Financing Climate Action in Kazakhstan
Summary

The Republic of Kazakhstan (Kazakhstan) submitted its intended nationally determined contribution (INDC) in 2015 with the quantitative target to reduce greenhouse gas (GHG) emissions. It communicated both a conditional target (on additional international support) and an unconditional target: GHG reduction by 25% below 1990 levels by 2030 (conditional) and 15% below 1990 level by 2030 (unconditional) (GoK, 2015). Kazakhstan has also adopted a range of legal and policy frameworks on addressing issues concerning climate change and a wider set of sustainable development agenda (e.g. Concept for Transition to a Green Economy, the Law on Energy Saving and Energy Efficiency, and the Law on Supporting the Use of Renewable Energy Sources). The government is also developing a Concept of the Law on the adaptation to climate change and a low-carbon strategy that would relate to, for instance, green technology development, the Kazakh Emission Trading Scheme and policies to promote renewable energies (Yessekina, 2016).

During the period 2013-14, about USD 346.7 million of climate-related development finance was committed to Kazakhstan. 91% of the finance was committed to mitigation projects. The volume of climate-related development finance committed to Kazakhstan was slightly larger than the average amount in all the countries of Eastern Europe, the Caucasus and Central Asia (EECCA) (USD 303 million per year), while the country’s GDP per capita PPP is the highest in the EECCA region.

A significantly large share of climate-related development finance is delivered through multilateral channels (USD 311 million per year, or 89.6% of total) in 2013 and 2014. Examples include the European Bank for Reconstruction and Development (EBRD) and the European Investment Bank (EIB), using non-concessional loans, and the Climate Investment Funds (CIF) with concessional loans. The European Union as well as other bilateral donors has provided a significant amount of grant financing to, for instance, technical assistance.

The largest amount of climate-related development finance was committed to energy efficiency and renewable energy projects in the energy generation and supply sector, which is aligned with the country’s national policies on promoting low-carbon energy development. The finance for the banking and financial sector mostly represents the extension of credit-lines by multilateral development banks (e.g. the EIB) to local banks, aiming to help small- and medium-sized enterprises finance mainly renewable energy or energy efficiency measures on the demand side.

The Ministry of Energy is a lead ministry for energy policies and governance as well as climate policies which used to be under the responsibility of the Environment Ministry until 2014. The Ministry of Energy is involved in a range of climate-related projects supported by international sources. However, many other ministries and governmental agencies has been engaged in climate actions, such as Ministry of Agriculture and Ministry for Investment and Development. Further, domestic public financing mechanisms co-finance climate-related project supported by international sources. For instance, the Sovereign Wealth Fund “Samruk-Kazyna” has invested significantly in a number of projects on renewable energy, amongst others.
Overview of climate-related development finance to Kazakhstan in 2013-2014: Excerpt from the report

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

<table>
<thead>
<tr>
<th>Year</th>
<th>Mitigation</th>
<th>Adaptation</th>
<th>Overlap (both)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013</td>
<td>356</td>
<td>39</td>
<td>0</td>
</tr>
<tr>
<td>2014</td>
<td>259</td>
<td>285</td>
<td>0</td>
</tr>
<tr>
<td>Average (2013-2014)</td>
<td>314</td>
<td>214</td>
<td>23</td>
</tr>
</tbody>
</table>

Climate-related development finance flows by sector
(USD million per year)

- Energy generation and supply
- Banking, financial and business services
- Unallocated/Unspecified
- Multi sector
- Industry, Mining, Construction, Trade
- Policy and Tourism
- Transport and storage

Financial instruments used by delivery channel
(USD million per year)

- DAC member
- MDBs
- Climate funds and other multilateral institutions

Major providers of climate-related development finance
(USD million per year)

- EBHD
- EIB
- Climate Investment Funds
- GEF

EU institutions excl. EIB
- United States
- France
- Norway
- Australia
- Germany
- Korea
- Czech Republic
- United Kingdom
- Greece

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
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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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). 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

The Republic of Kazakhstan (Kazakhstan) is an upper middle income country with USD 23 114 per capita GDP purchasing power parity (PPP) and a population of 17.3 million in 2014 (WB, 2016). In terms of GDP per capita PPP, Kazakhstan is the richest country among the EECCA region and a large oil producer. Kazakhstan’s economy and society have undergone deep transformations since the country declared independence in 1991 (OECD, 2016b). The performance in economic growth since 2000 has been about 8% per annum in real terms and leading to the creation of 2.3 million jobs (OECD, 2016b). In 2012 Kazakhstan set the target of becoming one of the 30 most developed countries in the world by 2050. However, in the first quarter of 2016, the economy fell in recession for the first time since 2009, due to the drop in oil and metal prices, weaker exports, and falling consumption. All this led to a GDP growth of 1% in 2015 and a subsequent budget deficit.

Kazakhstan emitted approximately 271 million tCO2e of greenhouse gas (GHG) in 2012 (GoK, 2015), which is about 0.7% of the global GHG emissions. Kazakhstan is an Annex I Country to the United Nations Framework Convention on Climate Change (UNFCCC) (together with Ukraine and Belarus). Most of the GHG emissions (90%) is attributed to the energy use. 50% of energy-related GHG emission comes from electricity and heat generation, and 24% is from the manufacturing/construction sector (WRI, n.d.).

