation strategy

Source: Author's analysis based on Giely (2015), GoG, (2016; 2015b; 2014; 2013a; 2013b; 2013c; 2007) MoESD (2017) and UNFCCC (2017)

68. The NDC is Georgia's national targets on climate change mitigation and adaptation by 2030. The NDC does not include information on detailed actions to be taken, or robust examination of financial needs, to achieve the targets. Instead, the NDC refers to other official policy documents on climate mitigation actions, namely the Low Emission Development Strategy (LEDS) and the National Energy Efficiency Action Plan (NEEAP).

69. Georgia finalised LEDS in the middle of 2017 under the Enhancing Capacity for Low Emission Development Strategies Program with the support of the United States

Agency for International Development (USAID) (for more information on the programme, see (USAID, 2017). LEDS aims to support Georgia's transition to a low emission economy through various approaches. This will be achieved through, amongst others:

- identifying main sources of GHG emissions and their future trajectories;
- setting goals and needed policy measures to tackle the barriers to reducing GHG emissions in the selected sectors;
- outlining necessary legislation systems, infrastructure and co-ordination process for implementation; and
- proposing mechanisms to mobilise the national and international financial sources for implementation of LEDS (Winrock and Remmisia, 2017)

70. The government finalised the NEEAP in early 2017, seeking the government's approval as of June 2017. NEEAP documents detailed plans for implementation of horizontal energy efficiency measures, such as financing scheme, energy auditing and performance labelling, as well as sector-specific measures. The latter includes measures on buildings, public bodies, industry, transport, heating and cooling, and energy transformation, transmission, distribution, and demand response (NEEAP Expert Team, 2017). LEDS and NEEAP as well as their potential roles in mobilising finance to achieve Georgia's climate targets are discussed in the following sub-sections.

71. Georgia has also been developing multiple nationally appropriate mitigation actions (NAMAs), which were also meant to be linked with the NEEAP (Mdivani & Hoppe, 2016). Georgian NAMAs focus on:

- adaptive sustainable forest management in Borjomi-Bakuriani Forest District (at the implementation stage)
- energy efficient refurbishment in the public building sector (under development);
- efficient use of biomass for equitable, climate proof and sustainable rural development (under development);
- clean energy production in the Kakheti region (under development) and
- urban transport sector (feasibility study) (UNFCCC, 2017).

Energy efficiency measures as well as the stimulation of a range of renewable energy sources (e.g. wind, biomass, solar and geothermal) are also identified in the Technology Needs Assessment that was finalised in 2012 (GoG, 2012). The NDC also mentions National Forestry Concept for Georgia, which serves as a basis for development of the sustainable forest management and related policy frameworks. The government also plans to develop more policy documents, such as a Green Economy Strategy and a national-level renewable energy action plan.

72. A range of Georgian municipal governments have also developed and submitted their Sustainable Energy Action Plans (SEAPs) under the European Union's Covenant of Mayors initiative. It is notable that 18 self-governing cities and municipalities in Georgia have signed the Covenant of Mayors initiative, of which 11 have submitted SEAPs to voluntarily reduce their own GHG emissions. These SEAPs are expected to significantly contribute to the implementation processes of Georgian climate mitigation actions. Further information on the individual SEAPs can be found in (Covenant of Mayors, 2017; Remmisia, 2017)

73. In addition to those documents discussed above, the government have developed and adopted various legal frameworks for development of renewable energy, especially hydropower. The Main Directions of the State Policy in Energy Sector of Georgia set the use of renewable energy sources as a national priority and stress the importance of relevant legal frameworks, scientific research, necessary infrastructure, and finance from domestic and foreign sources. The Law on Electricity and Natural Gas also highlights the importance of exploiting hydropower and other types of renewable energy in the country, and the State Programme “Renewable Energy 2008” sets out rules and procedures applicable to development of new renewable energy sources and basis for fixed electricity prices under guaranteed power purchase agreements (PPAs). The rules regarding the fixed electricity prices for hydropower and other renewable energy are currently under revision as of September 2017.

74. Georgia does not have a national renewable energy action plan to date, but the Ministry of Energy currently works with the United Nations Development Program (UNDP) to develop such a plan (Ministry of Energy, 2017). This is partly because the existing legal frameworks on renewable energy in Georgia are not fully compliant with the requirements of Renewable Energy Directive 2009/28/EC in the light of the EU-Georgia Association Agreement and the Energy Community Treaty (Energy Community Secretariat, 2017).

Box 3.1. Financing climate action at the municipal-level

75. Municipalities (including large cities such as Tbilisi and Batumi) face severe financial constraints to improve environmental quality and efficiency of their public infrastructure such as transport and public buildings. The municipal budgets are generally too tight to meet all their investment needs for infrastructure and public services, thus infrastructure investment generally requires the allocation of the central government budget and development finance from multilateral or bilateral sources. For instance, the Tbilisi Transport Company's income from subsidies (provided by the municipal government) and fares (paid by users) is not large enough to cover operational costs of the public transport systems (Giely, 2015). The creditworthiness and borrowing capacity of municipalities as well as the existing legal framework do not usually allow them to directly access international development finance without approval of the Ministry of Finance (Singh, et al., 2016). It also remains unclear whether Georgian municipalities are sufficiently creditworthy to issue municipal bonds to finance climate-related projects.

76. In Georgia's urban transport sector, the high level of subsidies to transport fares also exist to make sure that the public transport, such as metro and busses, is affordable for citizens. However, such subsidies also have strained the fiscal space of the municipal and central governments for investment in cleaner (i.e. lower GHG and air-pollutant emissions) and safer transport infrastructure. In the City of Tbilisi, approximately half of the municipal budget allocated for the public transport sector is used for financing the Tbilisi Transport Company (operator of public bus, metro and ropeway system in the city). The City of Batumi is also seeking the EBRD loan to finance electric and Euro 5 diesel-fuelled buses as of 2017.

77. While recognising the importance of transport subsidies reform at some point in the future, municipalities also consider that other low cost, yet effective, policy measures should be taken first to ensure the acceptability of such reform. The city of Tbilisi, for instance, has already been working on development of sustainable public transport system through, for instance, Sustainable Urban Transport Investment Program with the support of the ADB, and developed Tbilisi Sustainable Urban Transport Strategy. Further, Tbilisi City Hall works on bus network restructuring with the support of the ADB, and bus fleet renewal with the loan from EBRD under its Green Cities Framework. City of Batumi also seeks financial support of the EBRD under this framework.

78. In addition, the Municipal Project Support Facility (MPSF) was established in March 2015 and is available for the support of investment projects in municipalities of Georgia and other Eastern European and the Caucasus countries. The support is particularly tailored to the projects to address the objectives of Sustainable Energy Action Plans (SEAPs) under the Covenant of Mayors initiative. The MPSF is funded through the EU's Neighbourhood Investment Facility (NIF), is managed by the EIB. Eligible project types include energy efficiency for public buildings, urban transport, district heating, renewable energy sources, solid waste management, and water supply and sanitation. The Consulting services is also available for the municipalities under the MPSF (European Commission, 2014).

3.3. Need for coherence among the policy documents and strong stakeholder engagement

79. Table 3.3. outlines the NDC, LEDS, NEEAP and the Green Economy Strategy that were relatively recently developed (or are currently under development) with slightly different objectives and scopes. Notably, LEDS and NEEAP contain detailed policy measures and implementation mechanisms (including on finance) to be taken to achieve the targets set under each of the documents. As of September 2017, both LEDS and NEEAP have been finalised and seeking the government's approval.

80. The NDC and LEDS focus directly on mitigation of GHG emissions at the national level, whereas NEEAP provides detailed targets on energy efficiency, planned measures and their expected results in the covered sectors. The Green Economy Strategy will look into economic competitiveness and inclusiveness (e.g. employment) in addition to resource efficiency in the sectors examined. Through the process of the development of the Strategy, the government of Georgia has decided to establish an inter-ministerial working group on Georgia's Green Economy.

Table 3.3. Sector coverage and objectives of national-level strategic documents on green growth and climate action in Georgia

	NDC	LEDS	NEEAP	Green Economy Strategy
Energy supply	•	•	•	
Buildings	(•)*	•	•	
Transport	(•)*	•	•	•
Industry (Energy use)	•	•	•	•
Industrial processes	•	•		
Agriculture	•	•		•
Waste	•	•		
LULUCF	(Annexed)	•		
Tourism	(•)*			•
Construction	(•)*			•
Investment needs	(• Only adaptation)	•	•	?
Mention of funding options		•	•	?
Objective	GHG emission reduction in general (Adaptation also included)	GHG emission reduction in general	Energy efficiency	Improving economic competitiveness while reducing resource use
Co-ordination role	MoENRP	MoENRP	MoE	MoESD

Note 1: (*) These sectors are not explicitly mentioned in the NDC, but considered to be included according to Georgia's GHG Inventory and LEDS.

Note 2: The acronyms stand for LULUCF: Land Use, Land Use Change and Forestry; MoE: Ministry of Energy, MoENRP: Ministry of Environment and Natural Resources Protection; and MoESD: Ministry of Economy and Sustainable Development.

Source: Author's analysis based on GoG (2015b), MoESD (2017), NEEAP Expert Team (2017), and Winrock and Remmisia (2017)

81. Georgia is still likely to need specific legal and/or policy frameworks to implement LEDS and NEEAP. Nevertheless, it is commendable that Georgia now has a clearer pathway to achieve its climate mitigation targets than the time when the INDC was submitted in 2015, and planned policy measures at the national and sub-national levels. For instance, NEEAP outlines policy options such as energy efficiency in public buildings, energy audits, energy labelling, public procurement of energy efficient goods and services, and awareness raising activities. LEDS also outlines a range of policy instruments and needed investment projects for energy generation and distribution, energy use in buildings, transport and industrial facilities, non-energy related GHG emissions, and land use, land use change and forestry (LULUCF), among others. Both LEDS and NEEAP are expected to usefully inform the development of necessary regulatory frameworks to incentivise actors to cut energy use and GHG emissions in the country.

82. Ensuring coherence among these strategic policy documents will be crucial to help Georgian stakeholders, in both public and private sectors, direct their financial resources to activities that contribute to low-carbon and inclusive growth of the country. There is already some built-in coherence such as the use of the MARKAL Georgia Model for LEDS and NEEAP. Nevertheless, overlaps in the sectoral coverages between these policy documents, illustrated in Table 3.3, imply that there may be a risk of lack, or insufficient level, of coherence among these key strategy documents, which could lead to issues at the implementation phase of the measures included in the documents, such as inefficiency, unexpected obstacles, and confusion among relevant stakeholders.

83. Another important next step is to examine how these policies would help Georgia develop actual projects that will be needed to achieve its climate targets. How to manage this process is likely to influence the perception among investors and businesses of whether and how they would like to provide funding to climate-related projects. It is therefore timely to examine now:

- how investors and businesses perceive the development of these policies;
- how these strategic documents can send stronger signals to the investors; and
- what kind of implementation policies and engagement processes with the business sector of various sizes would be needed to enhance financial attractiveness of climate- and environment-related projects.

84. A well-designed communication strategy and stakeholder consultations are likely to help investors, industries, households and the public sector at various levels to appropriately understand these policy documents, targets and options for climate action. Such communication and engagement will be crucial for Georgia to ensure that these strategic documents will strengthen the confidence among investors, and contribute to tackling the information gap (See also Chapter 4.3). The information included in LEDS and NEEAP can be useful input to the further development of a list of climate-related projects that can be designed, financed, and/or constructed in Georgia, especially for energy efficiency and non-hydro renewable energy, as well as reduction of non-energy related GHG emissions.

85. The contents of LEDS and NEEAP imply the importance of both the measures to create demand for climate-related projects and activities, and funding mechanisms to meet the demand. LEDS and NEEAP both have dedicated sections to the financing aspects, which should be complemented and enhanced by a broader policy framework in Georgia, such as

on investment promotion and facilitation as well as the financial market development (OECD, 2015; OECD-IEA-ITF-NEA, 2015).

86. For instance, NEEAP proposes establishing an dedicated agency for promoting investment in infrastructure, goods and services related to energy efficiency (and potentially renewable energy) (NEEAP Expert Team, 2017). This agency could be extra-budgetary and have a longer budgeting period than one year (e.g. two to three years) to allow for flexible provision of financial support to energy efficiency measures. The agency is not meant to be a financial institution. Instead, it delivers grant finance to catalyse public and private sector investment in energy efficiency, and donor co-ordination functions, amongst others. The agency could be capitalised by the government budget allocation first, but potentially by other channels such as the allocation from energy bills, increased excise tax on energy-inefficient vehicles, and/or levy related to energy usage of corporations that failed to meet their energy efficiency targets set in the context of NEEAP (NEEAP Expert Team, 2017).

87. The finance section of LEDS proposes multiple options to mobilising financing for climate action in Georgia, such as developing a climate finance strategy roadmap and establishing a national green investment bank. LEDS also proposes establishing an inter-ministerial body called a Climate Finance Intelligence Task Force, which centrally collects and manages information to support the government with planning, budgeting, policy analysis and design, market intelligence and other services. LEDS also emphasises the importance of making the better use of blended finance and exploring bond finance for climate-related projects and activities (Winrock and Remmisia, 2017).

