

Financing Climate Action in Turkmenistan

COUNTRY STUDY

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GREEN 
ACTION PROGRAMME

 **OECD**
BETTER POLICIES FOR BETTER LIVES

Summary

Turkmenistan submitted its intended nationally determined contribution (INDC) in 2015. The INDC has communicated both conditional (on international support) and unconditional mitigation targets. The unconditional target has been set in a way that the growth rate of greenhouse gas (GHG) emission will be lower than the growth rate of the country's GDP between 2015 and 2030. The conditional target is that GHG emissions will not increase between 2015 and 2030. The INDC also stresses the importance of preparing a detailed national action plan for adaptation. Agriculture, water management, health, soil and land resources, ecosystems and forestry are identified as the most vulnerable sectors to climate change.

Turkmenistan receives little climate-related development finance, compared with the amounts committed to the other countries of Eastern Europe, the Caucasus and Central Asia (EECCA). This may reflect the country's view that its climate actions are to be financed primarily by the domestic sources (GoT, 2015). In 2013 and 2014, the committed financial flows to Turkmenistan from international sources amounted to USD 3.3 million per year to mitigation projects, and USD 1.6 million per year to adaptation projects. The total of USD 4.87 million per year committed to the country is merely 1.6% of the EECCA average (i.e. USD 303 million per year).

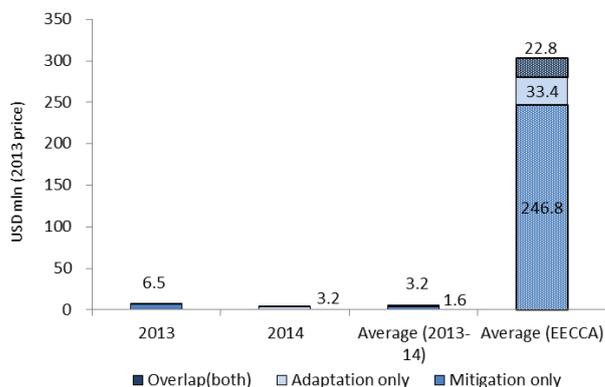
98% of climate-related development finance committed in 2013 and 2014 was from the Global Environmental Facility (GEF). The GEF provided support to two large-scale projects: a project on energy efficiency and renewable energy for water management systems (this project could have also fallen into the water sector) and a project on climate resilient livelihoods in agricultural communities.

Major policies of Turkmenistan on climate change mitigation are reflected in the government programmes, especially in the "National Strategy of Social and Economic Transformation of Turkmenistan until 2030" and the "National Strategy of Turkmenistan on Climate Change". The National Strategy on Climate Change also includes possible measures for energy efficiency. Currently, the government is developing the nationally appropriated mitigation actions (NAMAs). As of the end of 2014, Turkmenistan has established no mandatory targets on energy efficiency or renewable energy, while the targets on GHG emissions are expressed in the INDC as described above. Adaptation to climate change is a major focus of the National Strategy on Climate Change. The Strategy will be implemented through a National Action Plan for Adaptation, which is under development and meant to become an integral part of the national programmes and plans for socioeconomic development.

Overview of climate-related development finance to Turkmenistan in 2013-14: Excerpt from the report

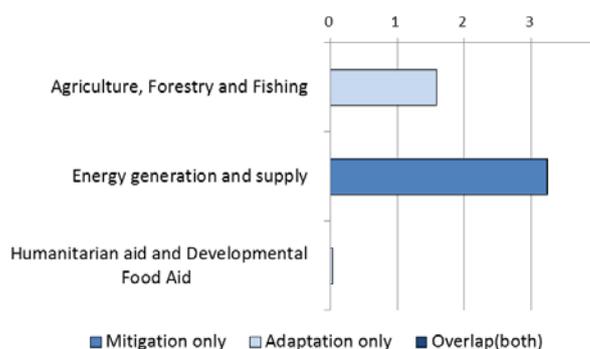
Total climate-related development finance flows by activities (mitigation, adaptation, and both)

(USD million per year)



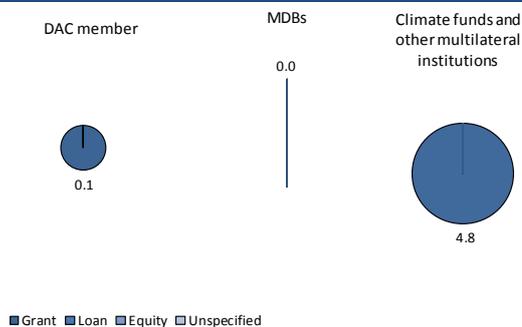
Climate-related development finance flows by sector