Agriculture and water sectors are considered to be particularly important for adaptation action in the country, and necessary adaptation actions for these two sectors are closely linked with each other. While there is no mention of adaptation in the intended nationally determined contribution (INDC), the country Kazakhstan has analysed vulnerability of the country and its technology needs to enhance its adaptive capacity to climate change (GoK, 2013 and 2012). Having taken into account economic impact, social impact, environmental impact, and vulnerability to climate change on several sectors in the country, the Technology Needs Assessment for Kazakhstan identifies agriculture and water sectors as the highest priorities for adaptation actions (GoK, 2010).

Targets and priority areas for climate actions

Kazakhstan submitted its INDC in May 2015 with absolute GHG emission reduction targets including land use, land use change and forestry (LULUCF). Kazakhstan committed to both a conditional target (on additional international support) and an unconditional target: GHG reduction by 25% below 1990 levels by 2030 (conditional) and 15% below 1990 level by 2030 (unconditional) (GoK, 2015). The conditional target is subject to “additional international investments, access to low carbon technologies transfer mechanism, green climate funds and flexible mechanism for country with economy in transition”, according to the INDC (GoK, 2015).

Kazakhstan’s unconditional target to 2030 equals to an increase by 11.6% from the 2011 level, while the conditional target is a decrease by 1.6% below 2011. Analysis shows that to meet both targets, Kazakhstan will still need to implement additional policies to what would be covered by the country’s emission trading scheme whose full-implementation is currently suspended until 2018 (Suleimenov et al., 2016). This is because annual GHG emissions have been increasing constantly from its lowest level recorded in 2001 (155.4 million tCO2e including LULUCF), and projected to follow this upward trend until 2030 (Climate Action Tracker, 2015).

Kazakhstan’s INDC has no mention of adaptation or support needs, although it has the target that is conditional on international support. The INDC also does not explicitly list the country’s priority sectors or measures in its climate action, but does refer to a few major national policy documents where priorities are mentioned in its “planning process” section. These documents include “Concept for Transition to a Green Economy”, adopted in 2013, the law on “Energy saving and energy efficiency”, and the law on
“Supporting the Use of Renewable Energy Sources”. The Concept reinforces the existing targets in the country’s priority sectors including, sustainable use of water resources, sustainable agriculture, and energy efficiency, waste management, air pollution and ecosystem management (Ministry of Environmental Protection, 2013).

Figure 1. GHG emissions in the base year, the recent data and the target year

![GHG emissions graph]

Note*: This target is conditional on additional international investments, access to low carbon technology transfer mechanisms and flexible mechanisms.

Table 1. Summary of the INDC

<table>
<thead>
<tr>
<th>Scope of action</th>
<th>Targets</th>
<th>Priority sectors for mitigation actions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mitigation</td>
<td>[Unconditional] 15% reduction in GHG emissions by end of 2030 below 1990</td>
<td>[The Concept of Kazakhstan for Transition to Green Economy that is referred to in the INDC outlines the following measures.]</td>
</tr>
<tr>
<td></td>
<td>[Conditional on international support] 25% reduction in GHG emissions by end of 2030 below 1990 (conditional on “Additional international investments, access to low carbon technologies transfer mechanism, green climate funds and flexible mechanism for country with economy in transition”)</td>
<td>• Sustainable use of water resources, • Sustainable agriculture, • Energy saving and energy efficiency, • Electric power industry, • Waste management system, • Reducing air pollution and the conservation, • Effective management of ecosystems.</td>
</tr>
<tr>
<td>Adaptation</td>
<td>N.A.</td>
<td>N.A.</td>
</tr>
<tr>
<td>Means of implementation</td>
<td>Quantified needs if any</td>
<td>Description</td>
</tr>
<tr>
<td>Finance</td>
<td>N.A.</td>
<td>N.A. (Kazakhstan retains the option of using market based mechanisms under the UNFCCC.)</td>
</tr>
<tr>
<td>Capacity development</td>
<td>N.A.</td>
<td>N.A.</td>
</tr>
</tbody>
</table>
Overview of climate-related development finance flows (2013-14)

During the period 2013-14, about USD 346.7 million of climate-related development finance was committed to Kazakhstan. Most of the finance (91%) was committed to mitigation projects, while 9% was committed to multi-focal projects on mitigation and adaptation. From 2013 to 2014, both the average size and the total number of the projects slightly decreased. Nevertheless, the volume of climate-related development finance committed to Kazakhstan was slightly larger than the average amount in all EECCA countries.

The largest amount of climate-related development finance was committed to the energy sector in 2013 and 2014, followed by the banking and financial sector. Some large projects committed include renewable energy development as well as energy efficiency for the electricity generation and transmission systems, which is aligned with the country’s national policies on promoting renewable energy and energy efficiency. For instance, “Yereymentau Wind Farm” project receives nearly USD 110 million from the European Bank for Reconstruction and Development (EBRD) and the Climate Technology Fund (CTF), which accounts for more than one-third of the total climate-related development finance committed to the country in 2014.

The finance for the banking and financial sector mostly represents the extension of credit-lines by the European Investment Bank (EIB) to the Development Bank of Kazakhstan (DBK) and to the Sberbank Kazakhstan. Those credit lines target Kazakhstan’s small and medium-sized enterprises, predominantly in the areas of climate change and environmental protection (EIB, 2014). The third largest share is “unallocated/unspecified” that consists of two large-scale projects on mitigation supported by the EBRD, but detailed information cannot be retrieved by the project identification numbers reported to the Creditor Reporting System (CRS) database on which this analysis is based.
A significantly large share of climate-related development finance is delivered through multilateral channels (USD 311 million per year), among which the EBRD and the EIB are predominant in 2013 and 2014. The CTF, a funding window of the Climate Investment Funds (CIF), has provided concessional loans to a range of projects in the country for demonstration, deployment, and transfer of low carbon technologies, most of which are co-financed and/or implemented by the EBRD. A majority of the finance is delivered in a form of loans given the high level of economic development. Grants are also provided by the Global Environment Facility (GEF) for projects such as development of Nationally Appropriate Mitigation Actions, preparation for the National Communication to the UNFCCC and improvement of decision making processes within the country.