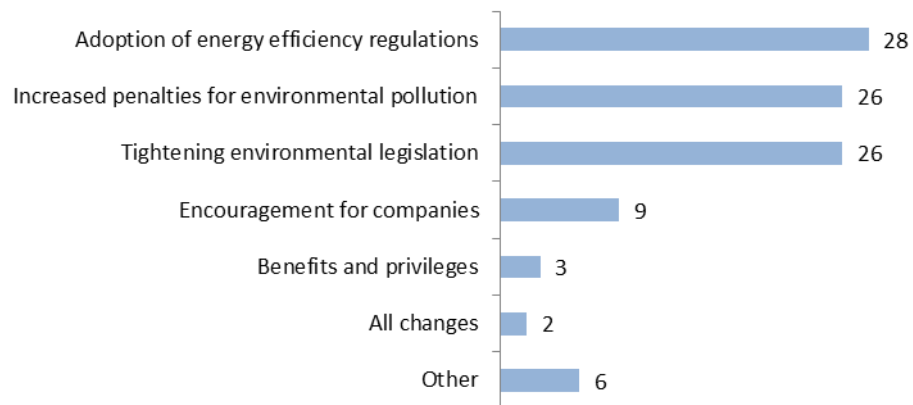
88. Implementing the options to scale up finance suggested by NEEAP and LEDS should be accompanied with an enhanced engagement of the Ministry of Finance and private-sector entities (in both financial and non-financial sectors) as well as civil society organisations over time. Private-sector actors have been involved in the development processes of LEDS and NEEAP, but there seems to be a room for an improved engagement of businesses at even earlier stages of policy development on climate and green growth agendas. Future revisions of the NDC as well as development of the Green Economy Strategy can benefit from the greater level of the private-sector engagement. This will help various ministries of the government further mainstream green issues into the economic development policies and individual business practices, enhance coherence among different policies, and address limited perception of climate- and green-related issues among the business sectors in the country.

3.4. Enhancing environmental regulations to drive investment demand for climate action

89. Georgian enterprises, from small- to large-sized ones, consider stricter environmental policies to be the most important lever for them to invest in (e.g.) energy efficiency and cleaner production measures (Chorgolashvili, 2017). A survey result conducted under a United Nations Industrial Development Organization (UNIDO) project shows important factors that drive finance for resource efficiency and cleaner production by enterprises of various sizes. Those include introduction of stricter regulations regarding energy efficiency and environmental and increased penalties in case of non-compliance, rather than encouragement or additional benefits (Figure 3.2.). In addition to the survey

result, some businesses indeed suggest that complying with stricter environmental regulation as an early mover may create business opportunities for them.

Figure 3.2. Expected changes to regulations that would drive demand for resource efficient and cleaner production (%)

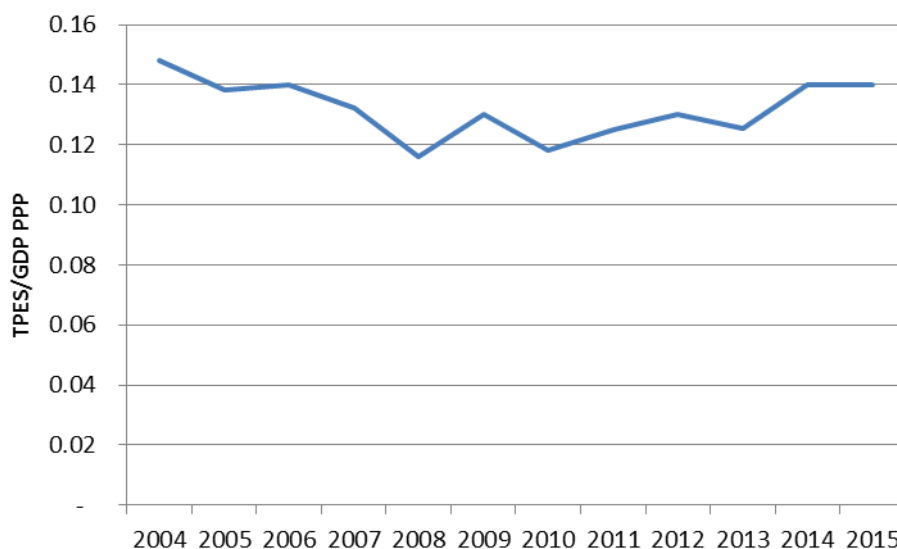


Note: Result from a survey research about opportunities and barriers to promote resource efficient and cleaner production financing in Georgia under UNIDO

Source: Chorgolashvili (2017)

90. While the government of Georgia has adopted a number of laws and policy frameworks, the energy price is not at the level that incentivises energy efficiency finance, and environmental regulations remain relatively lenient. As a result, the energy intensity has not remarkably improved over the past decade, and has even increased in the recent years (Figure 3.3.). As of June 2017, Georgia is the only country in the Eastern Europe, the Caucasus and Central Asia region, except Turkmenistan, that does not have any quantitative target on introduction of renewable energy or energy efficiency measures, while LEDS and NEEAP can, and should, pave the way to enforceable policy measures to achieve the targets under these documents. The Ministry of Energy and UNDP are also now starting to develop a national-level renewable energy action plan.

Figure 3.3. Trends in energy intensity in Georgia (TPES/GDP PPP in toe per USD thousand 2010-price)



Note: TPES stands for Total Primary Energy Supply, and PPP stands for purchasing power parity.

Source: IEA (2017) World Energy Statistics (database), <https://www.iea.org/statistics/>

91. The National Energy Efficiency Action Plan (NEEAP) and potential subsequent legal frameworks to operationalise it are crucial to incentivise businesses and households to take financial products for energy efficiency. Various policy documents adopted over the past two decades have already mentioned the necessity of energy efficiency measures, such as Presidential Decree No 437 on Restructuring of the Power Sector, the Law on Electricity and Natural Gas, the Main Directions of State Policy in the Energy Sector and the Social-Economic Development Strategy of Georgia 2020.

92. Ratifying the Protocol concerning the Accession of Georgia to the Treaty establishing the Energy Community in 2016 should also act as a strong driver for, among others, renewable energy and energy efficiency investments. Signing and ratifying the Protocol will require Georgia to undertake the obligation to implement several EU Directives relating to energy efficiency. Examples include Directive 2012/27/EU on energy efficiency and Directive 2010/30/EU on the indication by labelling and standard product information on the consumption of energy and other resources (due on 31 December 2018). Directive 2010/31/EU on the energy performance of buildings should also be implemented by 30 June 2019. NEEAP already highlights these measures.

93. Further, the need for introducing mandatory energy auditing across the Georgian industry has already been pointed out in several studies and policy documents, including NEEAP. Its implementation however will need to tackle the lack of local skills and expertise in industrial and building energy auditing (GoG, 2016). The draft Spatial Planning and Construction Code also incorporates energy efficiency requirements for construction of new buildings to ensure the highest level of energy efficiency during construction of a building (Energy Community Secretariat, 2017).

94. Table 3.4. illustrates that Georgia has already put in place several climate-related policies, while it is not necessarily a front runner in the field of energy efficiency or renewable energy, compared to other countries in Eastern Europe and Caucasus or in Central European countries with similar levels of GDP per capita (Purchasing Power Parity, PPP).

95. In terms of the transport sector that is responsible for the largest share of the energy-related GHG emissions in Georgia, no effective environmental regulatory measures have been put in place on road vehicles in Georgia. This has at least partly contributed to the increase in the number of outdated second hand vehicles (often without catalytic converters). The large number of outdated second hand cars has led to a substantially high-level of air pollution in the major Georgia cities and GHG emissions from the road transport. Parking fees are also free or very low in cities including Tbilisi. This also encourages the use of cars rather than the public transport.

Table 3.4. Summary of national-level mitigation policies in Georgia and benchmark countries

	GEO	ALB	ARM	AZE	BLR	BIH	MKD	MDA	SRB	UKR
Regulatory policies for renewable energies										
Renewable energy targets		x	x	x	x	x	x	x	x	x
Biofuels obligation / mandate		x			x	x				
Electric utility quotas obligation / Renewable Portfolio Standard		x			x					
Feed-in tariff / premium payments	x	x	x	x	x	x	x	x	x	x
Heat obligation / mandate										
Net metering	x		x		x					x
Tendering (i.e. Public bidding) for renewable energy	x	x				x				
Tradable renewable energies certificates		x			x					
Fiscal incentives for renewable energies and public financing										
Capital subsidy / rebate						x				
Energy production payment	x	x	x	x	x					x
Investment or production tax credits										x
Public investment, loans or grants	x		x	x				x	x	
Reduction in sales, energy, CO ₂ , VAT or other taxes								x		x
Energy efficiency policies										
Energy efficiency target		x			x	x	x	x	x	x
National energy efficiency awareness campaigns	x			x	x	x	x	x	x	
National energy efficiency regulations, standards or laws		x	x	x	x	x	x	x	x	x
Public institution(s) to on energy efficiency strategies and policies	x	x	x	x	x	x	x	x	x	x
Energy efficiency labelling policies					x		x	x	x	x

Note 1: Acronyms are ALB (Albania), ARM (Armenia), AZE (Azerbaijan), BLR (Belarus), BIH (Bosnia and Herzegovina), MKD (Former Yugoslav Republic of Macedonia), MDA (Moldova), SRB (Serbia) and UKR (Ukraine).

Source: Based on UNECE and REN21 (2017)

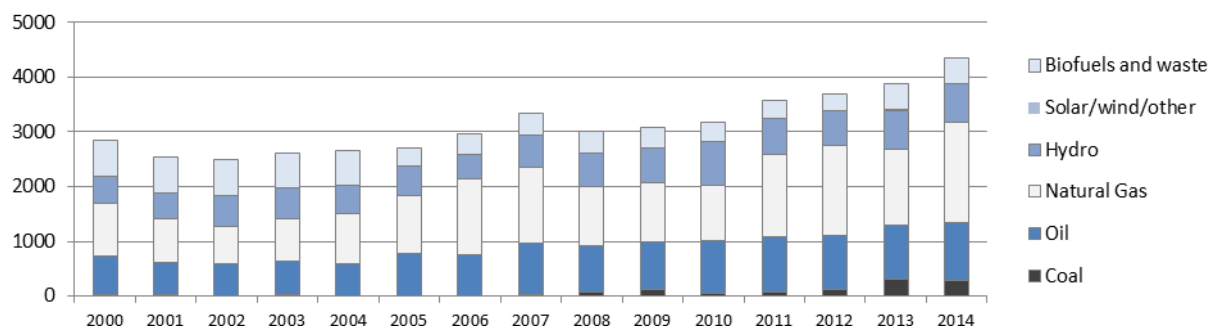
3.5. Need for energy subsidies reform

96. The relatively low energy prices in Georgia greatly help its populations in energy access and affordability issues, but keep energy efficiency measures and smaller-scale renewable projects (e.g. decentralised solar power) economically unattractive. This low level of energy price is due to both the low cost of domestic electricity generation especially from hydropower, and subsidy for natural gas used for supplying electricity and heat (IEA, 2015; OECD, forthcoming; Pavlenishvili & Biermann, 2016; Singh, et al., 2016). For instance, the government-regulated tariff for electricity from Enguri and Vardinili hydropower plants, which together generate more than 20% of electricity for Georgian territory, is lower than 0.1 US cents per kWh (Zachmann, 2015), while the balancing price of electricity in Georgia is consider to be around 5 US cents per kWh (Galt & Taggart, 2016).

97. The market prices of fuels such as natural gas and firewood do not reflect their production costs and are well below the prices for EU industries (GoG, 2016; Singh, et al., 2016). Yet, the energy subsidies in Georgia aim to protect socially vulnerable groups from the impact of increase in electricity and natural gas tariffs (hence called “social gas”) and its level is relatively low compared to other Eastern European and the Caucasus countries (OECD, forthcoming). The size of subsidies to imported natural gas for energy generation and heat distribution is estimated to be USD 228 million, or 1.4% of Georgia’s GDP in 2014 (ibid). These subsidises take the forms of provision of gas at the below market price and Value-Added Tax (VAT) exemptions.

98. The high social and political sensitivity around the energy subsidies has made discussion on their reform difficult in Georgia, as is the case also in many other countries across the world. The Georgian government has taken steps to increase tax rates on certain fossil fuels. For instance, the recent amendments to the Tax Code in January 2017 have caused an increase in the excise tax on fuel and motor oil for vehicles. Development of NEEAP has considered but eventually not explicitly included the energy subsidy reform as a priority measure for energy efficiency.

99. The current energy costs that do not reflect prices on carbon emissions presumably have contributed to an increase in natural gas and coal use in the country’s total primary energy supply over the past few years (see Figure 3.4.), although there seems to be a long list of hydropower projects to be constructed for the coming years. There has been a process of intensive gasification of some regions over the past years, which has improved affordable energy access, given that many of the households used to use biomass for heating and cooking (GoG, 2016). This has resulted from Georgia’s effort to explore all avenues for diversifying energy supply to meet the increasing demand and complement the seasonal fluctuation of hydropower generation (IEA, 2015). At the same time, the gasification also increased GHG emissions and likely become an impediment to development of local renewable energy sources, such as decentralised solar panels (IEA, 2017; GoG, 2012)

Figure 3.4. Total primary energy supply by fuel (ktoe, 2000-2014)

Source: IEA (2017), World Energy Balances of non-OECD Countries 2015

100. An increasing number of countries have overcome the political obstacles to starting subsidy reforms, including developing countries such as India, Indonesia and Peru (OECD, 2017b). Successful reforms generally have several features, such as: data on the monetary value of the subsidies; their distribution across beneficiaries, and how energy-related services, air quality and/or GHG emissions could be improved when prices better reflect costs (OECD, 2017b). A forthcoming OECD stocktaking of energy subsidies in Georgia and other Eastern European and the Caucasus countries could help such reform process by providing data on the monetary value of various energy subsidies (OECD, forthcoming).

101. It would also be useful to analyse the ability of the Georgia's regulatory environment in encouraging competition and firm entry in the light of improving both environmental policies and catalysing private-sector investments. A recent empirical analysis by the OECD, focusing on the OECD and G20 countries, shows that if regulatory restrictiveness is low, an increase in energy prices has positive effect on investment (OECD, 2017b; Prag & Röttgers, 2017). This means that firms will adapt to higher prices by increasing investment. Subject to the data availability, this analysis could be done in Georgia in parallel with analyses of the supply side of green finance.