(USD million per year)



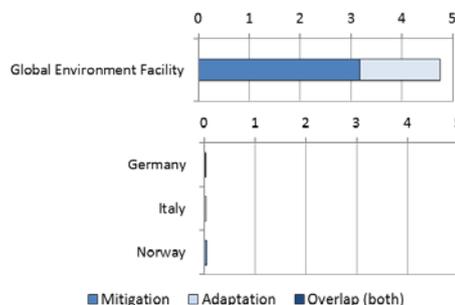
Financial instruments used by delivery channel

(USD million per year)



Major providers of climate-related development finance

(USD million per year)



Note 1: Total climate-related development finance = Mitigation + Adaptation – Overlap (both).

Note 2: Names of the sectors correspond to those used in the DAC CRS database.

Note 3: Please see the ‘Reader’s guide’ section for more information on methodological approach

Source: Based on OECD (2016)

This country-level study complements *OECD (2016), "Financing Climate Action in Eastern Europe, the Caucasus and Central Asia"*, and was prepared as part of the project "International Climate Finance for EECCA" under the GREEN Action Programme hosted by the Organisation for Economic Co-operation and Development (OECD). The project has been implemented with support of the German Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety. The report benefitted from the discussions at the Expert Workshop on International Climate Finance for EECCA that was held on 11 July 2016 in Paris, and written comments provided by the participants before and after the workshop.

The views expressed herein can in no way be taken to reflect the official opinion of Germany, or any of the OECD member countries, or the endorsement of any approach described herein. This document is also without prejudice to the status of or sovereignty over any territory, to the delimitation of international frontiers and boundaries and to the name of any territory, city or area.

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Information on the OECD-hosted GREEN Action Programme and relevant publications is available at <http://www.oecd.org/env/outreach/eap-tf.htm>

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Reader's guide

This country-level study aims to provide an overview of how international development finance has been supporting climate-related actions in the recent years, so as to improve clarity on how each of the countries in Eastern Europe, the Caucasus and Central Asia (EECCA) region is working together with their development co-operation partners. The study is based on both:

- (i) quantitative analysis for the period between 2013 and 2014; and
- (ii) qualitative analysis during the period between 2011 and 2015.

The 11 country reports were prepared to complement a publication “Financing Climate Action in Eastern Europe, Caucasus and Central Asia” by the Organisation for Economic Co-operation and Development (OECD) (Available at <http://www.oecd.org/env/outreach/eap-tf.htm>).

This study does not offer a complete picture of climate finance from all possible sources in public and private sectors, or all relevant policy frameworks within the country. However, it intends to provide a clearer understanding of international (public) financing flows committed to each of the 11 EECCA countries in terms of major sectors/areas, providers, and financing structures for individual projects, as well as domestic institutions involved in accessing and using such finance, on which relevant data tend to be scattered.

The study also analyses the country's climate targets and priority sectors/areas for climate actions based on its INDC and/or other relevant policy documents. Finally, the study briefly outlines in-country enabling environments, such as policies, laws, institutional arrangements and domestic financing mechanisms, which aim to promote a low-carbon, climate-resilient development.

The quantitative analysis for the period 2013-14 is conducted by using the database from the OECD DAC Creditor Reporting System (CRS)¹. This database allows for an approximate quantification of climate-related development finance flows that target climate mitigation and adaptation as either their principle objective or significant objective. The bilateral sources include OECD DAC members, while multilateral sources include multilateral development banks and international climate funds. Some of the South-South co-operation and non-DAC member contributions are also included.

The qualitative analysis for the period 2011-15 is based on publicly available project-level information (e.g. project design documents, project evaluation reports, and periodic reports by donors and financial institutions). In this part, sizes of some projects are indicated as committed financing volumes for the entire projects, while for reporting purpose, multilateral development banks only report the value of the components specifically relating to climate action as climate finance.

The DAC CRS records face values of the activities on the dates when grant or loan agreements are signed with recipients (i.e. commitment, but not disbursement). It should also be noted that the scope of the data sources for both the quantitative and qualitative analyses do not include some of the non-DAC member donors such as the People's Republic of China and the Russian Federation, or private sector investors, whose financial provision may be significant in certain EECCA countries.