In 2013 and 2014, a range of bilateral donors also committed supports to various projects in the country. For instance, a project “Supporting Kazakhstan’s transition to a green economy model” (EUR 7.1 million committed by the European Union, EU) is the support for the long-term sustainable economic development of Kazakhstan through supporting the implementation of the country’s Green Economy Concept. The project is jointly implemented by the EU, the United Nations Development Programme (UNDP), the United Nations Economic Commission for Europe (UNECE) and the Kazakh government for the period between 2015 and 2018 (UNDP and UNECE, 2015). The United States committed to support multiple projects such as energy efficiency for electricity grids. France, Norway, Australia, Germany, Korea and Greece also committed to climate-related development finance in 2013 and 2014.
Figure 4. Channels and financial instruments used to deliver climate-related development finance (USD million per year: 2013-14 average)

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).
Table 2. Providers of climate-related development finance and the sectors where finance was committed to (in 2013 and 2014)

<table>
<thead>
<tr>
<th>Provider</th>
<th>Banking, financial and business services</th>
<th>Energy generation and supply</th>
<th>General environmental protection</th>
<th>Government and Civil Society</th>
<th>Health</th>
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<td><strong>Bilateral</strong></td>
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<td>Australia</td>
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<td>Czech Republic</td>
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<td>EU institutions excl. EIB</td>
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<td>United States</td>
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<td><strong>Multilateral</strong></td>
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<tr>
<td>Climate Investment Funds</td>
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<tr>
<td>European Bank for Reconstruction and Development</td>
<td>X</td>
<td>X</td>
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<tr>
<td>European Investment Bank</td>
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<td>Global Environment Facility</td>
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<td>Global Environment Facility</td>
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</table>


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.

Kazakhstan’s INDC refers to the Concept for Transition to a Green Economy, as well as the Law on Energy Saving and Energy Efficiency and the Law on Supporting the Use of Renewable Energy Sources. Based on these documents, this section outlines selected examples of internationally supported projects on climate change by bilateral and multilateral sources in the following sectors. Some of these projects are also co-financed by domestic sources.

- Energy supply and consumption (energy efficiency);
- Energy supply and consumption (renewable energy);
- Sustainable use of water resources;
- Sustainable agriculture;
- Waste management system.

Energy supply, and consumption (energy efficiency)

Developing and scaling up low-carbon energy systems at generation, transmission and consumption are crucial for pursuing the country’s green economy, given the high GHG intensity of the country’s economy (i.e. 0.87 million tCO₂e per USD of GDP PPP² in 2013) and the ambitious targets under the Green Economy Concept and the INDC. This GHG intensity level was the third highest among the countries of EECCA after Turkmenistan and Ukraine, and also among the highest in the world (OECD, 2012; IEA, 2015). Major reasons for the high energy intensity include the considerable reliance on low quality coal in the total primary energy supply (TPES), production of raw materials, loss in the electric power transmission and inefficient use of heat and electricity. For instance, About 50% of energy-related infrastructure in the country is older than 30 years, some 50-60 years old (ADB, 2012).

Kazakhstan approved in 2013 the Energy Efficiency Program 2020 that targets a 25% reduction of energy consumption per GDP by 2020, and the Concept for Transition to a Green Economy that targets a 30% reduction by 2030 and 50% by 2050. While Kazakhstan has implemented a range of energy efficiency measures, there still remain a variety of barriers to scaling up finance for energy efficiency. These include the lack of information on best practices, inadequate market drivers for introducing available technologies (e.g. energy tariffs and underdeveloped local supply chains), insufficient engineering and economic knowledge on energy efficiency measures (GEF, 2010).

The GEF and the EBRD have conducted “Reducing GHG Emissions through a Resource Efficiency Transformation Programme for Industries (ResET)” in order to reduce energy consumption and associated GHG emissions by facilitating the adoption of more efficient technologies and processes in Kazakhstan (GEF, 2012). The programme would improve the productivity and energy efficiency of the industry of the country through reducing the carbon (and resource more broadly) intensity.

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² Gross Domestic Product Purchase Power Parity
Improving energy efficiency for district heating networks also has a great potential to reduce GHG emissions, given that 80% of the national district heating networks were considered to be in the urgent need for rehabilitation and replacement. An estimated cost of such rehabilitation and replacement is at least USD 7 billion (ADB, 2012). The project “CAEPCO District Heating”, supported by the EBRD and the Climate Investment Funds, aims to rationalise tariffs for heat, introduction of meters, a substantial reduction in heat losses in distribution, and improved quality of service provision in Pavlodar, Ekibastuz and Petropavlovsk (CTF, 2012; EBRD, 2015). The programme was designed under the broader “District Heating Modernisation Framework”. The Asian Development Bank (ADB) also provided Karaganda city with support for: reconstruction and replacement of main distribution pipelines and pumping stations; installation of individual and central heating points and sub-stations, metering, and a Supervisory, Control and Data Acquisition System (SCDAS); and capacity building at an institutional level (ADB, 2012).