3.6. Greening public procurement

102. Public procurement rules can potentially contribute to creating significant demand by public bodies for low-carbon, climate-resilient goods and services, hence for finance to purchase them. The ratio of the government's current expenditures for purchases of goods and services to GDP accounts for 18.4% in Georgia (World Bank, 2017). How the government decides to spend such an amount of money can have a considerable impact on the dissemination of products and services, including those which can facilitate climate action in the country (Baron, 2016).

103. Public procurement regulations and procedures in Georgia have evaluated tenders mostly based on their cost, but the energy efficiency performance has not been adequately taken into account as of July 2017 (OECD, 2016b; Singh, et al., 2016). Georgia's regulations on public procurement commendably ensure competitive public tendering in a way that is aligned with EU practices. However, there is still a large room for improvement in using public procurement to promote goods and services that can improve environmental quality and social welfare of the Georgian population. Georgia's State Procurement Agency could and should play an important role in integrating environmental or climate-related requirements into public procurement criteria.

104. There are already planned actions under NEEAP on green procurement on energy efficiency (NEEAP Expert Team, 2017). The public procurement scheme on energy efficiency proposed under NEEAP would be at both national and sub-national levels, aiming to improve the long-term operation and maintenance costs of the state and sub-national governments' property by decreasing energy bills for any procured goods and properties. It would also aim to facilitate the development of markets for energy efficient products and services. This measure would integrate energy efficiency criteria into the public procurement procedures in accordance with the Law on Public Procurement adopted in 2015, and develop a "rule book" for the green procurement scheme (NEEAP Expert Team, 2017). Large cities, such as the City of Tbilisi, can also include technical specifications into their tender documents to promote energy efficient goods and services, such as heating, ventilation and air conditioning, lighting and office equipment, through its public procurement (Copenhagen Centre on Energy Efficiency, 2017).

105. There have already been a number of initiatives across the world to use public procurement as a means to disseminate goods and services with high-environmental performance, some of which are outlined in Table 3.5. Based on the experience of such initiatives and governments, as well as the OECD Recommendation of the Council on Public Procurement, there are some caveats that should be taken into account when designing Georgia's green procurement scheme, such as:

- Balance should be struck between the achievement of environmental/climate objectives and the primary procurement objectives;
- A capacity development component should be built into the green procurement scheme so as to enable workforce to have the capacity to support environmental/climate objectives;
- The benefits and costs of using procurement to achieve the environmental/climate objectives should be monitored and periodically reviewed to inform policy-making; and
- The risk of an overload of objectives should be minimised (Baron, 2016).

Table 3.5. Examples of cross-boundary green public procurement initiatives

Name of initiative	Description	Link
GPP 2020 consortium (Procurement for a Low-carbon Economy)	GPP 2020 brings together local and central government practitioners from some European countries. The consortium provides examples of low-carbon procurement projects and best practice examples, as well as open tenders.	http://www.gpp2020.eu/low-carbon-tenders/
Sustainable Procurement Platform (SPP)	ICLEI (Local Governments for Sustainability) established and manages SPP to share information, case studies, events, guidance etc. on sustainable procurement from across the world.	http://www.sustainableprocurement.org/
The Global Sustainable Consumption and Production (SCP) Clearinghouse	The Clearinghouse consolidates knowledge on sustainable consumption and production from diverse regions and sectors.	http://www.scpclearinghouse.org/

Source: Author's work based on GPP2020 (n.d.), ICLEI (n.d.), and UN Environment (n.d.)

3.7. The level-playing field between different renewable energy options

106. Preferential policy measures for hydropower and its untapped potential have successfully enhanced the hydropower project pipeline development in Georgia, which is generally a good thing, while they also seem to make it more challenging to draw private sector investors' attention to "non-hydro" renewable energy projects. Levelised costs⁴ of wind and solar energy are still higher than most of hydropower-generated electricity and other fossil fuel thermal power plants, and above the current regulated tariffs for the electricity system (e.g. Kühne et al., 2015; Pavlenishvili and Pignatti, 2016).

107. Some Georgian businesses have asked for the level-playing field between hydropower and wind or solar energy, and claiming that differentiated tariff policies and a long-term strategy for non-hydro renewable energy projects are necessary (GIG, 2017). For instance, the government and IMF agreed to set fixed tariffs for renewables at no more than 6 US cents per kWh for eight months a year, which may be profitable for hydropower, but insufficient to make other types of renewable energy projects financially viable in Georgia.

108. Attractive short-term lending opportunities, such as retail banking (rather than corporate banking) often exacerbate a shortage of long-term capital that could be mobilised to finance climate action in Georgia. These opportunities are certainly positive for economic growth, but may be making it more challenging to increase profiles of long-term investment in corporate banking and "non-hydro" renewable energy to a certain extent. Investment decision-makers at financial institutions as well as consumers and project developers tend to favour investments in well-known technologies due to inexperience with alternatives. In addition, financial costs (including interest rates) tend to be higher for green projects, such as energy efficiency projects, than traditional mortgage loans, thus less attractive for financial institutions and borrowers.

Note

⁴ Levelised cost of electricity (LCOE) is the net present value of the unit-cost of electricity over the lifetime of an electricity generating asset.

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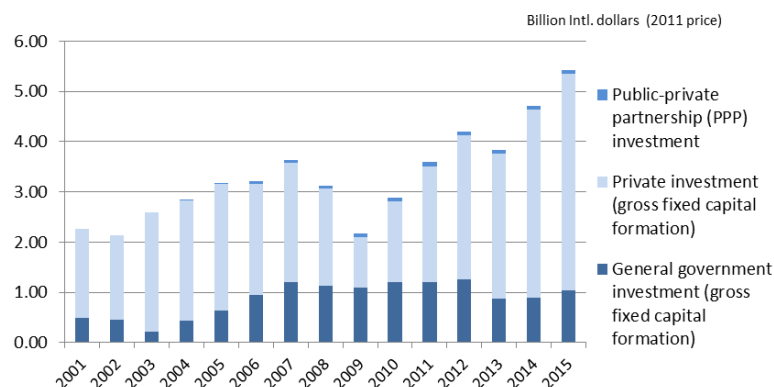
4. Channels of finance for climate action in Georgia

This chapter takes stock of existing financial channels available for a range of climate action in Georgia. These channels include the central and municipal governments, state-owned enterprises, sovereign equity funds, domestic commercial banks and other type of Georgian financial institutions, and bilateral and multilateral providers of development finance. This chapter also explores new financial channels for green finance that may be used for Georgia's climate action in future.

4.1. Stocktaking of financial channels for climate-related investment

109. It is taxpayers and users who ultimately fund development of infrastructure, but national and sub-national governments, public- and private-sector financial institutions, businesses and development financial institutions can often finance various phases of its development. Georgia has already been successfully increasing the private-sector investments in domestic fixed capital stock over the past years (Figure 4.1.). This is largely due to its effort on deregulation, streamlining tax systems, improvement of market transparency, promotional activities, amongst others. After the sharp decline in 2008 and 2009 due to the global financial crisis, investment in fixed capital stock in Georgia has constantly increased, reaching the record high level of USD 5.42 billion in 2015. More than 80% is provided by the private sector investment.

110. Nevertheless, it remains unclear how much of the investment in the fixed capital stock in Figure 4.1. also targets climate change mitigation or adaptation. Typical characteristics of green finance, such as high up-front capital costs, long payback periods, and greater reliance on regulatory frameworks (e.g. prices on carbon) often leads to a greater level of needs for public-sector financing. This is implicitly reflected in the cost estimates conducted under NEEAP as shown in Figure 2.2 in Chapter 1.2, which anticipates that more than 40% of investment in energy efficiency will be financed by central and municipal governments, and state-owned entities.

Figure 4.1. Investment in fixed capital stock in Georgia (2001-2015)

Source: Based on IMF (2017) Investment and Capital Stock Dataset 1960-2015 (January 2017 version)

111. Mobilising further finance to achieve the long-term targets on Georgia’s climate and green growth agendas will require multiple dimensions of efforts. These include:

- scaling-up of finance from already available channels especially in the private sector (e.g. commercial banks);
- a better use of public sector finance from international and domestic sources (e.g. blended finance with a greater catalytic effect); and
- exploring new channels that are not yet commonly used for financing climate action, but have a certain potential in Georgia.

112. Table 4.1 below summarises possible financial channels in terms of (i) major capital sources that can provide finance for climate action in Georgia, and (ii) financial instruments that are available, or can potentially be used in future, for climate action in the country. The following chapters from 3.1.1 to 3.1.5 provide examples and narratives of these existing financial channels, followed by Chapter 3.2 on potentially available channels. Chapter 5 discusses the implication of development of various investment-related policies for mobilisation of financial instruments that could potentially be used in future.

113. In Table 4.1, capital sources are categorised into public and private, and international and domestic institutions. Financial instruments that can be used to deliver or catalyse green finance are also diverse, including: fixed income financing, such as loans and bonds; mezzanine (a hybrid of debt and equity financing) finance; and equity. Risk mitigation instruments and mechanisms can help mobilise finance for climate action. They include risk mitigants (e.g. guarantees, insurance, currency risk protection instruments, and public investments or grants) and transaction enablers (e.g. securitisation, pooling and aggregation). Care should be taken that when focusing on fixed asset and working capital at small- and medium-sized enterprises (SMEs), approximately 80% of financial source is in fact from each company’s internal resources (i.e. balance sheet investment) (EIB, 2016).

Care should be taken that some of the existing financial channels and risk mitigation instruments in Table 4.1 have been regularly used only to hydropower projects to date. These include equity investment and most of the direct lending as well as mezzanine finance by domestic sources and international private-sector financial institutions. Energy efficiency

and other types of renewable energy have much less, or not at all, benefited from these financial channels except for a few cases in wind and solar power projects funded by a sovereign equity fund, the Georgian Energy Development Fund. Moreover, the government of Georgia is planning to reform its policies on power purchase agreements (PPAs) for hydropower and renewable energy in a way that PPAs will no longer be used as a risk mitigation instrument.

Table 4.1. Examples of financial channels already or potentially available for financing climate action in Georgia

(1. Financial channels available; 2. Channels potentially available but not used yet; N/A. Not Applicable)

		Domestic							International				
		Public			Private				Public			Private	
		Central government	Municipal government	Sovereign funds	Domestic commercial banks	Micro-finance institutions	institutional investors	(Non-financial) corporations	Development Banks	Bilateral donors	International climate funds	Financial institutions	(Non-financial) corporations
Debt	Sovereign bonds	1*	2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Corporate bonds	N/A	N/A	N/A	2	2	2	2	1	N/A	N/A	2	2
	Project bonds	N/A	N/A	2	2	N/A	2	2	2	N/A	2	2	2
	Direct lending / Co-investment lending	N/A	N/A	1	1	2	2	N/A	1	1	2	1	N/A
	Green credit-lines extended by IFIs	N/A	N/A	N/A	(Channel)	(Channel)	N/A	N/A	1	1	2	N/A	N/A
Mixed	Mezzanine financing	N/A	N/A	1	1	N/A	1	N/A	1	2	2	2	N/A
Equity	Direct investment	1	1	1	N/A	2	1	1	1	1	1	1	1
	Equity funds	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2	1	2	1	N/A
Risk mitigation instruments	Grants	1	1	2	N/A	N/A	N/A	N/A	1	1	1	N/A	N/A
	Revenue guarantees including PPAs	1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Technical assistance	1	1	N/A	N/A	N/A	N/A	N/A	1	1	1	N/A	N/A
	Interest rate subsidies	1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1	2	N/A	N/A
	Guarantees/Insurance	2	N/A	1	N/A	N/A	N/A	N/A	1	1	2	2	N/A
	Fund seeding	2	2	2	2	2	N/A	N/A	1	1	1	2	N/A
	Currency swaps	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2	2	2	1	N/A
	Securitisation	N/A	N/A	2	N/A	N/A	2	N/A	2	2	2	2	2
Pooling/Aggregation	N/A	N/A	2	N/A	N/A	2	N/A	2	2	2	2	2	

Note 1: N/A stands for not applicable and PPAs for power purchase agreements.

Note 2: * Georgia's Budget Code does not allow for earmarked budget for any purposes including expenditure on climate-related projects.
Source: Author's analysis

4.1.1. Central and municipal governments

114. The central and municipal governments have deployed both direct investment in infrastructure and risk mitigation instruments, for instance, fixed tariffs set under power purchase agreements (PPA) for hydropower and other types of renewable energy projects. Both types of the finance provided by the government seem to constitute a substantial share of green finance in the country. Nevertheless, the government of Georgia is revising the rules regarding tariffs for renewable energy as of October 2017. Under the new rules, the government would discuss the terms for each project separately and agree on the individual tariff/price level. Tbilisi City Hall also invests in energy efficiency in 10 public-sector buildings in the city (Copenhagen Centre on Energy Efficiency, 2017).

115. In terms of capital expenditures by the central government, it plans to significantly raise public investment, starting in 2017 with a focus on road, energy and seaport infrastructure. The government of Georgia plans to increase the ratio of gross public investment to GDP from 6.5% in 2016 to 8% in 2017 and 9% in 2020 (Tan & Dolidze, 2017). Nonetheless, it is still unclear how much of the public investment plans to be directed to climate-related projects.

116. Electricity-sector power purchase agreements (PPAs) agreed between the government, the Electricity System Commercial Operator (ESCO) and the project sponsors have been a crucial risk mitigation instrument for the private sector and many of the development finance institutions to make investment decisions regarding hydropower plants and other types of energy projects (e.g. Qartli Wind Farm project). The government's support for hydropower has aimed at multiple objectives: to create jobs; reduce the overall electricity costs; increase revenue from electricity export; strengthen energy independence; and avoid GHG emissions that would occur if thermal power plants were put in place instead.