The cut-off date of inclusion of information on data, policies and projects was 01 August 2016.

¹ For more details, see <http://www.oecd.org/dac/stats/climate-change.htm> and on the DAC members see <http://www.oecd.org/dac/dacmembers.htm>.

Background

Turkmenistan is an Upper Middle Income Country with USD 14 762 per capita GDP purchasing power parity (PPP) and a population of 5.3 million in 2014 (WB, n.d.). Turkmenistan's real GDP grew remarkably rapidly in recent years, mostly attributed to the growth of the natural gas and oil extraction sector (e.g. the average annual growth rate in real GDP was 10.9% between 2006 and 2014) (WB, n.d.). With the decline in the global energy price, the GDP growth of Turkmenistan's economy slowed down in 2015 to 6.5% (ADB, 2016). The government has been promoting economic diversification in non-hydrocarbon extraction industry, such as agriculture and service industries (ADB, 2016).

Such strong economic growth during the past years led to an increase in public investments by the government in physical infrastructure including in the energy sector (IEA, 2015), while also attracting foreign direct investment. The government still continues to invest in the oil and gas sector, including modernisation and expansion of facilities in the electricity and heat generation and supply industry. (IEA, 2015).

Several official documents, such as the intended nationally determined contribution, or INDC, and the Third National Communication, both submitted to the United Nations Framework Convention on Climate Change (UNFCCC), mention that the government is increasingly aware of the importance of climate change (GoT, 2015a and 2015b). However, a national strategic framework on integrated climate change mitigation or adaptation measures has yet to be put in place as of the end of 2015 (IEA, 2015).

In 2012, Turkmenistan emitted approximately 109.6 million tCO_{2e} of greenhouse gas (GHG) excluding Land Use, Land Use Change and Forestry (LULUCF) (WRI, 2016) which is about 0.18% of the global GHG emissions. Turkmenistan's energy intensity (i.e. the ratio of Total Primary Energy Supply (TPES) to real GDP) was 0.45 toe/USD 1 000 GDP in 2012 (IEA, 2015). This is the highest energy intensity among the EECCA countries (IEA, 2015). Turkmenistan is a non-Annex I Party to the UNFCCC. Approximately 90% of the GHG was emitted from the energy use, followed by agriculture (15%). 35% of energy-related GHG emissions was emitted as fugitive gases from the oil and natural gas extracting sector (WRI, 2016). Also, the residential and commercial building sector and the energy generation and supply sector emitted 29% and 24% of the energy-related GHG emissions respectively (WRI, 2016).

Without appropriate adaptation measures, a high level of economic loss, particularly in the agriculture sector, is anticipated, which would amount to USD 20.5 billion in the period 2016-2030 (GoT, 2015a). Climate change is likely to amplify already harsh weather conditions in the country, such as droughts, heat waves, strong hot and dry winds, high dustiness, increase in the number of dry years, dust storms, heavy rains and floods, low winter temperatures, and prolonged frost (GoT, 2015a). In addition to the agriculture sector, the country has identified water management, health, soil and land resources, ecosystems (flora and fauna) and forestry as the sectors particularly vulnerable to climate change.

Targets and priority areas for climate actions

Turkmenistan submitted its intended nationally determined contribution in 2015. The INDC has communicated both conditional (on international support) and unconditional quantitative targets. The unconditional target has been set in a way that the growth rate of GHG emissions will be lower than the growth rate of the country's GDP between 2015 and 2030. The conditional target is that GHG emission will not increase between 2015 and 2030. The INDC has also highlighted energy efficiency and conservation, sustainable use of natural gas and petroleum products, increased use of alternative energy sources as priority activities..