Reducing technical and economic losses in the energy (primarily electricity) transmission lines can contribute to a deep reduction of GHG emissions, given the often obsolete technologies and infrastructure used in Kazakhstan (ADB, 2014). The project “Akmola Electricity Distribution Network Modernization and Expansion Project” supported by the ADB aims to install modern electricity meters and automatic control systems, and strengthen the capacity and efficiency of transformers and distribution lines in Akmola region. With these measures the project is meant to substantially reduce distribution network losses and increase in energy efficiency (ibid.). Another example is the EBRD-supported “Kyzylorda Electricity Distribution” project in the Oblast Akimat. This project is to provide loans to the Joint Stock Company (JSC) Kyzylorda Regional Electricity Company (KREC), a power utility owned by the Oblast Akimat. The loans are used to modernise the electricity distribution network, through (e.g.) installing modern metering and automated control systems, and upgrading electricity transformers and distribution lines. The project is expected to cut annual electricity losses by 30 million kWh, which is the equivalent of 30 000 tCO2e (EBRD, 2014).

The United States also committed to provide a grant to the Kazakhstan electricity distribution company (JSC Alatau Zharyk, or AZHK), aiming to support a feasibility study on a distribution automation project in the Almaty region (USTDA, 2013) to reduce electricity losses through the transmission lines. AZHK has experienced significant technical and commercial losses (about 19%) in electricity transmission caused by the aged infrastructure (technical losses) and poor billing and theft (commercial losses), which has created incentives to reduce transmission losses in terms of both economic and climate considerations.

Another example of areas that have large potential to save energy is buildings. A project “LGGE Promotion of Energy Efficient Lighting in Kazakhstan”, supported by the GEF, aims to disseminate energy efficient lighting products through: efficient lighting policy and institutional frameworks; energy saving lamp market development; capacity development; efficient lighting demonstration in public sector (GEF, 2010). Switching to more efficient lighting products can significantly reduce GHG emissions by around 45% resulting in annual GHG emissions reduction in the range of six million tCO2e.

Bilateral supports have also been committed to projects relating to energy efficiency and renewable energy. Germany (through BMZ) also provides USD 1.4 million of grant to a project on introducing renewable energy and energy efficiency to buildings in Astana and Karaganda. Norway supports Kazakhstan with developing the Kazakh Emission Trading Scheme (ETS)3. Norway provided technical support to then Ministry of Environmental Protection (currently partly merged with and under the jurisdiction of the Ministry of Energy) and its executive body, Zhasyl Damu, in implementation of regulation on monitoring, reporting and verification. The project also helped Kazakhstan prepare legislative instruments related to the implementation of the ETS, based on the EU’s experience (Carbon

3 Full-implementation of the ETS is currently suspended.
Limits, n.d.). The United States also committed to a grant (USD 2.9 million) to help Kazakhstan develop and implement a low emission development strategy and support the implementation of the ETS (US, 2012).

Finally, energy efficiency for the transport sector also has significant potential to reduce GHG emissions as outlined in the Concept for Transition to a Green Economy. There are a number of reasons for high GHG emissions from the transport sector, such as aged vehicle fleet (80% of all), low fuel quality compared to the European standards, limited use of compressed natural gas (CNG) due to the lack of gas infrastructure, and substandard road infrastructure for public transport, electric-powered mobility, cycling and walking (Prmanova et al., 2015). The UNDP and the GEF have supported Almaty city in limiting the growth of the transport-related GHG emissions in the city since 2010, whilst improving urban environmental quality. The EBRD provided Almatyelectrotrans (a municipally-owned company) with loans to introduce 200 new CNG buses, aiming to reduce GHG emissions by replacing outdated diesel busses currently in operation (EBRD, 2012).

Table 3. Examples of projects supported by international climate-related development finance (Committed in 2011-2015)

<table>
<thead>
<tr>
<th>Project type</th>
<th>Project</th>
<th>Finance provider</th>
<th>Financial instrument and amount</th>
<th>Co-financing by domestic actor</th>
<th>Key domestic institution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Energy efficiency in building</td>
<td>Reducing GHG Emissions through a Resource Efficiency Transformation Programme (ResET) for Industries</td>
<td>GEF and EBRD</td>
<td>Grant (GEF: USD 7 mn, EBRD: USD 1 mn)</td>
<td>Min. of Industry and New Technologies (In-kind: USD 0.5 mn)</td>
<td>Ministry of Industry and New Technologies</td>
</tr>
<tr>
<td>CAEPCO District Heating (under the District Heating Modernisation Framework)</td>
<td>EBRD and CIF (through CTF*)</td>
<td>Concessional loan (CTF:USD 10 mn), Non-concessional loan (EBRD:USD 30 mn)</td>
<td>GoK and CAEPCO***</td>
<td>JSC Central-Asian Electric Power Corporation (CAEPCO)</td>
<td></td>
</tr>
<tr>
<td>Karaganda District Heating Network Rehabilitation Project</td>
<td>ADB</td>
<td>Grant (USD 1.6 mn)</td>
<td>N.A**.</td>
<td>Ministry of National Economy, Karaganda Oblast, City of Akimat, Teplotranzit JSC</td>
<td></td>
</tr>
<tr>
<td>Electricity distribution</td>
<td>Kyzylorda Electricity Distribution in the Oblast Akimat (2014)</td>
<td>EBRD</td>
<td>Non-concessional loan (USD 26.7 mn)</td>
<td>N.A.**</td>
<td>Kyzylorda Regional Electricity Company (KREC)</td>
</tr>
<tr>
<td>Akmola Electricity Distribution Network Modernization and Expansion Project</td>
<td>ADB</td>
<td>Loan***** (USD 25 mn)</td>
<td>N.A.**</td>
<td>Central-Asian Electric Power Corporation (CAEPCO)</td>
<td></td>
</tr>
</tbody>
</table>
While Kazakhstan has rich reserves of fossil fuels and uranium, the country also has significant renewable potential such as wind, solar, hydro and biomass. The Concept for Transition to a Green Economy has set a target of 50% alternative and renewable energy in the energy mix by 2050 (IEA, 2015). Despite the potential and the importance highlighted in several national policy documents, such renewable energies have not been sustainably captured and deployed due to a range of technical, institutional, social and economic barriers (Karatayev & Clarke, 2014). Barriers to developing renewable energies in Kazakhstan include: limited availability of long-term financing; lack of risk mitigation measures in the newly established renewable market; limited experience and capacities in project planning and management; and the uncertainties of the current regulatory framework (CTF, 2013). The other important barriers identified by the United Nations Development Programme (UNDP) around development of renewable energy in Kazakhstan are also summarised below (GEF and UNDP, 2015).