117. The large volume of electricity guaranteed by the PPAs, however, can also pose substantial fiscal risks to the government and Georgian state-owned entities in the energy sector (World Bank, 2015). Upon the International Monetary Fund (IMF)'s recommendation, the Ministry of Energy needed to temporarily place a moratorium on the existing PPA policy in 2016, although the moratorium was later suspended (Galt & Taggart, 2016). Subsequently, the government has introduced the standard term and price for the mandatory sale of electricity. The ESCO now purchases the full volume of generated electricity during the eight months of the winter period for a price of up to 6 US cents per kWh, which is slightly less favourable for investors than the earlier terms. As mentioned above, the government is working on the revision of the support scheme for renewable energy project development as of September 2017.

118. Georgian Ministry of Finance has issued sovereign bonds (treasury bonds) with various maturities to foster the development of domestic capital market, which was also driven by investor demand. The coupon has steadily fallen despite some fluctuations, and recently recorded the lowest rate (9.4% in 2017 for 10-year treasury bonds) since its first issuance in 2012. In theory, Georgia could issue a sovereign green bond (discussed in Chapter 4). However, the current Budget Code of Georgia does not allow any specific revenues to be allocated to financing specific purposes, including climate-related activities in Georgia.

4.1.2. Sovereign funds

119. State-owned equity funds, namely JSC Georgian Energy Development Fund and JSC Partnership Fund, provide equity financing to hydropower plants and some emerging “non-hydro” renewable energy. For example, the Georgian Energy Development Fund, together with the Georgian Oil and Gas Corporation, are the shareholders of Qartli Wind Farm, the first wind power plant in the country, as of August 2017. The EBRD provides the project with a 10-year loan of USD 22.0 million. In principle, the Georgian Energy Development Fund is meant to be a minority shareholder of a joint venture for its project, preferably below 30% of equity, or 10% of total project investment costs, and have exit options for the project.

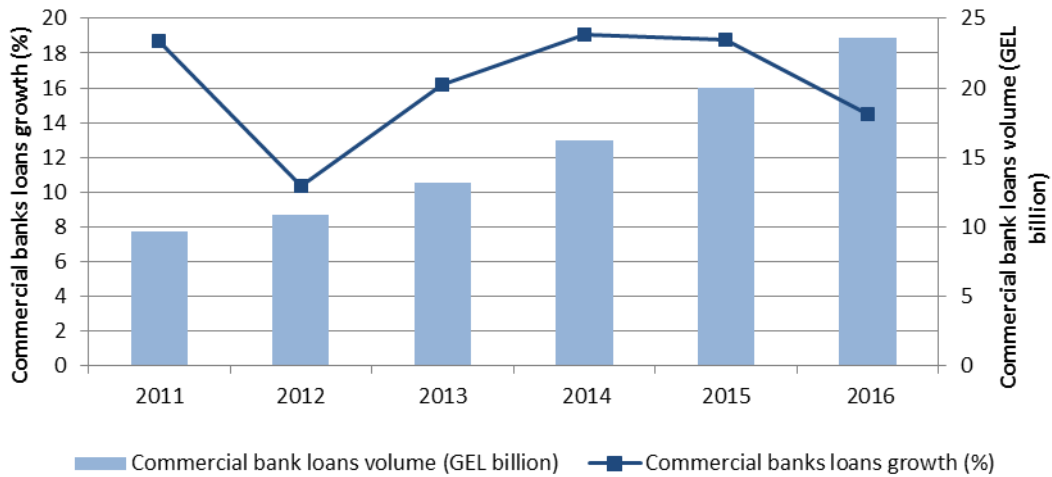
120. The investment in the Qartli Wind Farm may have an important demonstration effect for a wider set of investors towards further development of wind power plants in Georgia. Moreover, the government announced plans for a public offering of the Qartli Wind Farm on the Georgian Stock Exchange in 2017, aiming also to encourage development of the Stock Exchange and raising awareness among citizens regarding Georgia’s wind power potential through opportunities for them to purchase shares of the wind firm (Agenda.GE, 2017). The Georgian Energy Development Fund also plans investments in further wind energy projects (GEDF, 2017).

121. Another sovereign equity fund, JSC Partnership Fund, has also started to seek opportunities for green investment despite no “green” mandate attached to the Fund to date. The Partnership Fund has invested in the facility that produces energy efficient construction material (building blocks) of Ytong Caucasus (Partnership Fund, 2016). The investment decision was by an obligation that Georgia has taken as part of Association Agreement with the European Union (EU) to ensure energy efficient construction. Since there is little availability of energy efficient construction material that is produced in Georgia, the Partnership Fund decided to invest in the factory that would be able to supply energy-efficient construction blocks to the Georgian market and potentially to the markets in the neighbouring countries such as Armenia, Azerbaijan and part of the Russian Federation. Further, the Partnership Fund also provides co-financing to hydropower projects in Georgia.

122. Another sign of possible increase in climate-related investments within the Partnership Fund’s portfolio is that the Fund is currently preparing for its accreditation process for the Green Climate Fund (GCF). Becoming an accredited entity for the GCF will enable the Partnership Fund to directly access the GCF’s financial resources so as to blend finance to scale up further investments in climate action in the country. Despite the often lengthy accreditation process, direct access to GCF is expected to considerably strengthen the ownership of Georgia in accessing, managing and allocating financial resource for climate action and also possibly reduce transaction costs (Masullo, Larsen, Brown, & Dougherty-Choux, 2015).

4.1.3. Domestic commercial banks

123. Georgian commercial banks are a key provider of finance both to infrastructure and building stocks, and to shorter-term assets such as production capital and machinery in Georgia. Commercial banks hold more than nearly 93% of total assets in the country (National Bank of Georgia, 2016), and the scale of commercial bank loans has kept increasing over the recent years (Figure 4.2.).

Figure 4.2. Volume and growth rate of commercial bank loans in Georgia

Note: GEL= Georgian Lari (1 GEL= approximately 0.4 USD as of August 2017)

Source: Author's analysis based on National Bank of Georgia (2017)

124. In Georgia, some domestic commercial banks provide debt financing to certain types of renewable energy, such as large- and small-scale hydropower projects and energy efficiency measures to a lesser extent. For instance, JSC Bank of Georgia, a leading Georgian bank with a 31.5% of market share for loans in the country, has provided debts (loans) to construction of several hydropower projects (Bank of Georgia, 2014). BGEO group, the parent company of the Bank of Georgia, owns a water utility company in Tbilisi, Georgian Water and Power, with hydropower facilities.

Box 4.1. Greening the loan operation and management system of Procredit Bank Georgia

ProCredit Bank Georgia, as a part of the ProCredit group, focuses mainly on financial services for small and medium-sized entities (SMEs) with long-term business plans. ProCredit Bank Georgia was awarded a rating of BB/Stable by Fitch Ratings, which is the highest rating for any Georgian entities and above the sovereign rating.

The ProCredit group incorporates the promotion of environmental awareness and protection, mitigating climate change into a critical part of its business model – both in its business operations, and in the day-to-day work by the staff members. A comprehensive, three-pillar environmental management system (EMS) has been introduced at ProCredit Bank Georgia and the other banks of the ProCredit Group, with the aim of improving both the internal and external environmental impact of the banks’ activities. In 2016, ProCredit Bank Georgia completed the ISO 14001:2015 certification process.

Environmental management and green finance fit with the ProCredit approach to proactively building long-term client relationships. Commitment to environmental management and offering green financing is “a point of differentiation” for the Procredit Bank to acquire, retain and deepen relationships with its clients. It also connects directly to the overarching topic of operational efficiency and productivity, which is vital for SMEs, especially producers, in all markets.

Currently, the Green Loan Portfolio accounts for around 12% of total loan portfolio of the ProCredit Bank Georgia. The bank offers three categories of green loans consisting of investments in energy efficiency, renewable energy, and other investments that have positive impacts on the environment. The ProCredit group defines an energy efficiency investment as one that improves a client’s energy efficiency, for example, the installation of more efficient equipment to achieve significant energy savings. ProCredit Bank Georgia supports for example investments in renewable energy technologies, primarily in solar water heaters; photovoltaic installations; small hydropower plants and wind power turbines; as well as biogas and biomass applications.

ProCredit Bank Georgia not only designs and provides new types of loans for green purposes, but also devotes resources to awareness-raising campaigns and regular training sessions for the bank’s staff, enabling them to improve the environmental performance of the clients. The ProCredit Academy in Germany provides comprehensive training for the staff members at both the bank level and the group level.

To raise customer awareness, ProCredit Bank Georgia started its “Come and See” project. Clients are invited to share their successful experiences with each other, discussing how the ProCredit Bank recommendations have helped them to develop their business and achieve their business objectives.

For further information, see ProCredit Bank Georgia (2017)

4.1.4. Other private sector investors

125. Private-sector investors that can provide finance to climate-related projects in Georgia also include equity funds and (non-financial sector) corporations, whilst finance from these investors remains smaller than loans from commercial banks in Georgia and is mostly concentrated on hydropower. The country's rich hydropower resources, favourable regulations such as income guarantees through power purchase agreements (PPAs), exemptions from Value-Added Tax (VAT), and relatively simple and transparent trade and investment regimes in general have made hydropower projects "investment-grade" asset class (see also WTO (2015)).

126. As shown in Table 4.2., both domestic and international investors and corporations finance renewable energy projects in Georgia. For instance, a Georgian equity fund, JSC Caucasus Energy & Infrastructure, focuses on greenfield investments in small and medium-sized hydropower plants in Georgia. The Georgian Co-Investment Fund is the largest private-sector equity fund in Georgia and also invests in three hydropower projects, including the acquisition of the 48MW Mtkvari Small Hydro Power Plant from JSC Caucasus Energy & Infrastructure, whose construction will be completed in 2019 (Georgian Co-Investment Fund, 2014). A special purpose vehicle sponsored by Norway-based Clean Energy Investment Group, Indian Tata Power and IFC also invests in 178MW Shuakhevi HPP, 9MW Skhalta HPP, and 110MW Koromkheti HPP.

127. Corporations, either Georgian companies or joint ventures with foreign capital, also invest in a number of hydropower projects especially using equity finance from their balance sheet. Georgian Industrial Group, the largest Georgian holding company, owns and operates thermal and hydropower plants with a total installed capacity of 662 MW (Gas TPPs:300MW, HPPs49MW and Coal TPPs 13MW). The Georgian Water and Power Ltd, the largest Georgian water supply and sanitation service provider, has also invested in Zhinvali and Tetrikhevi HPPs. JSC Energo-Pro Georgia, a subsidiary of Czech utility company, owns 15 hydropower plants. Turkish companies also invest in special purpose vehicles (SPVs) and joint ventures for hydropower projects such as Achar Energy 2007 Ltd., Calik Enerji, and Georgia-Urban Energy LLC, which develop and operate a number of hydropower plants. Adjaristqali Georgia LLC is an SPV sponsored by Norway-based Clean Energy Investment Group, Tata Power and the International Finance Corporation (IFC) with the aim to invest in 178MW Shuakhevi HPP, 9MW Skhalta HPP, and 110MW Koromkheti HPP.

128. The Georgian Co-Investment Fund's deal to acquire the Mtkvari Small Hydro Power Plant also implies the potential to explore a secondary market for renewable energy infrastructure investment, which could be boosted by mergers and acquisitions (M&A) and refinancing activities. In theory, refinancing can lower overall financing costs for electricity generation, and potentially freeing up fiscal space of the government (OECD, 2015).

129. Table 4.2. also illustrates that climate-related finance by private sector investors has been largely concentrated on hydropower projects, while private sector investment in wind and solar is still in the early days. In addition, equity financing is still a small fraction of financial instruments used in the country to date, although increasing equity finance is one of the government priorities in the light of its capital market development. Mobilising such equity funds and (non-financial) corporations climate-related projects requires enhanced understanding the appetites and needs of these actors in terms of risk and liquidity in

investments, and their capacity, in addition to robust and stable climate policies and enabling environments for investment promotion (OECD, 2017a).

130. Lease financing, a contractual arrangement in which a leasing company gives a customer the right to use its equipment for a specified length of time (lease term), has a potential to mobilise finance for energy efficiency and renewable energy in general, but is little used in Georgia. The total volume of leasing transactions amounts to GEL 100 million (USD 40.4 million), with SME share slightly over 10% (EIB, 2016). Leasing generally does not require additional collaterals. Thus, leasing could greatly help them to finance fixed assets, including energy efficiency and renewable energy related equipment, given the high collateral requirements for bank loans being a major barrier to Georgian SMEs (see Chapter 5.1.1). Leasing also often offer more flexible repayment structures than general bank lending.