Table 1. Summary of the INDC

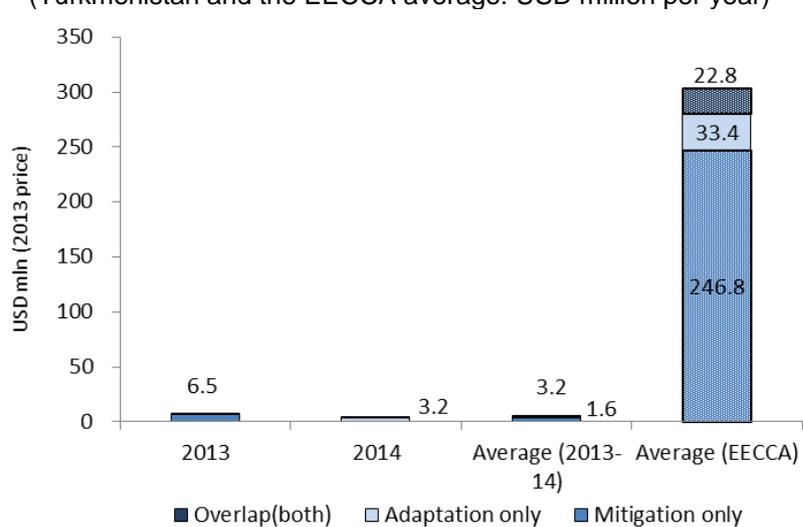
Scope of action	Targets	Priority sectors for mitigation actions
Mitigation	<p>[Unconditional]</p> <ul style="list-style-type: none"> The growth rate of GHG emissions will remain lower than the growth rate of GDP (i.e. the intensity of the GHG emissions per GDP will be reduced) between 2015 and 2030 	<p>Energy efficiency and conservation, sustainable use of natural gas and petroleum products, increased use of alternative energy sources are the main priorities of the policy for limiting GHG emissions</p> <p>Priority sectors: Industry, transport, housing and communal services</p>
	<p>[Conditional on international support]</p> <ul style="list-style-type: none"> Zero growth in emissions, and possible reduction trajectory between 2015 and 2030 	
Adaptation	<ul style="list-style-type: none"> Stressing the importance of preparing a detailed national action plan for adaptation 	<p>Areas likely to be most affected by climate change are:</p> <ul style="list-style-type: none"> agriculture water management health soil and land resources ecosystems (flora and fauna) and forestry <p>(The list of adaptation measures has been prepared in all priority sectors in the framework of preparation of the Third National Communication)</p>
Means of implementation	Quantified needs if any	Description
Finance	N.A.	(Means of implementation is primarily the state budget of Turkmenistan.)
Capacity development	N.A.	
Technology Transfer	N.A.	

Source: Adapted from GoT (2015a)

Overview of climate-related development finance flows (2013-14)

Turkmenistan receives a considerably small size of climate-related development finance, compared with the amounts committed to the other EECCA countries. On average, between 2013 and 2014, climate-related develop finance committed to Turkmenistan amounted to USD 3.3 million per year to mitigation projects, and USD 1.6 million per year to adaptation projects. The total of USD 4.87 million per year committed to the country is merely 1.6% of the EECCA average (i.e. USD 303 million per year). This reflects the country's perception that the climate actions will be financed primarily by domestic sources (GoT, 2015) The Third National Communication of Turkmenistan states that the total investment (i.e. not only climate) in 2014 was 54.9 billion Turkmenistan Manats (about USD 15 billion), which shows that only a small portion was provided by international development finance.

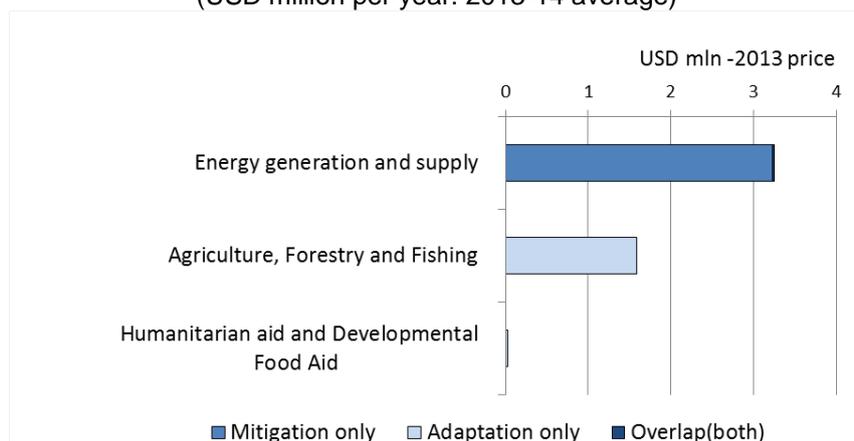
Figure 2. Climate-related development finance flows in 2013 and 2014 and the 2-year average (Turkmenistan and the EECCA average: USD million per year)



Source: Based on OECD (2016), Climate-related development finance, 2016 February version, Paris.
 Note: Total climate-related development finance = Mitigation + Adaptation – Overlap (both).