- Counterparty risk: The level of capitalisation of the Settlement Center (buyer of the electricity generated) is uncertain and there is a concern amongst possible lenders to renewable energy projects.
- Currency risk: Tariffs for renewable energy are fixed in local currency (Kazakh Tenge) for 15 years, while the existing FiT indexation formula is based on the inflation rate.
- Grid management risk: The Grid Code, developed in the 1970s, may no longer be adequate to address the needs of present day system, in particular the challenge of managing up-take of decentralised energy including renewable energy.
A number of projects, including on wind and solar power plants, have been supported by climate-related development finance, in particular the EBRD and the Climate Investment Funds through its Climate Technology Fund (CTF). Notably, the interventions by the EBRD and the CTF were explicitly designed to facilitate private sector participation in project development and mitigate associated risks to do so.

For instance, “Yereymen tau Wind Farm” project, supported by the EBRD and the CTF, was designed to build up real-life construction experience relating to wind power plants of this scale in Kazakhstan. Concessional finance by the CTF contributes to reducing financial risks, together with guarantees and equity contribution as well as the Feed-in Tariff scheme of the country (CTF, 2013). The “Burnoye Solar” project supported in the similar scheme is implemented in the Zhambul region that has been facing frequent energy deficits. Local and European contractors jointly implement the project, aiming also to facilitate a transfer of technology into the country. Taxes from the plant are planned to be paid by the local budget (EBRD, 2015b).

The Renewable Energy Finance Facility (KAZREFF) supports renewable energy projects by providing blended financing (i.e. concessional and non-concessional loans) and also technical assistance. The KAZREFF is supported by the CTF and the EBRD and allows for local currency financing. These measures are expected to lower the financial risks associated with renewable energy development in the country, thereby attracting private sector engagement. Yet, some countries in the CTF’s Trust Fund Committee raised issues around transaction costs of financing in local currency, when the Committee discussed approval for the project (US, 2011; Germany, 2011).

A similar approach is being taken by the GEF and the UNDP in a project called “De-risking Renewable Energy Investment”, aiming at promoting private sector investments in large- and small-scale projects in order to achieve Kazakhstan’s 2030 and 2050 targets for renewable energy (GEF and UNDP, 2015). The 5-year project aims to take a sector-wide, rather than project-based, approach based on qualitative and quantitative assessment of risks from private sector perspective. The programme uses a methodology developed by the UNDP to identify most cost-effective combination of de-risking tools and incentives to address political and financial risks (GEF and UNDP, 2015).

Table 4. Examples of projects supported by international climate-related development finance (Committed in 2011-2015)

<table>
<thead>
<tr>
<th>Project type</th>
<th>Project description</th>
<th>Finance provider</th>
<th>Financial instrument and amount</th>
<th>Co-financing by domestic actor</th>
<th>Key domestic institution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Renewable energy</td>
<td>Yereymen tau Wind Farm (with CTF) (2014)</td>
<td>EBRD, CIF through CTF*</td>
<td>Grants (CTF: USD 1 mln), Concessional loan (CTF: USD 24.2 mln), Non-concessional loan (EBRD: USD 83.1 mln)</td>
<td>N.A.** (equity participation by the project sponsor?)</td>
<td>Samruk-Green Energy LLP (being part of the National Fund &quot;Samruk-Kazyna&quot; JSC)</td>
</tr>
<tr>
<td>Renewable Energy Finance Facility (KAZREFF) (2011)</td>
<td>EBRD, CIF through CTF</td>
<td>Concessional loan (CTF: USD 29.5 mln), Non-concessional loan (EBRD: USD 56.6 mln)</td>
<td>N.A.**</td>
<td>Private sector entities developing renewable energy projects in Kazakhstan.</td>
<td></td>
</tr>
<tr>
<td>Burnoye solar power plant (2015)</td>
<td>EBRD, CIF through CTF</td>
<td>Non-concessional loan (EBRD: USD 79.4 mln), Concessional loan (CTF: USD 15 mln)</td>
<td>N.A.** (equity participation by the project sponsor)</td>
<td>Samruk Kazyna Invest LLP (part of Kazakhstan’s “Samruk-Kazyna”) together with UK-based investment firm</td>
<td></td>
</tr>
</tbody>
</table>
### Increase of energy efficiency and dissemination of renewable energy supply in church related buildings in the diocese of Astana and Karaganda (2013)

<table>
<thead>
<tr>
<th>De-risking Renewable Energy Investment (2015)</th>
<th>GEF</th>
<th>Grant (GEF: USD 4.7 mln; IFC: USD 1.2 mln; UNDP: USD 0.1 mln)</th>
<th>GoK (USD 18.3 mln), Private sector’s equity participation (USD 6.3 mln in total)</th>
<th>Ministry of Energy, State Programme on Water Supply to Farming Communities, Kazakhstan Green Building Council, Nazarbaev University,</th>
</tr>
</thead>
<tbody>
<tr>
<td>Policy development</td>
<td>Norway</td>
<td>Grant (USD 0.4 mln)</td>
<td>N.A.**</td>
<td>Ministry of Environmental Protection**, Zhasyl Damu</td>
</tr>
</tbody>
</table>

* CTF stands for the Clean Technology Fund under the Climate Investment Funds.
**Information on co-financing from domestic sources is not found.
*** Currently partially Ministry of Energy.