Table 4.2. Examples of private-sector investors in renewable energy in Georgia (excluding commercial banks)

Company name	Description
Achar Energy 2007 Ltd.	A subsidiary of Turkish Eksim Investment Holding A.Ş., investing in Chorokhi Downstream hydropower plant (HPP) Projects
Adjaristqali Georgia LLC	Special purpose vehicle sponsored by Norway-based Clean Energy Investment Group, Tata Power and IFC with the aim to invest in 178MW Shuakhevi HPP, 9MW Skhalta HPP, and 110MW Koromkheti HPP.
Calik Enerji	A Turkish holding company planning to build two wind power plants in Georgia with a total capacity of 170 MW (50 MW in Nigozi, and 120 MW in Sachkhere)
Caucasus Energy & Infrastructure (CEI)	A private equity fund that concentrates on greenfield investments in small and medium-sized HPPs.
Energo-Pro Georgia	Distribution network operator that owns and operates 15 small and medium-sized HPPs with a cumulative capacity of 469MW; as well as one thermal power plant
Georgian Co-Investment Fund	A Georgian private equity fund with 6 billion of asset that invests in, among others, Tskhenistskali cascade HPPs, Oni cascade HPPs, Mktvari HPP
Georgian Industrial Group	The largest Georgian holding company that owns and operates thermal and hydropower plants with a total installed capacity of 662 MW (Gas thermal power plants (TPPs):300MW, HPPs49MW and Coal TPPs 13MW)
Georgian Renewable Power Company	A subsidiary of BGEO Group, holding majority stake in Svaneti Hydro and Zoti Hydro, and participating in Mestiachala-1, Mestiachala-2, and Zoti HPPs
Georgian Water and Power Ltd.	Largest Georgian water supply and sanitation service provider, also Zhinvali and Tetrichevi HPPs
Georgia-Urban Energy LLC.	A company, owned by a Turkish holding company Anadolu Grubu, which has the majority stake of 87MW Paravani HPP
Hydrolea	A Georgian-Bulgarian company that owns and operates the 9MW Akhmeta, and 3MW Debeda HPPs
Peri Ltd.	Georgian construction company that holds stakes in 19MW Larsi HPP, 5MW Khadori-2 HPP, 108MW Dariali HPP, Oni cascade HPPs, amongst others.
Transelectrica	A project company currently working on the 702MW Khudoni HPP project, 34km upstream the Enguri River from the Enguri Arch Dam.

Source: Author's analysis

Box 4.2. JSC m2 Real Estate's investment in electric vehicle chargers

Under a social programme called “More Oxygen in City”, JSC m2 Real Estate, a subsidiary of BGEO Group, invests in the project by E-Space LLC to install electric vehicle chargers throughout Georgia. The programme aims at enabling hybrid and electric cars to cover the distance from Telavi to Batumi on a single charge. The capital expenditure amounts to EUR 100 000, which will be covered by m2 Real Estate's corporate social responsibility programme, and used to install 20 charging stations for EVs. E-Space LLC plans to install up to 100 EV chargers at gas stations, hotels, and supermarkets owned by partner organisations for the coming years. The charging stations can be used free of charge until the end of 2017, while fees will be applied to cover variable and maintenance costs from 2018.

Source: Caucasus Business Week (2016)

4.1.5. Development finance institutions

131. Table 4.1. also shows that international development finance institutions and bilateral donors continue to play a crucial role in mobilising green finance in Georgia. They facilitate green finance mobilisation through not only providing financial resources, but also bringing knowledge, expertise and innovation based on broad experience in Georgia and elsewhere (OECD, 2016; 2017a). Development finance institutions include multilateral development banks (MDBs), bilateral development banks and agencies, and international climate funds.

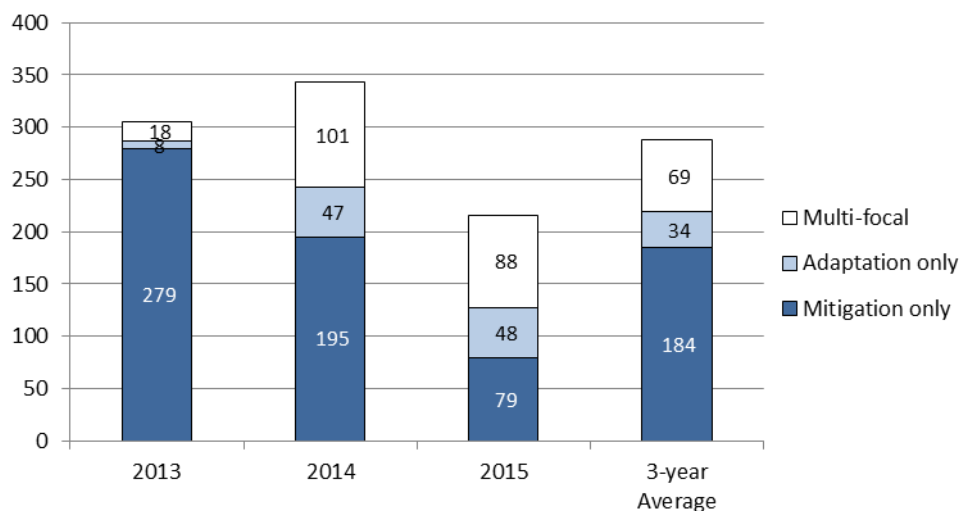
132. Figure 4.3 shows that USD 863 million of climate-related development finance over the period 2013-2015 (USD 287 million per year) was committed by multilateral and bilateral providers of development finance to mitigation and adaptation actions in Georgia in the period 2013-15. Of climate-related development finance committed from 2013 to 2015, 28.5% of mitigation finance and 47.4% of multi-focal (i.e. mitigation and adaptation) finance were committed to hydropower projects.

133. The fluctuations in the annual committed amounts can be attributed to a few large-scale projects. For instance, the hike in the amount in 2014 is partly due to a large-scale project for the Shuakhevi hydropower station construction, supported by the European Bank for Reconstruction and Development (EBRD), which amounted to USD 97.5 million in 2014. This project targets both mitigation and adaptation (multi-focal). In 2013, Germany committed USD 94.6 million to a project that aimed to enhance the electricity transmission capacities in order to strengthen security and quality of the electricity supply and to promote the network connection of renewable energies, especially in hydropower.

134. Another large-scale, multi-focal project committed is European neighbourhood programme for agriculture and rural development Phase 2 (ENPARD II) to which the European Union committed USD 65.6 million in 2015 in order to enhance food production and income in Georgia and to reduce rural poverty while dealing with climate-related risks to these sectors.

135. Given the ease of attracting private-sector investment in adaptation being more difficult than mitigation in general, the role of development finance in filling the adaptation finance gap is important (Pauw, 2015). It is also encouraging that the share of adaptation and multi-focal (i.e. adaptation and mitigation) projects in total committed amount has been increasing over the three-year period in Georgia (Figure 4.3.). Nevertheless, the data shows that the commitment of climate-related development finance to mitigation projects still outweighs adaptation finance in 2013-2015 (i.e. mitigation only projects: 64%, adaptation only projects: 12%, and multi-focal projects: 24%).

Figure 4.3. Annual climate-related development finance committed to Georgia in 2013-15 (USD million per year: 2014 price)



Note1: Total climate-related development finance equals mitigation only + adaptation only – multi-focal. Multi-focal projects mean that their focus includes both mitigation and adaptation.

Note2: The size of the finance is the amount committed, but not necessarily disbursed, by providers.

Source: OECD (2017) Climate-related development finance data at the activity level reported to the OECD DAC Creditors Reporting System (CRS) <http://www.oecd.org/dac/stats/climate-change.htm>

136. In middle-income countries, including Georgia, development finance is increasingly expected to catalyse private-sector investment, rather than provide a large amount of concessional finance. Such catalytic effect would be best performed if the support is aligned with the needs of the private sector entities active in the country. Development finance institutions often take a blended approach whereby they strategically use grants and commercial-term financial resources to, for instance, support households, enterprises, and farmers with taking up energy efficiency and renewable measures. The necessity for a better use of blended finance has also been highlighted in the draft Low Emission Development Strategy (LEDS) as a suggested approach to mobilising investment to achieve the low-carbon development.

137. As summarised in Table 4.3, development financial institutions have extended credit lines to local commercial banks such as Bank of Georgia, TBC Bank and Bank Republic (merged by TBC Bank in 2016) over the past years. Such credit-line programmes mainly aim at financing energy efficiency activities at households and corporations, and renewable energy projects (environmental credit-lines). In middle-income countries,

deploying such on-lent environmental credit-lines through local financial institutions is a relatively well-established way of supporting green investment, including in Georgia. These environmental credit-line programmes often consist of: loan finance for purchasing energy efficient goods or renewable energy equipment; and grants for technical assistance to select and use/operate such products and services.

138. With the support of development finance institutions, local banks in such countries can offer loan products for renewable energy and energy efficiency at lower interest rates than the market rates. However, the reduced interest rates may not necessarily be always sufficiently low for the banks' costumers to take the loan. Lending is also often hampered by different factors, including lack of information on investment opportunities, an insufficient level of technological maturity of certain climate-related projects, high collateral requirements and/or additional charges that the intermediaries (banks) would require to accommodate various transaction costs and risks, such as currency and political risks, currency swap fees, and operational and overhead costs.

Table 4.3. Examples of energy efficiency and renewable energy related credit line programmes by development financial institutions

Programme	Debt provider	Grant provider	Local institutions	Focus	Signed/Approved
Energocredit	EBRD	EU (NIF), Austria, EBRD	Bank of Georgia, TBC Bank, BASIS Bank, CREDO Bank, VTB	EE and RE	2014
FMO-Crystal Local currency loan (partly for green investment)	FMO	n.a.	Microfinance Organisation Crystal	EE and RE	2017
GCF-EBRD Sustainable Energy Financing Facilities	EBRD	GCF, EBRD, KTFC	tbd	EE and RE	2016
GCPF-TBC Bank climate loan facility	GCPF	n.a.	TBC Bank	Primarily in RE (small hydro)	2016
GGF credit line for energy efficiency and renewable energy	GGF (EIB, EBRD, KfW, FMO and OeEB)	GGF (Germany, OeEB and EU)	Bank of Georgia, TBC Bank	EE and RE	2014, 2015
GGF credit line for energy efficient housing	GGF (EIB, EBRD, KfW, IFC, FMO and OeEB)	GGF (Germany, OeEB and EU)	m2 Real Estate	EE	2015
KfW Facility for Promotion of Renewable Energies	KfW	OeEB	Bank of Georgia	RE (Hydro)	2012
SME Energy and Environment loans/ Loan for SMEs and Mid-caps	EIB	n.a.	Bank of Georgia, TBC Bank, Procredit Bank	Supporting SMEs and mid-caps in various fields including EE and RE.	2011-2016
(DCFTA SME Facility)	EBRD	EU (NIF)	Bank of Georgia, TBC Bank	Despite the primary focus being support for SMEs in exporting goods to EU markets, the major part can go to EE	2017

Note: DCFTA (Deep and Comprehensive Free Trade Area), EBRD (European Bank for Reconstruction and Development), EIB (European Investment Bank), FMO (Dutch Development Bank), GCF (Green Climate Fund), GCPF (Global Climate Partnership Fund), GGF (Green for Growth Fund), IFC (International Finance Corporation), KTFC (Korea Technical Assistance and Cooperation Fund), NIF (EC Neighbourhood Investment Facility), n.a. (Information not available), and OeEB (Austrian Development Bank)

Source: Author's analysis based on Bank of Georgia (2014), Energocredit (2016), FMO (2017), GCF (2016), GCPF (2017) and TBC Bank (2015)

139. Development finance institutions also play an important role in bridging the knowledge gap and testing relatively new financial solutions that target a variety of climate- and energy-related issues and risks in Georgia. These institutions also help local financial institutions adopt better management systems that can facilitate investment or lending directed to climate-related projects. For instance, DEG (the German Investment and Development Company –a subsidiary of KfW) has worked with JSC TBC Bank to enable the bank to adopt and implement a formal Environmental and Social Management System (ESMS). The ESMS includes the use of a specific exclusion list to screen project proposals, the appointment of a dedicated Environmental and Social Officer, and the provision of an annual report on Environment and Social performance. A third-party assessment has concluded that TBC Bank is implementing the ESMS to a high standard, ensuring buy-in

from loan officers and commitment by the bank's strong senior management. (Citrus Partners, 2016).

140. Country ownership over accessing and managing development finance to maximise the effectiveness of development co-operation has long been discussed (e.g. OECD-DAC (2005)). It is extremely important for the government of Georgia as well, in terms of its participation in decision-making on project prioritisation as well as implementation and monitoring of the effectiveness of selected projects in the light of the overall goals of the various strategic documents on climate change and green growth.

141. Given one of the Green Climate Fund (GCF)'s primary goals being to enhance country ownership, the government of Georgia and GIZ work on "Readiness" programme to access funding from the GCF with the financial support of the GCF for readiness. The key objective of the programme is to set up of institutional structures for co-ordinated engagement with the GCF (i.e. a climate finance co-ordination mechanism) and for issuance of no-objection letters. The Readiness activities also support the design and implementation of the national dialogue process for the purpose of promotion of prioritisation of the project proposals and elaboration of the concept notes of these projects.

142. As of 2017, JSC Partnership Fund, JSC TBC Bank and the Georgian government also work on "direct access" to the funding resources of the GCF, as discussed in Chapter 4.1.2. While recognising the important role of international entities in delivering climate finance, the country may benefit from pursuing direct access to improve efficiency (e.g. reducing transaction costs), strengthen their ownership over accessing and better using green finance from international sources. Nevertheless, the direct access and access through international entities to the GCF resources should co-exist and complement each other. Indeed, Georgia and its development co-operation partners are actively engaging with the GCF, and its Board has approved two projects that will partly be implemented in Georgia: the GCF-EBRD Sustainable Energy Financing Facilities and GEEREF NeXt with the EIB (GCF, 2017).

4.2. Exploring new financial channels for green finance

143. Using a broader range of financial instruments than collateral lending would help to lower financial cost and complement commercial bank loans, thus to scale up finance for climate action in Georgia over time (MoESD, 2016; OECD, 2017a; 2017b). The market capitalisation ratio of listed companies to GDP in Georgia is around 7% in 2014 which is low compared to, for instance, the low- and middle-income Europe and Central Asian countries (19.5%) and the European Union (52%) (World Bank, 2017). The Capital Market Development Strategy developed by the government of Georgia and the National Bank of Georgia also aims to decrease the degree of the commercial banks' dominance (MoESD, 2016).