Climate-related development finance was committed to only three sectors (defined by the OECD DAC CRS²) with most of it directed to the energy sector and the agriculture sector. The two large-scale projects in these sectors, both supported by the Global Environment Facility (GEF), were: the energy efficiency and renewable energy for water management systems (thus this project could have fallen into the water sector in the DAC CRS) and the climate resilient livelihoods in the agricultural communities. There has been no climate-related development finance committed to directly support the energy (generation and supply) sector in the past years (and not only in 2013 and 2014), which is totally different from the situations in the rest of the EECCA region.

Figure 3. Climate-related development finance by sectors in 2013 and 2014 (USD million per year: 2013-14 average)



Note 1: Total climate-related development finance = Mitigation + Adaptation – Overlap (both).

Note 2: Names of the sectors correspond to those used in the DAC CRS database.

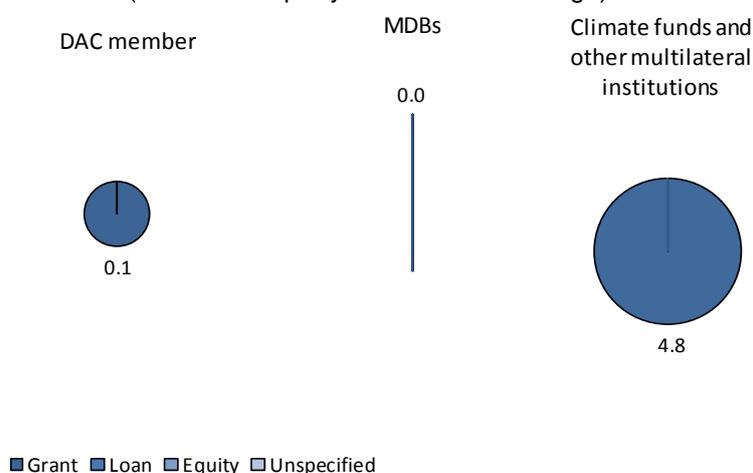
Source: Based on OECD (2016), Climate-related development finance, 2016 February version, Paris.

² OECD DAC CRS: the OECD Development Assistance Committee Creditor Reporting System.

Grants are the only financial instrument that has been used to deliver climate-related development finance to Turkmenistan in the past years, which is also quite different from other EECCA countries. Nevertheless, according to the government, the country has been promoting policies to attract foreign investments in infrastructure and actually received 15.7% of total investments as foreign direct investment in 2014, which amounts to USD 2.35 billion (GoT, 2015b).

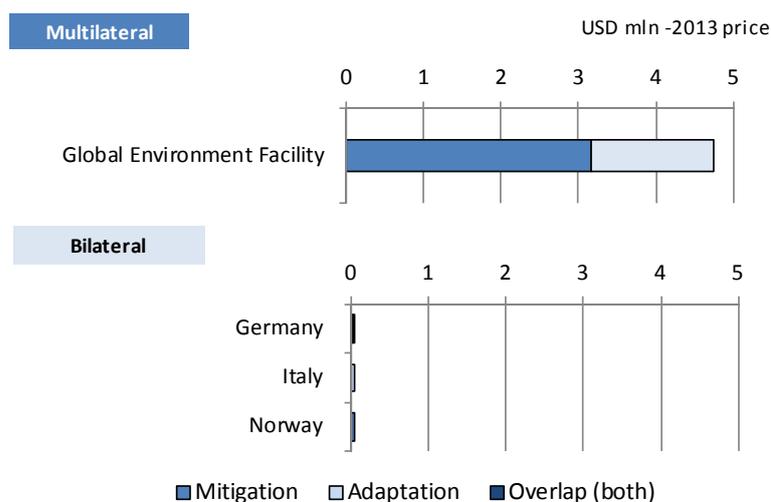
In 2014 and 2013, no multilateral development banks (MDBs) committed any support to climate-related development finance in Turkmenistan. The GEF is the dominant source of climate-related development finance during the period, although it provided support to only the two projects mentioned above. There are a few small-scale projects supported by bilateral sources such as Germany, Italy and Norway (and the European Union and the United States in the past 5 years).

Figure 4. Channels and financial instruments used to deliver climate-related development finance (USD million per year: 2013-14 average)



Source: Based on OECD (2016), Climate-related development finance, 2016 February version, Paris.
 Note: Total climate-related development finance = Mitigation + Adaptation – Overlap (both).