### Agriculture and water

Agriculture and water sectors are considered to be particularly important for adaptation action in the country, and necessary adaptation actions for these two sectors are closely linked with each other. Water resource distribution is uneven across the regions in the country, thus the expected impact of climate change on the water sector would vary considerably among them (GoK, 2010). The largest consumer of water resources is watering and irrigation in the agriculture. Rehabilitating and upgrading the aging infrastructure for drinking water supply and wastewater treatment is also needed, since there have been high levels of water losses, excessive consumption of electricity and reagents. Fragmentation of policy and institutional arrangements for water management (e.g. operation of water utilities) has also contributed to the vulnerability of the sector to adverse impacts of climate change. (GoK, 2010).

In the agriculture sector, strategically important crops such as cotton, rice, sugar beet, and fodder are fully dependent on irrigation systems that have been deteriorating due to poor water management (mentioned above) and inappropriate agricultural practices (WB, 2015). Given that the climate change-related risks on agriculture are directly related to water availability for irrigation systems, improvement of water use for such systems is likely to contribute to reducing vulnerability of the agriculture sector to climate change, and its productivity. The “Irrigation and Drainage Improvement Project”, supported by the World Bank, is to improve irrigation and drainage service delivery to support farmers in the country. The project implements: rehabilitation of irrigation and drainage systems; improvement of management, operation, and maintenance of these systems; and more efficient use of associated irrigated lands (WB, 2015).

The EBRD has committed to a number of projects related to water supply and sanitation. For instance, a loan up to USD 10 million has been committed to the State Communal Enterprise Kyzylorda Su Zhuyesi in the city of Kyzylorda to support the rehabilitation and upgrade of the water and wastewater infrastructure in the city. Components of the project include, among others, improving energy efficiency and rationalising commercial water tariffs to cover the full costs of service (EBRD, 2014). Another project supported by the EBRD was designed to introduce a new sludge treatment and bio-gas facility to the waste
water treatment plant in the city of Shymkent. This is expected to reduce sludge humidity and use bio-gas for power generation, which leads to significant GHG reductions (EBRD, 2010).

Table 5. Examples of projects supported by international climate-related development finance (Committed in 2011-2015)

<table>
<thead>
<tr>
<th>Project type</th>
<th>Project</th>
<th>Finance provider</th>
<th>Financial instrument and amount</th>
<th>Co-financing by domestic actor</th>
<th>Key domestic institution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Irrigation management</td>
<td>Second Irrigation and Drainage Improvement Project (2014)</td>
<td>WB (IBRD)</td>
<td>Loan* (USD 102.9 mln)</td>
<td>GoK (USD 240 mln)</td>
<td>Ministry of Agriculture</td>
</tr>
<tr>
<td>Drinking water supply</td>
<td>Kyzylorda Water (2014)</td>
<td>EBRD</td>
<td>Non-concessional loan (USD 10.9 mln)</td>
<td>N.A.</td>
<td>State Communal Enterprise Kyzylorda Su Zhuyesi, City of Kyzulorda</td>
</tr>
<tr>
<td>Wastewater management</td>
<td>Shymkent Waste Water Treatment Essential Modernisation (2015)</td>
<td>EBRD</td>
<td>Non-concessional loan (USD 13.7 mln)</td>
<td>GoK (USD 9.1 mln) Private sector investment by Vodnye Resourys Marketing (USD 0.6 mln)</td>
<td>Vodnye Resourys Marketing</td>
</tr>
</tbody>
</table>

*Information on concessionality is not found.
** Information on co-financing by domestic actors is not found.

Waste management

Waste management has been identified as a priority in the country’s Concept for a Green Economy given the current situation being “dumping of waste, often without even basic safety checks, is polluting large areas of our land and our water supplies” (Suleimen, 2014). Improvement of waste management can also lead to significant co-benefits for climate change actions.

The “Kazakhstan Waste Management Framework (KWMF)”, supported by the Climate Technology Fund (CTF) of the Climate Investment Funds, aims to facilitate dialogues with the Kazak government on developing a new legislation for the waste management sector that would include an enhanced use of renewable energy sources. Activities under the KWMF also include building the necessary institutional capacity for implementation of relevant projects. The KWMF provides debt financing to municipal or private operators, which develop waste-to-energy projects in Kazakhstan. The first phase of the project, implemented by the EBRD, has focused on building a pipeline of municipal waste-to-energy projects that aim to ensure energy recovery from waste and introduce modern waste management systems (CTF, 2014).