144. The Global Energy Efficiency and Renewable Energy Fund (GEEREF), advised by the European Investment Bank (EIB) Group, was launched in 2008 as a public-private investment vehicle, which aims to provide equity financing for the development of small and medium sized renewable energy and energy efficiency projects across emerging markets and economies in transition. Among its investments, GEEREF has committed USD 13 million to an equity fund called Caucasus Clean Energy Fund (CCEF), to support the development of small and medium hydropower plants in Georgia through providing risk capital, alongside technical expertise and best environmental and social practices. Managed by the private-

sector fund manager, Schulze Global Investments Limited, the CCEF has received additional commitments up to USD 50 million from other foreign investors and the JSC Partnership Fund. The CCEF targets 10-20MW hydropower plants.

145. On the other hand, equity financing for companies or projects that contribute to energy efficiency improvement seems to be perceived as riskier, low-return investments in Georgia without concessional equity capitals backed by (international) development financial institutions or sovereign funds (Singh, et al., 2016). Non-bank financing channels, such as leasing, vendor credits and private-sector energy service companies are very limited as financial channels for energy efficiency in Georgia, while they have a potential to improve risk-return profiles of energy efficiency activities and projects (UNIDO, 2017).

146. Green bonds are attracting an increasing interest in Georgia (IFC, 2017), and the government or Georgian corporations could consider issuing green sovereign or corporate bonds. Green bonds have a potential to lower financing and re-financing costs of green investment in corporations and projects (OECD, 2017b), despite several major challenges faced by Georgia, such as scalability of projects and the nascent Georgia's bond market. The government and some large Georgian companies have already issued sovereign and corporate bonds (See Chapter 5.1.), which can be a good basis for future issuance of green bonds. Georgia would also need to develop its green bond standard or adopt an existing one(s) already developed by other institutions or countries. Existing ones include the Green Bonds Principles, the Climate Bonds Standards, and the Green Financial Bond Directive by the People's Bank of China.

147. Bond finance could benefit Georgia's effort for scaling up investments in climate-related projects (especially infrastructure) over time in the following ways. It can also take several forms as outlined in box 4.3.

- helping raise capital directly for climate-related projects, or refinance existing shorter-term loans potentially at a lower cost;
- providing greater flexibility and more options for early project phase capital to be freed up after it has been deployed, as well as for the longer term project finance debt held by banks constrained by deleveraging and regulations (“recycling of capital”); and
- enabling financial institutions to use bonds to resolve maturity mismatches between loans and liabilities. (OECD, 2017b)

148. To help “demonstration issuance” of green bonds, development finance institutions could provide cornerstone investments in Georgia. For instance, Georgia is a target country of the International Finance Corporation (IFC)'s Green Bond Cornerstone Program. This programme is a platform to invest in green bonds issued by financial institutions active in developing countries. Further, as an example from outside of Georgia, the inaugural green bonds in India, issued by Yes Bank, were supported by IFC. Yes Bank is meant to invest the proceeds of the bonds in renewable energy and energy efficiency projects, mainly in the solar and wind sector (IFC, 2015). Another example from outside of Georgia is that the GCF and the Inter-American Development Bank support Colombia, the Dominican Republic, Jamaica and Mexico with aggregating energy efficiency projects to underpin the issuance of partly guaranteed green bonds (IDB, 2015). It would be worth considering replication of such a programme in Georgia.

149. On the other hand, the current Budget Code of Georgia does not allow specific revenues to be allocated or earmarked for specific purposes, including climate-related

activities. There could potentially be issuance of municipal bonds to finance climate-related projects at the sub-national level. However, this would likely require a careful review of the municipalities' credit-worthiness for bond issuance in order to ensure the soundness of the bond market.

Box 4.3. Different types of green bonds

Green bonds could take several forms. OECD (2017b) outlines several different forms and discuss their characteristics. Below lists these different forms of green bonds, which could potentially be used in the context of climate action in Georgia.

1. **Corporate bond** is a “use of proceeds” bond issued by a corporate entity with recourse to the issuer in the case of default on interest payments or on return of principal. A sub-category of it is a financial sector bond, issued by a financial institution to raise capital specifically to finance “on-balance sheet lending” (i.e. to provide loans) to green activities (e.g. ABN AMRO or Agricultural Bank of China).
2. **Project bond** is a bond backed by single or multiple projects for which the investor has direct exposure to the risk of the project, with or without recourse to the bond issuer.
3. **Asset-backed security (ABS)** is a bond collateralised by one or more specific projects, usually providing recourse only to the assets, except in the case of covered bonds (included in this category). For covered bonds, the primary recourse is to the issuing entity, with secondary recourse to an underlying cover pool of assets, in the event of default of the issuer.
4. **Supranational, sub-sovereign and agency (SSA) bonds** are those issued by development finance institutions such as the World Bank and the European Investment Bank (i.e. “supranational issuers”). SSA bonds have features similar to a corporate bond relating to “use of proceeds” and recourse to the issuer. Agency bonds are included in this category (e.g. issuance by export-import banks), as are sub-sovereign national development banks (e.g. the German KfW).
5. **Sovereign bond** is issued by a national government, including Poland that issued the first sovereign green bond in December 2016, followed by France in January 2017. A number of other countries also have indicated their intention to issue sovereign green bonds.
6. **Municipal bond** is issued by a municipal government, region or city.

Source: Based on OECD (2017b)

150. In terms of capital sources, Georgian microfinance institutions can play a greater role in financing Georgia's climate action in the future. Some institutions are starting to see it as a potential business opportunity for them, building on their extensive networks from big cities to small rural villages, as well as on their deep knowledge about their borrowers'

circumstances. Microfinance is however likely to need concessional financing to lower its high interest rates so that it matches with typical characteristics of (e.g.) energy efficiency activities and decentralised renewable energy (e.g. long payback periods, greater levels of technical uncertainty). For instance, Microfinance Organization (MFO) Crystal and the Dutch development bank, FMO, reached a USD 10-million loan agreement, of which USD 1 million plans to be disbursed as green finance (See Box 4.4. for further information).

151. Developing institutional investor base, such as pensions funds, banks, insurance companies, equity funds, REITs (real estate investment trusts), investment advisors and mutual funds, could also help Georgia mobilise finance for actions to achieve its goals on climate change and green growth over time. Some equity funds (the Partnership Fund, the Georgian Energy Development Fund, and the Georgia Co-Investment Fund) and subsidiaries of the large financial groups (e.g. BGEO Group PLC) already act as investors in, for instance, the energy, healthcare, real estate, tourism and manufacturing sectors (BGEO Group, 2017). However, there is still a large room for improvement in terms of mainstreaming climate or green aspects into their portfolios.

152. Pension system reform is also being undertaken in Georgia (World Bank, 2016), which could potentially be a future source of funding for climate-related projects through direct investment or purchase of green bonds. It is not yet clear whether such climate-related projects or bonds can be eligible asset class for Georgia pension funds. The Ministry of Finance and the Ministry of Economy and Sustainable Development estimate that the accumulation of pension fund assets will increase from GEL 313 million (USD 128.8 million) in 2018 to GEL 29.7 billion (USD 12.2 billion) in 2035 (Paresishvili, 2017). The Georgian Stock Exchange expects such pension fund assets to be a significant funding source for domestic economy through debt and equity financing (ibid). A study by the World Bank also stresses the need for diversified asset allocation rather than over-investment in bonds as well as sensible investment regulations on pension funds in Georgia (World Bank, 2016).

Box 4.4. Microfinance Organization Crystal's Green Funding Action Plan

Microfinance Organization (MFO) Crystal has developed its Green Funding Action Plan through the engagement of a broad range of stakeholders such as potential partners, consultants from the private, public and academic sectors. MFO Crystal has conducted review of its loan portfolio in terms of environmental consideration in its loans. MFO Crystal has also developed a list of possible projects such as energy efficiency, renewable (e.g. rooftop solar and biofuels), sustainable tourism, water supply and sanitation and sustainable agriculture, some of which are outlined as follows.

- Replacement of heat supply systems
- Building envelope insulation (outside walls)
- Replacement of outside doors, and windows with energy efficient ones
- Thermal solar systems
- Replacement of mini tractors
- Drip irrigation systems
- Energy efficient home appliances such as refrigerators, washing machines, dishwasher, ovens and air conditioning systems

Source: MFO Crystal (2017)

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5. Aligning broader enabling conditions for investments with Georgia's climate action

Scaling up finance for climate action in Georgia requires a broader set of conditions that enable further finance to flow to achieve the country's long-term goals on climate change and green growth. This chapter reviews a range of policies that directly or indirectly influence investment conditions to mobilise such finance in Georgia. Policies to be examined are on the following areas: financial market design; public procurement; and competition (especially in the electricity sector). The chapter also briefly discusses the gaps in information, awareness and capacity, and potential options to bridge the gaps, which is also an important enabling condition on both demand and supply sides of finance.

5.1. Financial market policies

153. Developing a well-functioning capital market has a great potential to help complement bank lending, diversify financial channels, lower the cost of investment, thus enhance the flow of capital, including for climate action, in Georgia (MoESD, 2016; OECD, 2017a; 2017b). The government (including state-owned utility companies), development finance institutions and commercial banks will continue to be an important source of direct investment in and on-lending to climate-related projects in the country. However, the scale of finance ultimately needed to achieve climate-related goals, along with the maturity mismatch (between short-term funding and long-term payback period of assets), is likely to exceed the capacity of these sources. The government's fiscal space is limited, development finance institutions alone inherently cannot meet the financial demand for Georgia's climate action and are supposed to avoid crowding out private-sector finance, and commercial banks face challenges in accessing and providing low-cost, long-tenor loans.

5.1.1. Current issues: high interest rates, collateral requirement and dollarisation

154. Availability of long-term and low-cost financial resources and the increasing government debt accumulation are major concerns for scaling up investments not only in climate-related projects, but also in nearly all sorts of fixed assets in Georgia. Georgian businesses consider the high interest rates on commercial bank lending to be one of the biggest obstacles to mobilising climate-related investment (Figure 5.1.). Interest rates on commercial bank lending are particularly high in the national currency, Georgian Lari (GEL) (17.3% in August 2017), compared to foreign currency loans (9.1%) (National Bank of Georgia, 2017a).

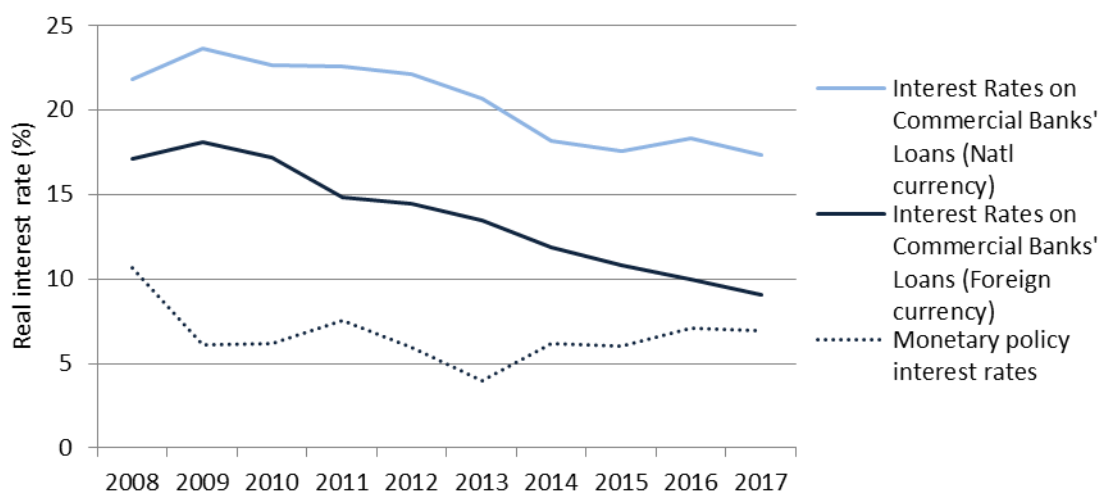
155. Studies suggest that there are a number of energy efficiency measures available at or below net zero costs in the long run in Georgia (e.g. Wing & Timilsina (2016)), but the limited availability of long-term capital results in the maturity mismatches between such

measures and available finance. Lowering the cost of capital is also important for renewable energy because an estimated 50-70% of the costs of electricity generation are in the financial cost of capital (OECD, 2017b).

156. Many Georgian commercial banks tend to be reluctant to lower the interest rates as they often lack sufficient knowledge and information on actual risks as well as technical specifications of green investments, even in the relatively well-established technologies such as hydropower (e.g. hydrological and engineering parameters and related performance). The National Bank of Georgia has held its bench mark monetary interest rate at 7% as of July 2017 (Figure 5.1.), since the annual inflation rate in 2017 (6.0% as of July) is higher than its 4% target during the year (National Bank of Georgia, 2017a).

157. To address the issues around high interest rates while promoting climate action, the government could integrate climate-related criteria into its existing support programmes for small- and medium-sized enterprises (SMEs). The government already provides targeted interest rate subsidies through the Entrepreneurship Development Agency (Enterprise Georgia) and the Agricultural Project Management Agency. Care should be taken to ensure that such support should not hamper more general climate- and environment-related policies and regulations.

Figure 5.1. Interests rates in Georgia (in percent)



Source: Based on National Bank of Georgia (2017a)

158. The high collateral requirement from banks (about 220% of the value of the loan) also makes it difficult for Georgian companies to take loans (EIB, 2016; EU4Business). This is particularly an issue for SMEs since they often do not have sufficient collaterals. Georgian banking regulations require commercial banks to limit their assets' exposure to uncollateralised loans to 25% of total portfolio. However, banks normally do not reach this threshold, implying that the level of commercial banks' risk aversion is likely to be greater than the level required by the regulations (EIB, 2016). Leasing could help solve the issues associated with collateral requirements, since it requires no collateral and has more flexible pay-back schedules in general. However the lease market in Georgia is still at the very early stage of development, thus largely underutilised (EIB, 2016; UNIDO, 2017).