Figure 5. Major providers of climate-related development finance (USD million per year: 2013-14 average)



Note: Total climate-related development finance = Mitigation + Adaptation – Overlap (both).
 Source: Based on OECD (2016), Climate-related development finance, 2016 February version, Paris.

Table 2. Sectoral coverage of mitigation and adaptation projects in 2013 and 2014 by provider
 ("X" represents that a relevant project (or projects) exists in the sector)

	Agriculture, Forestry and Fishing		Energy generation and supply		Humanitarian aid and Developmental Food Aid	
	M	A	M	A	M	A
Bilateral						
Germany			X	X		
Italy						X
Norway			X			
Multilateral						
Global Environment Facility		X	X			

Source: Based on OECD (2016), Climate-related development finance, February 2016 version.
 Note: Names of the sectors correspond to those used in the DAC CRS database (OECD, 2016).

Selected examples of projects supported by climate-related development finance

This section covers climate mitigation and adaptation activities committed during the period between 2011 and 2015 based on information included in publicly available documents on individual projects/programmes. Each example shows how the activity is financed and what actors are involved in it, both inside and outside of the country. Whilst the previous section uses the OECD DAC statistical data for the period 2013-14, this section rather uses qualitative data with some indicative numbers on each project to illustrate how the country and its development co-operation partners as well as other domestic and international stakeholders are working together to finance climate actions.

Turkmenistan's INDC outline some of the priority sectors in mitigation and adaptation. Based on the information included in the document, this section outlines selected examples in the following sectors. Some of these projects are also co-financed by domestic sources.

- Energy consumption;
- Agriculture and water resource management;
- Forestry and biodiversity.

Energy consumption

Due to its aged energy-related infrastructure (both on supply and demand sides), Turkmenistan's energy efficiency potential is significant (IEA, 2015). The National Strategy on Climate Change adopted in 2012 includes possible measures for energy efficiency, and the nationally appropriated mitigation actions (NAMAs) are also being prepared. As of the end of 2014, no binding target on energy efficiency has been set except the INDC targets on GHG emissions (i.e. not to increase GHG intensity towards 2030).

Turkmenistan also has significant potential in development of renewable energy, yet the only renewable energy source developed is a very small capacity of hydropower (IEA, 2015). A large solar and wind power potential has been assessed, and the government recognises that developing renewables could benefit Turkmenistan by reducing GHG emissions and allocating more gas to exports (ibid.). However, the free supply, or extremely low pricing, of electricity, heat and gas to consumers have discouraged investment in energy efficiency and renewable energy (IEA, 2015).

The GEF-supported project "Energy Efficiency and Renewable Energy for Sustainable Water Management" looks to introduce demand side energy efficiency and renewable energy measures for irrigation systems. The agriculture sector generates about 20% of GDP in the country and employs half of the population. The irrigated agriculture (e.g. cotton production) is a large energy end-user and a growing source of GHG emissions (GEF, 2013). Inefficient, outdated irrigation facilities have caused high water and energy losses, and also indirectly contributed to growing water shortages: the more power is wasted due to inefficient irrigation, the more water is needed for its generation (ibid.) The project aims to: improve local technological and knowledge base about modern energy efficiency and renewable energy technologies and their application in water management sector; and support implementation of pilot projects that will modernise a selected pump irrigation scheme featuring technologies on renewables and energy efficiency.

The European Union (EU) is financing the project on "Support to the Introduction of Sustainable Development Policies". The project aims to strengthen the skills and structure of the government, which will be needed to address sustainable development. The programme components also include: raising awareness among educational institutions, industrial sector, and residential energy consumers about the

issues on sustainable development; and introducing sustainable development into national and sectoral programmes (DIW, 2014).

The United States supported “Regional Energy Security, Efficiency, and Trade Program (RESET)”. The project was implemented to promote energy security, built capacity among energy professionals, and increase profitable energy trading within the region. Activities implemented include improving optimal energy system development; automated meter reading and the “Supervisory Control and Data Acquisition systems” and integrating them to improve power sector efficiency; improving knowledge about the benefits, challenges, and potential for renewable energy and smart grid technologies (USAID, 2014).