Relating in part to the KWMF, “Enhanced Partnership – Solid Waste Modernisation Framework” also aims to facilitate producing and using energy out of waste. It also pursues other areas of improvement of the national policy and regulatory frameworks. They include developing a model public service contract, undertaking cost reduction measures in participating utilities, and reforming tariffs to increase and improved collection rates for solid waste sector (EBRD, 2014c)
Table 6. Examples of projects supported by international climate-related development finance  
(Committed in 2011-2015)

<table>
<thead>
<tr>
<th>Project type</th>
<th>Project</th>
<th>Finance provider</th>
<th>Financial instrument and amount</th>
<th>Co-financing by domestic actor</th>
<th>Key domestic institution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Waste managemen t (Energy recovery from waste)</td>
<td>Kazakhstan Waste Management Framework (2011)</td>
<td>CIF (through CTF*)</td>
<td>Concessional loan (USD 22.5 mln)</td>
<td>N.A.** (expecting co-finance by Municipal Government/ Sponsors/ Central Government)</td>
<td>Local utilities</td>
</tr>
</tbody>
</table>

* CTF stands for the Clean Technology Fund under the Climate Investment Funds (CIF).  
** N.A.: Information on co-financing from domestic sources is not found.  
***The amount has not yet been approved as of April 2016, while CTF funding was approved in 2014.

In-country enabling environments for climate actions

Legal and policy frameworks

Kazakhstan has set several policy documents to pursue low-carbon, climate-resilient development. For instance, the Concept of Kazakhstan for Transition to Green Economy identifies regulatory priorities and measures for green growth, highlighting a range of recommendations that include adjusting existing laws and regulations to achieve a “green economy” including investment facilitation in clean energy. The Law on Energy Saving has reinforced the government’s legal authority to regulate the energy markets, related (but not limited) to climate action including principles of energy savings and efficiencies, certain minimum standards of energy performance for mechanical equipment, buildings, etc. The Law on Supporting the Use of Renewable Energy Sources provides a legal basis for the feed-in tariff scheme. The government is also developing a Concept of the Law on the adaptation to climate change and a low-carbon strategy that would relate to, for instance, green technology development, the Kazakh Emission Trading Scheme and the policies to promote renewable energies (Yessekina, 2016).

Both the INDC and the Third/Sixth National Communication to the UNFCCC stress that the country is vulnerable to climate change. However, there has been no national adaptation plan to date. The Ecological Code of the Republic of Kazakhstan, No. 212 of 2007 (amended in 2011) is a general law to address a variety of environmental and climate issues. The Code specifies ecological definitions, determines the authority of the government to regulate different aspects of the natural environment, and stipulates various institutional arrangements between governmental bodies, amongst others.

<table>
<thead>
<tr>
<th>Regulatory policies for renewable energies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Renewable energy targets</td>
</tr>
<tr>
<td>Biofuels obligation / mandate</td>
</tr>
<tr>
<td>Electric utility quotas obligation / Renewable Portfolio Standard (RPS)</td>
</tr>
<tr>
<td>Feed-in tariff / premium payments</td>
</tr>
<tr>
<td>Heat obligation / mandate</td>
</tr>
</tbody>
</table>
Net metering

Tendering (i.e. Public bidding) for renewable energy

 Tradable renewable energies certificates

Fiscal incentives for renewable energies and public financing

Capital subsidy / rebate

Energy production payment

Investment or production tax credits

Public investment, loans or grants

Reduction in sales, energy, CO₂, 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


Domestic climate finance mechanisms and frameworks (selected examples)

Kazakhstan has co-financed a range of climate-related projects supported by international sources, using domestic financial resources. The Sovereign Welfare Fund Samruk-Kazyna provides financing to the energy sector, either by direct investment in electricity generation and supply facilities, or as a shareholder of national development institutions and national companies. There are also policy instruments to provide fiscal incentives towards scaling up renewable energy. A feed-in tariff scheme and tax exemption schemes have also been put in place. Below are shown some examples of such mechanisms and frameworks.

Feed-in tariff scheme

The feed-in tariff scheme was adopted, targeted at an increase in renewable electricity generation that is in line with the targets from the Green Energy Concept of supplying 3% of electricity by wind and solar in 2020. Renewable energy power plants benefit from guaranteed power prices for 15 years period (IEA and IRENA, 2016).

Table 7. Eligible RES technologies and fixed rate of feed-in tariffs in Kazakh Tenge (KZT) and USD

<table>
<thead>
<tr>
<th>Eligible Technologies</th>
<th>Fixed Feed-in tariff KZT/MWh</th>
<th>Feed-in tariff US$/MWh (July 2015)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wind</td>
<td>22,680</td>
<td>121.94</td>
</tr>
<tr>
<td>Solar PV</td>
<td>34,610</td>
<td>186.08</td>
</tr>
<tr>
<td>Small hydropower</td>
<td>16,710</td>
<td>89.84</td>
</tr>
<tr>
<td>Biogas</td>
<td>32,230</td>
<td>173.28</td>
</tr>
</tbody>
</table>

The Kazakhstan Emission Trading Scheme

Kazakhstan launched an Emission Trading Scheme (ETS) in January 2013, and has implemented the pilot phases between 2013 and 2015. The ETS covers entities that emit GHG above a certain level in the energy sector (including oil and gas), mining and chemical industry. While Phase III of the ETS is meant to cover the period between 2016 and 2030 the system is currently suspended until 2018.

Tax reliefs

The government also adopted in 2013 exemption from customs duties. The exemption is granted to legal entities implementing an investment project or a strategic investment project under an investment contract with the government. Land and property tax benefits are also available for those entities implementing a renewable investment.

The Sovereign Wealth Fund “Samruk-Kazyna”

This fund is a shareholder of almost all national development institutions and national companies. It incorporates all investment and innovative development institutions (the Bank for Development of Kazakhstan, the Investment Fund of Kazakhstan, the National Innovation Fund, the Damu Fund and KazInvest, among others). Samruk-Kazyna provides direct financing to energy sector facilities too, including renewable energy.