159. The country credit rating for Georgia remains relatively low, albeit stable (e.g. Fitch: BB+, Moody's: Ba3, S&P: BB-) (National Bank of Georgia, 2017b), which also contributes to high interest rates and a drive towards short tenors of available capital. Perceived country risks of Georgia may not always reflect a real risk, but seem to influence the country credit rating. The perceived risks also negatively affect the ease of finding funding partners, especially from overseas, for structuring green finance projects. Recent economic and political situations of Georgia are considered stable: the currency volatility and the inflation rate are largely within the targeted rates by the National Bank of Georgia (NBG). Nevertheless, Georgia has a relatively small-scale economy and population, and its credit rating is often affected by the neighbouring countries' economic and political circumstances (including the other Caucasus countries, Turkey and Russia). For instance, the recent economic crisis in Turkey and Russia led to negative impacts on Georgia's economy, such as a decline in export of electricity and Georgian products

160. A high degree of dollarisation of assets in Georgia also may have various implications for mobilising finance for climate action, in addition to various negative effects on the country's fiscal sustainability and the effectiveness of the monetary policies in general. The dollarisation also tends to cause the currency induced credit risks in case of the currency depreciation as occurred to GEL in 2015. A study shows that while roughly 65% of deposits and loans are in USD-denominated, over 90% of foreign currency borrowers rely on income in GEL (EIB, 2016). The government of Georgia and NBG launched "Program on Larization Of Loans" that encourages borrowers to convert USD denominated loans to GEL with a preferential exchange rate, and allows loans in small amounts (up to GEL 100 000) to be only issued in GEL (National Bank of Georgia, 2016).

5.1.2. Looking at Georgia's capital market development from the green finance angle

161. Georgia's capital market (especially for corporate bonds and equity) is still at an early stage of development. The Capital Markets Working Group, hosted by the Georgian Government with the support of ADB, pointed out that the current underdevelopment of Georgia's capital market was a consequence of the multiple events and policy choices over the past decade (Capital Markets Working Group, 2015). The global financial crisis and the war against Russian Federation in 2008 undermined the momentum for developing the financial market. Furthermore, a set of radical amendments made in 2007-2008 to the Law on Securities Market of Georgia in the light of the market liberalisation has in fact resulted in further decrease in the transparency of the securities trading markets (ibid.)

162. The Ministry of Economy and Sustainable Development, the Ministry of Finance and NBG prepared a draft report on the Capital Market Development Strategy in 2016. The report stresses that "Capital Market, in parallel with the banking lending, is considered as an effective facility for attracting financial resources" and "deep, transparent and well-regulated capital markets contribute to stable growth and economy and people's welfare" (MoESD, 2016). The Ministry of Economy and Sustainable Development, the Ministry of Finance and NBG currently carry out a series of legislative reforms for capital market development, financial education, and infrastructure development (e.g. the payment system).

163. The ongoing efforts for capital market reforms in Georgia would therefore be an opportunity to start a comprehensive financial sector development that is also conducive to green finance mobilisation. The government and NBG have been reviewing a range of legal frameworks relating to the financial sector regulations. Legal and regulatory frameworks on the financial markets are indeed diverse. Those under review include: the Law on Securities

Markets; the Law on Investment Funds; the Law on Entrepreneurs; and the Law on Accounting and Financial Audit. While the climate-, or green growth-, related aspect has yet to become a part of this work, there is a growing interest in this issue shown by the actors working on the financial market development at several fora (e.g. (IFC, 2017; OECD, 2017c).

164. In Georgia, neither equity nor corporate bond is commonly used as financial instruments in general, let alone finance for climate action, except for equity investments in hydropower projects and few but emerging cases of wind power projects (e.g. Qartli Wind Farm). Nevertheless, there are emerging examples of Georgian corporations that have recently issued bonds either in the Georgian Stock Exchange or outside of the country such as the London Stock Exchange and the Irish Stock Exchange (Table 5.1.). A notable example is that JSC Bank of Georgia issued its first local currency corporate bonds with support of IFC, which attracted approximately USD 200 million from about 20 international investors (JSC Bank of Georgia, 2017). To support development of the bonds market, some development finance institutions, such as the EBRD and the ADB have issued bonds denominated by the local currency GEL, such as issuance of GEL-denominated Eurobonds under the EBRD's Global Medium Term Note Programme (Martikian, 2017).

Table 5.1. Examples of issued bonds and their performance

	Sector	Currency	Size (million)	Maturity	Coupon	Exchange	Rating (Fitch)
Government of Georgia	Government	USD	500	2021	6.88	London	BB-
Georgian Oil & Gas Corp	Energy	USD	250	2021	6.75	London	BB-
BGEO Group	Financial	USD	350	2023	6.00	Irish	BB-
Bank of Georgia	Financial	GEL	500	2020	11.00	Irish	BB-
Georgian Railway	Industrial	USD	500	2022	7.75	London	B+
Georgian Leasing Co	Financial	USD	10	2017	8.75	Georgia	-
M2 Real Estate	Real Estate	USD	25	2019	7.50	Georgia	-
Nikora Trade	Retail	USD	5	2018	11.00	Georgia	-
Georgian Water & Power	Utilities	GEL	30	2021	11.25	Not listed	BB-
Georgian Water & Power	Utilities	GEL	2.6	2017	14.00	Georgia	BB-

Note: GEL stands for Georgian Lari

Source: Adopted from Galt & Taggart, (2017) and Bank of Georgia (2017)

165. Table 5.2 illustrates that Georgia is taking steady steps towards the better functioning financial market in various areas (e.g. bond issuance, credit rating services, payment services and financial education). The government and the NBG are generally supportive for the idea of “greening” Georgian financial system. However, Table 5.2. also shows that the formal discussion on whether the current financial market reform should also explicitly include “green” elements or any Environment, Society and Governance factors has not yet started within the reform programmes. Nevertheless, regardless of whether there is an explicit green mandate built in to the reform of the Georgian capital market, improving the market is likely to have positive direct and indirect implications for future green finance mobilisation.

Table 5.2. Examples of key factors for and the current status in developing Georgia’s capital market

Examples of key factors for developing “green” capital markets	Status in Georgia
Well-functioning local capital market	Currently under development: Government bonds and other major corporate bonds have been issued, but they are still a small fraction of the total financial asset and issued outside Georgia.
Credit rating services	NBG and Fitch Ratings started a pilot credit rating service for major Georgian companies including the largest commercial banks.
Good payment service	NBG’s clearing and settlement system development is being finalised as of 2017.
Government yield curve	Government GEL bond yield curve was introduced in 2015.
Financial education	The National Strategy for Financial Education was adopted in 2016
Measures to promote ESG* performance of assets	Not yet considered.
Green bond guideline and standards	Not yet considered.

Note: Acronyms stands for ESG (Environment, Social and Governance), GEL (Georgian Lari) and NBG (the National Bank of Georgia).

Source: Author’s analysis

5.1.3. Making the best use of risk mitigation instruments

166. To mitigate political, macroeconomic, regulatory, business and technical risks, various risk mitigation instruments have been used in Georgia, such as credit enhancement mechanisms and direct public investment, summarised in Table 5.3. Reforming the capital market is essential but takes a long time, thus such instruments are powerful tools to create market-based incentives for commercial banks, equity investors and other types of financial institutions to scale up investment in climate-related projects and activities in Georgia in a relatively short-term. A reduced risk is also expected to lead financial institutions, such as commercial banks, to lower collateral requirements and interest rates for their clients. Tax reduction, interest subsidies and credit guarantees can also be used for specific financial products such as a future issuance of green bonds.

167. As mentioned earlier, investors already have seen hydropower projects in Georgia as bankable asset class, but they are made possible by the government’s revenue guarantees through fixed tariffs under power purchase agreements (PPAs), together with other preferential policies (e.g. priority access to the electricity grid and VAT exemptions). PPAs act as a credit enhancement mechanism that ensures long-term revenues to renewable projects in the country, while the associated rules are now being revised by the government in the direction that the government would discuss the terms for each project separately and agree on the individual tariff/price level.

168. The Green for Growth Fund (GGF) supports JSC TBC Bank by creating a subordinated fund for energy efficiency and renewable energy. The GGF was designed to leverage donor funding to mobilise finance from development banks and, ultimately, the private sector. An example of possible subordination is shown as follows (EU4Business, 2017)

- First loss tranche is provided by donors and different governments;
- Mezzanine tranche is provided by development banks;
- Senior tranche is provided by development banks and/or private institutional investors;

- (Technical assistance covers capacity building, awareness raising and market enabling activities, and validation and monitoring of energy savings and GHG emission reductions.)

169. US Development Credit Authority and the Multilateral Investment Guarantee Agency (MIGA of the World Bank Group) have provided investment projects in Georgia with a range of guarantee instruments, such as partial credit guarantees, loan portfolio with credit guarantees, political risk insurance and investment guarantees for equity sponsors. There has been no export credit agency of the country to date. However, JSC Partnership Fund and SACE (Cassa Depositi e Prestiti Group – the Italian export credit agency) are working together to establish a Georgian Export Credit Agency, at the final stage of development seeking the government approval as of September 2017 (Partnership Fund, 2017).

170. The government also provides public investment in the form of targeted grants or equity investment. A fully state-owned equity fund, the Georgian Energy Development Fund (GEDF), supports clean energy project development (e.g. wind, solar and hydropower) either through direct investment in early project development or an offering of the government's shares in GEDF to potential investors (GEDF, 2017). While not limiting to green investment, the Enterprise Georgia provides a 10% co-financing of bank loan interest rates and 12% for the annual interest rate of leasing for 24 months, as well as partial collateral guarantee up to 50% for the first 48 month, amongst others (Enterprise Georgia, 2017). Such support is provided only to loans in Georgian Lari in the light of the government's effort to mitigate dollarisation of assets in the country (ibid.).

Table 5.3. Examples of risk mitigation instruments

Category	Instrument	Description	Examples from Georgia
Credit enhancement	Revenue guarantee	Guaranteeing certain cash flows for a project, such as through regulated tariffs	Each project agrees on a power purchase agreement backed by the government (currently with a capped tariff: 6 US cents/kWh for less than 8 months a year).
	Layered fund subordination	Taking a subordinated position in a fund to give priority to private investors with regard to claims on assets	The Green for Growth Fund created a USD 15 million subordinated loan facility with TBC Bank to expand funding for energy efficiency and renewable energies projects.
	(Partial) Credit guarantee	Guaranteeing payments for the principal and interest on debt issuance (up to certain percentage in case of partial credit guarantee) under new or existing loan portfolios in the event of non-payment by the borrowers	US's Development Credit Authority provides loan portfolio guarantee for energy efficiency projects in Georgia (50% ceiling and 8-year guarantee length) EIB and European Investment Fund (EIF), through its InnovFin products, also provide SMEs with a portfolio guarantee of up to 50% of a portfolio of new or existing loans.
Public Investment	Grant	Concessional funds allocation	Development finance institutions and bilateral donor institutions often provide grants to interests or technical assistance for (e.g.) green credit line products. The government (through, e.g., Enterprise Georgia) provides financial assistance to interest loans and collateral requirement to SMEs.
	Blending	Strategic use of public (generally concessional) and for-profit funding to catalyse private sector investment	For Shuakhevi hydropower project, IFC together with private-sector companies (Tata Power and Norway's Clean Energy Group) are equity sponsors, while EBRD and ADB provide senior loans. MIGA provides investment guarantee. Georgian government bears financial liabilities associated with the PPA.
	Cornerstone stake	Investment in an offering that occurs early in the investment process so as to increase chances of success and to play a demonstration role to attract other investors	The Global Energy Efficiency and Renewable Energy Fund (GEEREF) takes cornerstone stake in the Caucasus Clean Energy Fund to catalyse private-sector finance in small- to medium hydropower projects.
	Fund seeding	Public investment to help establish private equity funds that specialise in green projects.	Georgian government established a state-owned JSC Georgian Energy Development Fund (GEDF) to provide equity investment in renewable energy projects. GEDF is in principle meant to have only a minority stake in a project.

Note: The range of risk mitigation instruments (or risk mitigants) and transaction enablers (e.g. securitisation and warehousing) that can help mobilise green finance is broader than those listed above. For more information, see (e.g.) OECD (2015) Mapping Channels to Mobilise Institutional Investment in Sustainable Energy.

Source: Author's analysis, based on Adler (2017), EIF (2017), EU4Business (2017), GEDF (2017), GEEREF (2016), and GNIA (2015)

171. There will be an even greater role of risk mitigation instruments in expediting green finance mobilisation for the next decade to come so as to meet targets on Georgia's climate and green growth agendas, especially in the short- and medium-terms (for the period 2020-2030). A comprehensive stocktaking and review of risk mitigation instruments available in the country will be useful to make the best use of the available ones and to identify important risks that have not been adequately covered in the country (OECD, 2016a).

172. Based on the aforementioned stocktaking exercise, the government could select risk mitigation instruments against an agreed set of criteria on both climate and non-climate considerations, which could help the country minimise the risk of arbitration and economic inefficiency (CPLC, 2017). Examples of such criteria found for instance in (CPLC, 2017; IPCC, 2014) could include:

- Immediate benefits of avoided GHG emissions, and other environmental aspects such as air pollution prevention, agriculture productivity increase, greater energy security and lower vulnerability to the fossil fuel prices;
- An acceleration of technological change and positive spill-overs on innovations; and
- Short-term knock-on effects and long-term development benefit (redirecting financial flows towards productive investments, strengthening industrial productivity, better access to energy, transport, and housing infrastructure, reducing poverty).