Table 3. Examples of projects supported by international climate-related development finance (Committed in 2012-2015)

Project type	Project	Finance provider	Financial instrument and amount	Co-financing by domestic actor	Key domestic institution
Energy efficiency (EE)	Energy Efficiency and Renewable Energy for Sustainable Water Management (2013)	GEF, EU, UNDP	Grant (GEF: USD 6.2 mln, EU: USD 1 mln, UNDP: USD 0.4 mln)	GoT (USD 23 mln)	Ministry of Water Resources
	Support to the Introduction of Sustainable Development policies (2012)	EU	Grant (USD 2.4 mln)	N.A.*	The Academy of Civil Servants, The Institute of Strategic Planning and Economic Development, Ministry of Economy and Development, The Academy of Sciences and its Solar Institute “Gyun”
	Security and Trade Project (RESET) (2011)	United States	Grant (USD 0.6 mln)	N.A.*	Ministry of Energy

* Information on co-financing from domestic sources is not found.

Agriculture and water resource management

Although 96% of Turkmenistan’s territory is arid land and droughts frequently occur, the agriculture sector employs approximately 50% of the country’s workforce and contributes to 10% of GDP (USD 3.8 billion). Cotton and wheat production and livestock are the primary areas of economic activity. 81% of the rural population relies on agriculture and suffers from poverty (GEF, 2014).

Negative impacts of climate change (e.g. an increase in temperature, reduction in rainfall, and more frequent and intense extreme weather events such as droughts) are likely to affect livelihoods of poor populations disproportionately. Therefore, measures for adaptation to climate change are crucial in order for farmers to become better prepared for risks of increasing water scarcity and other forms of economic damages caused by climate change.

The project “Supporting climate resilient livelihoods in agricultural communities in drought-prone areas” supported by the GEF implements no-regret adaptive solutions for reducing water demand and improving water supply systems, especially in remote communities in the Lebap and Dashoguz areas. Activities may include introduction of drip irrigation equipment to small-holders, training and distribution on use of treadle pumps, construction of wells, rainwater harvesting, establishing greenhouses, introduction of water usage measurements, establishing climate-smart crop production systems, amongst others (GEF,

2014). The project also includes other activities such as capacity development for mainstreaming of adaptation into development strategies.

In order for adaptation to be better tailored to community needs, it is often useful to engage local groups that are directly involved in water resource management. The project “Addressing climate change risks to farming systems in Turkmenistan at national and community level” supported by the Adaptation Fund aims to help the Water User Associations (WUAs) implement community adaptation plans and support WUAs with investing in water management systems and infrastructure. The project also supports the introduction of drip irrigation, harvesting, water points, terracing, intercropping, and irrigation canal improvements (AF, 2011).

Table 5. Examples of projects supported by international climate-related development finance (Committed in 2012-2015)

Project type	Project	Finance provider	Financial instrument and amount	Co-financing by domestic actor	Key domestic institution
	Supporting Climate Resilient Livelihoods in Agricultural Communities in Drought-prone Areas (2014)	GEF	Grant (3.2 mln)	GoT (USD 19.2 mln)	Ministry of Nature Protection
	Addressing climate change risks to farming systems in Turkmenistan at national and community level (2011)	Adaptation Fund	Grant (USD 2.9 mln)	N.A.*	Ministry of Nature Protection, Ministry of Agriculture, Ministry of Water Economy, Ministry of Economy

* Information on co-financing from domestic sources is not found.

Forestry and biodiversity protection

Forest resources are already scarce in Turkmenistan, and climate change is likely to risk further deforestation in large forest areas. Consequence would be deterioration of living conditions of people living in such areas and the regional ecosystem. Therefore, it is crucial for the country to promote comprehensive protection, conservation and sustainable use of forest resources. There have been a range of policy frameworks put in place, such as the Forest Code and the National Forest Programme.

To promote both adaptation and mitigation, Germany supported “Sustainable forest and pasture management in Turkmenistan” to enable the forest administration to practice sustainable forest management, to increase forest cover and enhance carbon sinks (GIZ, 2013). The project takes ecosystem-based adaptation (EbA). For example, multi-stakeholder engagement was implemented to assess vulnerability and identify measures to be integrated into forest and pasture management in the country (GIZ, 2013).

Table 6. Examples of projects supported by international climate-related development finance (Committed in 2012-2015)

Project type	Project	Finance provider	Financial instrument and amount	Co-financing by domestic actor	Key domestic institution
Sustainable forest management and afforestation	Sustainable forest management in Turkmenistan (2011)	Germany	Grant (USD 1.17 mln)	N.A.*	Ministry of Nature Protection

* Information on co-financing from domestic sources is not found.