The National Fund

The National Fund is a state-run fund that comprises financial assets accumulated in Kazakhstan’s government account with the National Bank of Kazakhstan. The Fund accumulates a substantial portion of the country’s oil revenues. It was set up to work towards stable social and economic growth; financial resource accumulation for future generations; reduced exposure to adverse external impacts; and decreased exposure of the economy to volatile commodity prices.

Capital investment by the governmental bodies

State-funded grant support the Renewable Energy Transfers Programmes (under the Ministry of Energy) is available for small-scale renewable energy projects. The State Programme on Water Supply to Farming Communities (under the Ministry of Agriculture) was also put in place for renewable energy applications in the agricultural sector (GEF and UNDP, 2015).
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

<table>
<thead>
<tr>
<th>Entity</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ministry of Energy</td>
<td>Established in August 2014 as the lead ministry for energy policy and governance. The Ministry was created following a merger of functions of the former Ministry of Oil and Gas, the Ministry of Industry and New Technologies and part of the Ministry of Environmental Protection and Water Resources. (the water resource part was merged with the Ministry of Agriculture).</td>
</tr>
<tr>
<td>Ministry of Agriculture</td>
<td>Responsible for overall implementation through the Committee for Water Resources</td>
</tr>
<tr>
<td>Ministry for Investment and Development</td>
<td>Responsible for diverse sets of policies on industry and industrial-innovative development, scientific and technical development of the country, including energy efficiency</td>
</tr>
<tr>
<td>Ministry of National Economy</td>
<td>Executive body that carries out management in the areas of strategic planning, tax and budget policy, as well as policies related to public-private partnerships, public investment projects, promotion of sound competitions amongst others.</td>
</tr>
<tr>
<td>Ministry of healthcare and social development</td>
<td>In charge of regulating and organising the delivery of social services in public health and medical care</td>
</tr>
<tr>
<td>JSC “Zhasyl Damu” (under Min. of Energy)</td>
<td>Responsible for development of the waste management system, and establishment and smooth functioning of GHG emission reduction measures</td>
</tr>
<tr>
<td>JSC “National Agency for Export and Investment” (KAZNEX INVEST –under Min. of Investment and Development)</td>
<td>In charge of promoting the diversification of the national economy by creating the most favourable conditions for development and promotion of Kazakhstan’s processed exports and attracting direct foreign investments in the priority sectors of the economy.</td>
</tr>
<tr>
<td>JSC “Kazakhstan Electricity Grid Operating Company” (KEGOC)</td>
<td>Responsible for managing and operating the national grid - 45 regional electricity generating companies operate in Kazakhstan.</td>
</tr>
<tr>
<td>Climate Change Co-ordination Center</td>
<td>Institutional, expertise and consultative support on climate change related issues to the ministries, Institutes, business companies</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Concept of Kazakhstan for Transition to Green Economy</td>
<td>The document identified regulatory priorities and measures for green growth. The concept highlights a range of recommendations that include adjusting existing laws and regulations to achieve a &quot;green economy&quot; including investment facilitation in clean energy. The document also highlights the &quot;Green Bridge&quot; initiative as a means to transfer technology and best practices within the Eurasian and Central Asian regions.</td>
</tr>
<tr>
<td>Concept for development of the fuel and energy sector of the Republic of Kazakhstan until 2030 (Decree of the Government No 724, 2014)</td>
<td>The Concept determines the necessary action to develop the fuel and energy sector until 2030, linking together development of oil, gas, coal, nuclear and electrical energy industries with account of best global practices and latest trends in global energy development.</td>
</tr>
<tr>
<td>State Program for Accelerated Industrial and Innovative Development of the Republic of Kazakhstan for 2015–2019</td>
<td>This programme aims to reduce energy intensity in manufacturing at least by 15% and an objective on petrochemicals development that could be achieved through unleashing resource potential and favourable market environment.</td>
</tr>
<tr>
<td>The Ecological Code of the Republic of Kazakhstan, No. 212 of 2007 (amended in 2011)</td>
<td>The Code is a general law to address a variety of environmental and climate issues. It codifies ecological definitions, determines the authority of the government to regulate different aspects of the natural environment, and stipulates various institutional arrangements between governmental bodies, amongst others. The amendment passed in 2011 allows Kazakhstan to establish and operate a national carbon emission trading scheme.</td>
</tr>
<tr>
<td>The Law on Power Industry of 2004</td>
<td>The law outlines directives to regulate the power industry, including greater efficiency and the development of renewable energy sources.</td>
</tr>
<tr>
<td>The Law on Energy Saving and Energy Efficiency</td>
<td>The law reinforced the government’s legal authority to regulate the energy markets, including principles of energy savings and efficiencies, certain minimum standards of energy performance for mechanical equipment and buildings, mandatory energy auditing etc.</td>
</tr>
<tr>
<td>The Law on Supporting the Use of Renewable Energy Sources.</td>
<td>The feed-in tariff scheme was adopted through this law, aiming to increase the share of renewable electricity generation in line with the targets from the Concept of supplying 3% of electricity by wind and solar in 2020. The tariffs were set in June 2014</td>
</tr>
<tr>
<td>Governmental Decree on approval of feed-in tariffs in the Republic of Kazakhstan</td>
<td>This decree aims to adoption of feed-in tariffs for the supply of electrical energy produced by renewable energy sources</td>
</tr>
<tr>
<td>Gasification Master Plan of the Republic of Kazakhstan for 2015 – 2030</td>
<td>This Plan concerns the transportation infrastructure, to facilitate larger consumption of gas amongst other fuel and energy resources.</td>
</tr>
</tbody>
</table>

References


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