5.1.4. Considering development of a Georgian green bank or fund

173. There is neither a formally established national development bank nor a green investment bank⁵ in Georgia. Yet, the government and sovereign funds such as the Georgian Energy Development Fund and the Partnership Fund have certain functions of a development bank in financing projects with higher risks. However, the scale and scope of these funds are limited in order to make massive changes to financial flows towards climate and green growth agendas especially in underserved sectors or companies (e.g. SMEs).

174. In the context of NEEAP, establishing an agency for energy efficiency is proposed with the aim of delivering grants to mobilise public and private sector investment in energy efficiency, as well as donor co-ordination, amongst others (NEEAP Expert Team, 2017). LEDS proposes establishment of a Georgian Green Investment Bank either as part of the Partnership Fund or the Georgian Energy Development Fund, or as a newly created entity (Winrock and Remmisia, 2017). The Georgian Municipal Development Fund or Enterprise Georgia, though they are not financial institution or mandated to support green investment, could have an extended mandate to deliver risk mitigation instruments to climate- and environment-related investments.

175. In either case, it could be a useful first step to review the existing public financing mechanisms in Georgia and to take a comprehensive approach to deploy risk mitigation instruments to catalyse private-sector investments in climate action. Such an approach should be taken in a way that would not lead to the fragmentation of the financial mechanisms and crowding-out of private-sector finance (see also OECD (2016a)). Such review could also include ability of some of the Georgian national funding entities in aggregating large numbers of smaller projects in order to securitise them and gain access to international capital markets (Stuart & Gallagher, 2016). Care should be taken that national development banks in general also face challenges with regard to effectiveness of their interventions. These challenges include: the risk of market distortions arising from picking winners or from crowding-out effects; the potentially high opportunity costs associated with subsidised loans; and inefficiency due to the low level of scalability of projects undertaken (Torres & Zeidan, 2016; OECD, 2017a) .

176. A clear political signal, mandate and guidance would help some of the public entities, such as the Municipal Development Fund, the Enterprise Georgia, and the Partnership Fund, more legitimately explore and scale up investment in climate action. Capacity building would also be required in a wide range of issues. These include: defining

the scope of interventions (what kind of projects/entities to support), developing project appraisal criteria; setting up methodologies to monitor the implementation of projects and conditions attached to them, as well as to evaluate the results; among others. Better reporting and disclosure of information on interventions and their outcomes would also be useful to scale up and replicate successful interventions, and address similar challenges (Kato, Ellis, Pauw, & Caruso, 2014).

5.2. Competition policies

5.2.1. Developing an open and competitive electricity market

177. Open, competitive and unbundled electricity markets, if designed properly, create more space for renewable energy in developing countries (OECD, 2015). Georgia has a well-functioning power sector in general, but assessments by multiple organisations have concluded that creating a more competitive and transparent electricity market remains a critical challenge to the country (ADB, 2015; Energy Community Secretariat, 2017; Kochladz et al., 2015). Protocol concerning the Accession of Georgia to the Treaty establishing the Energy Community (Energy Community Treaty) and the legislative frameworks of the EU Association Agreement are already driving the further development of the competitive and transparent electricity market in the country. This is leading Georgia to carry out legislative amendments in the energy sector, aiming to comply with the Protocol and further increase investment attractiveness in the energy market.

178. Specifically, the current over-regulation of energy prices (e.g. on Enguri and Vardinili power plants as mentioned earlier) and the insufficient competition have hindered the development of transparent and competitive energy markets in Georgia (ADB, 2015; Energy Community Secretariat, 2017; Pavlenishvili & Biermann, 2016). The current situation is not compliant with the EU Directives, particularly Directive 2009/72/EC on Internal Market in Electricity, in terms of abandoning tariff regulation and promoting market-based prices (Energy Community Secretariat, 2017). While Georgia has made certain progress, information on a range of supply costs of, or actual charges for, electricity and related services is not necessarily readily available.

179. Georgia's electricity distribution and supply activities are not fully unbundled. Activities in the electricity sector are subject to licensing by Georgian National Energy and Water Supply Regulatory Commission (GNERC - the national regulatory body), categorised into: electricity generation, dispatch, transmission and distribution licenses (Table 5.4). The long-term memorandums directly negotiated between the government and the relevant energy sector entities contradict EU principles outlined in the Electricity Directive and the Gas Directive of the Third Energy Package (European Commission, 2013; Kochladz et al., 2015). The electricity distribution companies supply electricity to customers and the current rules do not allow the customers to switch suppliers, except when purchasing electricity directly from small-scale power plants (up to 13 MW). Non-regulated, direct agreements between retail customers and small power plants are not common as of 2017 due largely to the absence of competition in the market.

180. State-owned enterprises in the energy sector, such as the Electricity System Commercial Operator (ESCO), the Georgian State Electrosystem (GSE), and the Energotrans LLC can also act as channels to promote a green growth agenda that the government aims to promote. Georgia's Green growth agenda could be pushed through, for instance, preferential financing and taking influence via the board (Prag & Röttgers, 2017).

However, it should be noted that such a way of promoting green growth agenda must not be used as a justification of an uncompetitive energy market.

Table 5.4. The structure of Georgia’s electricity market

Elements of the energy sector	Actors and roles
Electricity generators	Two largest hydropower plants (Enguri and Vardnili) and Gardabani Thermal Power Plants, Qartli Wind Power Plant are owned by the government (about 1/3 of the total electricity supply). Other generators are privatised.
Transmitters	Transmitters are responsible for control and maintenance of the electricity transmission network. JSC Georgian State Electrosystem (GSE) (100% state-owned), JSC Unified Energy System Sakrusenergo (50% state-owned), and Energotrans LLC (100% owned by GSE) are the licensees.
Distributors	Distributors distribute electricity to consumers countrywide. JSC Telasi and JSC Energo-Pro Georgia* are the distributors in Georgia. (* JSC Energo-Pro Georgia has become the owner of JSC Kakheti Energy Distribution since September 2017.)
Direct customers	Direct customers are those whom generation licensees can sell electricity directly to. As of 2017, all customers that consume at least 1 KWh per year are eligible to register as direct customer, although there are not many direct customers to date.
Dispatcher	JSC Georgian State Electrosystem (GSE) is the only licensed dispatcher, and in charge of technical administration of the entire electricity system and provision for its reliability.
Electricity System Commercial Operator (ESCO)	ESCO is a state-owned company and its functions include trading with balance electricity and guaranteed capacity, setting up and operating unified database, etc.
Georgian National Energy and Water Supply Regulatory Commission (GNERC)	The national regulatory body that is responsible for licencing activities related to the electricity generation, dispatch, transmission and distribution.

Source: Adopted from BAG (2016) GNERC (n.d.) and Energy Community Secretariat (2017)

Box 5.1. The Energy Community

The Energy Community, established in 2007, aims to bring together the European Union (EU) and its partnership countries including Georgia to create an integrated pan-European energy market. The integration is based on the Energy Community Treaty.

By signing the Energy Community Treaty, the Contracting Parties committed to implementing key EU energy law, develop an adequate regulatory framework and liberalise their energy markets in line with the Treaty acquis within a fixed timeframe, which cover gas, electricity, and security of supply, renewable, oil, energy efficiency, environment, competition and statistics.

The Minister of Energy of Georgia signed the Protocol of the Accession of Georgia to the Energy Community Treaty in 2016, which entered into effect in 2017. The general objective of the Energy Community Treaty is to create a stable regulatory and market framework in order to:

- Establish a stable regulatory and market framework capable of attracting investment in power generation and networks;
- Create an integrated energy market allowing for cross-border energy trade and integration with the EU market;
- Enhance the security of supply to ensure stable and continuous energy supply that is essential for economic development and social stability;
- Improve the environmental situation in relation with energy supply in the region and foster the use of renewable energy and energy efficiency; and
- Develop competition at regional level and exploit economies of scale.

Source: Energy Community Secretariat (n.d.) Energy Community Facts in Brief

5.2.2. Access to the electricity grid

181. The Network Code stipulates the rules, procedures, relevant timeline and price with regard to connection to the transmission networks in Georgia (GNERC, 2014). It allows the transmission licensees to refuse an application from generators for connection to the grid, if the nearest sub-station or transmission line lacks available capacity, or the connection would threaten the security or stability of the grid system. Currently no critical barrier to the connectivity has been identified, but the Energy Community Secretariat regularly reviews the status in terms of the compliance with relevant EU Directives.

182. Georgia's Electricity Market Rules grant renewable energy sources a priority access to new cross-border interconnection lines. However, such priority does not apply in a uniform manner, and only electricity generated by power plants commissioned after 2010 can benefit from the priority access (Energy Community Secretariat, 2017).

183. The Ten Year Network Development Plan of Georgia for 2017-2027 of GSE mentions a potential ceiling on the connected capacity of wind power to the grid. The Plan indicates that the installed capacity of wind power plants connected to the power system should not exceed 100 MW by 2020, without necessary rehabilitation of the grid and

integration with the European energy market (Energy Community Secretariat, 2017). On the contrary, the total wind resource potential in Georgia is estimated to be 1 500 MW and the Georgian Energy Development Fund's pipeline alone would already exceed 100MW.

184. In 2016, the regulatory regime for net-metering was enacted, which allows retail customers to connect renewable energy sources with the capacity of up to 100 kWh to the distribution network and receive compensation for the electricity delivered to the grid. During the first year of introducing the mechanism, eight customers engaged in the net-metering scheme, with the aggregate installed capacity of 153 kWh (Energy Community Secretariat, 2017).

5.3. Addressing information gap and enhancing capacity

185. Georgia's first Biennial Update Report (submitted to UNFCCC) describes the lack of data on climate change-related information as chaotic, dispersed, inaccurate, outdated and unreliable, thus one of the biggest obstacles to climate change action in Georgia (GoG, 2016). A range of the sectors to be engaged in Georgia's green growth agenda suffer from data availability issues, such as the energy (e.g. potential energy saving performance), transport (e.g. knowledge about cleaner vehicle fleets and public transportation systems), agriculture (GHG emissions projection from the sector), and waste (e.g. amounts, types, disposal and utilisation of wastes) (ibid).

186. As in many countries, lack of the awareness and knowledge is one of the biggest challenges to scaling up finance for climate action in Georgia. Both providers of finance and their clients are often not aware of environmental impacts on their activities and their exposure to climate risks, as well as technical options for reducing them. For instance, a lesson learned through the credit line product under the EBRD-supported Energocredit for energy efficiency and renewable energy is that better understanding among potential borrowers about energy efficiency technologies and their cost-benefit profiles could have further expedited disbursement of the credits. The low level of the awareness of available financial instruments and sources (in this case, the credit lines extended by the EBRD) was also an issue.

187. Even for large-scale hydropower that is a well-established technology in the country, a lack of technical and engineering information often prevents smooth development of projects. For instance, insufficient hydro-meteorological information in Georgia between 1998 and 2010 has been a source of technical risks for Georgian commercial banks and other investors and lenders at the design and development phases of hydropower projects. Technical assessments for solar, wind, biomass and geothermal potentials across the country are either not yet conducted or still ongoing, for instance, feasibility studies on solar energy potential by JSC Caucasus Solar Company and a national-level solar energy potential assessment by the EBRD under its Georgian Low Carbon Framework⁶ (see also Ministry of Energy (2017)).

188. Enhancing data on the performance of completed climate-related projects across different asset classes would help both investors and their clients make investment strategies and financial decisions, as well as scale up and replicate successful projects. A number of climate- and environment-related projects have been conducted in Georgia, but information on their effectiveness assessed through monitoring and evaluation processes is often not readily available. Such information includes financial performances and associated technical, political and financial risks of particular types of projects and activities.

189. Local financial institutions still lack sufficient human resources who have enough expertise in technologies and engineering skills related to specific energy efficiency and renewable energy projects. Although the capacity gap is becoming narrower with the support of development co-operation partners, even large banks such as Bank of Georgia and TBC Bank, let alone smaller ones, still see the further need for human resources to identify and appraise green projects and manage necessary financial operations.

190. Clients of financial institutions (e.g. end-borrowers) also often lack capacities in, for instance: identifying or choosing best suited technologies and equipment; developing business proposals; fulfilling reporting requirement by financial institutions on environmental performance. Further, not only for finance for climate action, but also in general, levels of financial literacy among Georgian households and companies, SMEs in particular, remain low, which increases their credit risk perceived by commercial banks. For instance, lack of accurate financial statements and sound business plans increases the opaqueness of SME performance, which is a barrier for SMEs to accessing financial sources (OECD, 2016b)

191. The government could establish, or help establish, a central data depository that collects, collates and maintains information on loan-level data, performance track records, definitions of climate-related projects, technologies and hydro-meteorological data. A range of countries are also active in setting up learning networks and platforms in order to improve information flows, raise awareness of benefits from green investment and good national and international practices, and enhance analytical capabilities. For instance, China established the International Institute of Green Finance, which is engaged in a range of analytical projects to promote green investment in the country (CUFE, 2016). Sustainable Stock Exchanges Initiative (SSE) is a peer-to-peer learning platform among stock exchanges to explore how they, in collaboration with investors, regulators, and companies, can enhance corporate transparency and performance on ESG (environmental, social and corporate governance) issues and encourage sustainable investment. SSE has helped 33 exchanges develop their own guidance on ESG reporting as of the end of 2016 (SSE, 2016). US Department of Energy and its National Renewable Energy Laboratory also support a solar securitisation initiative (Solar Access to Public Capital) that is now being extended to China (the Chinese PV Alliance) and Europe (RESFARM) (OECD, 2017b).

Notes

⁵ Possible rationales, mandates and financing activities of “green investment banks” are analysed by (e.g.) OECD (2016a) *Green Investment Banks: Scaling up Private Investment in Low-carbon, Climate-resilient Infrastructure*, OECD Publishing.

⁶ Further information can be found at <http://www.ebrd.com/work-with-us/projects/psd/georgian-low-carbon-framework.html>

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