In-country enabling environments for climate actions

Legal and policy frameworks

Major policy of Turkmenistan to mitigate climate change is reflected in government programmes, such as the “National Strategy of social and economic transformation of Turkmenistan until 2030” and the “National Strategy of Turkmenistan on Climate Change”. The National Strategy on Climate Change also includes possible measures for energy efficiency. Currently, the government is developing the nationally appropriated mitigation actions (NAMAs) (GoT, 2015a).

Adaptation to climate change is also a major focus of the National Strategy on Climate Change. The Strategy will be implemented through the “National Action Plan for Adaptation” that is under development and meant to become an integral part of national programmes and plans for socioeconomic development (GoT, 2015a).

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

Adaptation	National-level comprehensive policy document that facilitates adaptation
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Source: Compiled the data from UNECE and REN21 (2015) “The UNECE Renewable Energy Status Report”, GoT (2015a) Intended Nationally Determined Contribution

Domestic climate finance mechanisms and frameworks (selected examples)

Turkmenistan’s investment climate is tailored specifically to each sector. The oil and gas extraction industry is more open to foreign investors, while the remainder of the energy sector is tightly controlled by the government. Privatisation of the entities in the energy sector is currently being planned.

As an example, TurkmenEnergo, a vertically integrated state-owned electricity company, is investing in the electricity and heat networks, such as rehabilitation, modernisation and expansion of such networks to combat frequent outages and losses and to cater to growing demand. One of the ongoing projects is expected to cost around USD 5 billion by 2030 for improving electricity generation and distribution capacities and additional export infrastructure to Iran and Afghanistan.

To allocate funding to forest management, which is the scarce resource in the country and a priority in the INDC, Turkmenistan established the Forest Fund. The Fund is managed under the authority of entities of the Ministry of Nature Protection. It is estimated that about 60% of the Fund is used for grazing.

Annex: Key institutions and legal and policy frameworks

The tables below outline key institutions and legal and policy frameworks in the country that are, or will be, involved in accessing and using climate-related development finance. The institutions include: those engaged in development planning; those in charge of environmental policies and regulations; those which manage or oversee energy industry; those which are private or state-owned entities engaging in work with international climate finance sources; those whose work is related to adaptation (e.g. water, disaster risk management etc.).

Major domestic institutions involved in climate-related projects in the country

Entity	Description
Ministry of Oil and Gas Industry and Mineral Resources	Responsible for oil and gas deposit development, oil and gas production, transportation and export.
The Ministry of Energy	Responsible for electricity generation, transmission, distribution and retail. The Ministry is also responsible for alternative and renewable energy developments.
Ministry of National Security	Responsible for emergency response, including the emergency stock holding obligations.
Ministry of Finance	Responsible for energy tariff methodology and setting, among other responsibilities such as for fiscal policies.
Ministry of Agriculture	Responsible for agriculture-related policies
Ministry of Water economy	Responsible for policies on water resource management
Ministry of Health and Medical Industry	Responsible for oversight of health and medical industry
State Commission on Climate Change	Responsible for coordinating and managing activities of all concerned ministries, departments, and organizations in regard to climate change policies development and implementation. The commission is also the focal point for the implementation of activities under the UNFCCC and other international conventions.
State Agency for the Management and Use of Hydrocarbon Resources under the President of Turkmenistan	Assuming all the powers of the Ministry of Oil and Gas Industry and Mineral Resources concerning the issuance of licences for exploration survey, development of deposits, oil and gas production and transportation.

Major legal and policy documents relevant to climate action (Examples)

Name	Description
National Strategy of social and economic transformation of Turkmenistan until 2030	The strategy highlights measures needed for inclusive economic growth while preserving economic independence, modernising the country's infrastructure, and promoting foreign direct investment.
National Strategy of Turkmenistan on Climate Change.	The strategy lays out the policy framework for building climate resilience and low-emission economy in Turkmenistan. The strategy prioritises a number of sector-tailored measures to ensure mitigation and adaptation responses from key economic areas
Concept of water resources of Turkmenistan until 2030	The concept calls for strengthening capacity of the water sector for implementing of a number of adaptation measures. Priority tasks for adaptation of the water economy to the impacts of climate change are the following: improvement of the overall water management, introduction of advanced irrigation methods, desalination, construction and

	restoration of water reservoirs
Water Code of Turkmenistan	Water Code outlines the principles of integrated water resources management, water saving, and access to information and public participation.

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