Tracing the link between Climate Justice Action and the NDCs Kazakhstan

Introduction

In 2023, Kazakhstan adopted key documents that define the country's climate policy in accordance with the country's international climate commitments, namely the 2060 Strategy for Achieving Carbon Neutrality of the Republic of Kazakhstan and the Subsequent Nationally Determined Contribution of the Republic of Kazakhstan (Kazakhstan's NDC 2030).

This case study will contribute to answering the following questions regarding Kazakhstan's Climate Policy:

- How are the country's international climate commitments integrated in the Republic of Kazakhstan's strategies, programs and plans?
- How transparent and coherent is the country's climate policy?
- How are climate goals translated into climate action, specifically at the local level?
- To what extent are the just transition aspects in respect to climate action taken into consideration?

The desk portion of the study covers, in terms of object of research and analysis, climate and environmental policy documents related to achieving the NDC 2030 goals and carbon neutrality before 2060, as well as international and national reports of the Government of Kazakhstan covering the implementation of climate policy. This portion of the study focuses on two objectives:

- Trace the implementation path, from international climate commitments (NDCs) to national and local policies and actual measures taken (*transparency*);
- Cross-reference *the reporting* on climate policy implementation with the estimability of said climate policy and climate action.

In terms of this study, locations of renewable energy projects in Kazakhstan were identified and mapped, providing the scope of data for further selection of specific projects and their assessment of their compliance with *social justice* based on the following criteria[1]:

- Lowest impact on biodiversity and recognizing ecological limits (planetary boundaries);
- Avoiding one-size fits all approach through participatory processes and expand opportunities for local ownership;
- Contributing to the needs of vulnerable communities;
- Prioritizing equitable access and distribution to energy and eradicate poverty;
- Increasing efficiency;
- Respecting human rights and address gender impact of energy poverty;
- Ensuring good governance in regulatory processes, establish transparency mechanisms and inclusive participation.

Based on the results of this case study, we offer recommendations on improving the national climate policy and ensuring its transparency, and on approaches to implementing climate action based on fair transition to a low-carbon and carbon-neutral future.

[1] Developed by CIDSE as criteria of social justice regarding the RES, p. 9, URL: https://www.cidse.org/wp-content/uploads/2018/09/CIDSE-The_Climate_Urgency_Sept_2018.pdf

1. Methodology

The purpose of this study is to investigate:

- how the international climate commitments under the UN Framework Convention on Climate Change and the Paris Agreement are translated into national plans and strategies of Kazakhstan that result in local climate action (concrete policies and projects);
- feedback of locally implemented climate policies and actions translate into national and international climate commitments of Kazakhstan;
- social implications of local climate action, especially in the energy sector, along given RES guiding principles developed by CIDSE.[2]

The methodology of the study combines desk and field research to trace the link between Climate Justice Action and the NDC in Kazakhstan. The desk research tracks the long-term climate goals and targets set by the Strategy for Achieving Carbon Neutrality of the Republic of Kazakhstan and Kazakhstan's NDC 2030 to national and local strategies, programs and plans and checks for their coherence along horizontal and vertical lines (transparency). It also discusses the current reporting of climate policies implementation along horizontal and vertical organizational lines (reporting). The field research is based on mapping of the implemented renewable energy projects and interviewing two projects on renewable energy projects to understand if and how the climate goals are being implemented in a socially just manner (action).

The Strategy for Achieving Carbon Neutrality of the Republic of Kazakhstan and Kazakhstan's NDC 2030 were adopted by the Government at the time when the study was conducted. Thus, the report on the conducted study covers the content of the NDC of Kazakhstan as well as the preconditions for its implementation in a coherent, transparent and socially just manner.

[2] See the RES guiding principles developed by CIDSE here: the Climate Urgency, p.9: https://www.cidse.org/2018/09/19/the-climate-urgency-setting-sail-for-a-new-paradigm/

Climate Goals and Targets

Kazakhstan has set the following long-term climate goals by 2030 and by 2060:

- *Unconditional goal by the end of 2030* — reduce greenhouse gas emissions by 15% below the 1990 level;
- *Conditional goal by the end of 2030* — reduce greenhouse gas emissions by 25% below the 1990 level; provided that there is considerable increase in international investments and substantial grants assistance; access to international technology transfer arrangements; co-financing and participation in international research projects, development work of promising low-carbon technologies and local expertise capacity building initiatives;
- *Goal by the end of 2060* — achieve sustainability and adaptability of Khazakhstan's economy to climate change; achieve carbon neutrality.

Below, Table 1 shows basic specifications for each of these climate goals.

Table 1. Basic specifications of Kazakhstan's long-term climate goals

Descriptor	Unconditional target for 2030	Conditional target for 2030	Goal for 2060
Target indicators	Reducing GHG emissions by 15%	Reducing GHG emissions by 25%	Net Zero
Base year	1990	1990	Inapplicable
Time period	January 1, 2021 — December 31, 2030	January 1, 2021 — December 31, 2030	By the end of 2060
Scale	The entire economy	The entire economy	The entire economy
Scope of greenhouse gases	carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulfur hexafluoride (SF_6)	carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulfur hexafluoride (SF_6)	carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), indirect implication of the other three (groups of) gasses
Scope of IPCC sectors	Energy; Agriculture; industrial processes and product use (IPPU); land use, land-use change and forestry (LULUCF); waste	Energy; Agriculture; industrial processes and product use (IPPU); land use, land-use change and forestry (LULUCF); waste	Energy; Agriculture; industrial processes and product use (IPPU); land use, land-use change and forestry (LULUCF); waste

The Strategy for Carbon Neutrality by 2060 specifies climate targets by decades (see Table 2). They cover greenhouse gas emissions with and without removals from the land-use, land-use change and forestry sector (LULUCF), as well as the amount of greenhouse gas removals in this sector. This document sets targets to reduce greenhouse gas emissions and increase their removals compared to baseline levels in 1990 and current levels in 2020.

Table 2. Climate targets of the Carbon Neutrality Strategy

	1990	2020	2030	2040	2050	2060
	Actual emissions		Unconditional NDC target*	Indicative emission level**		Strategic goal
National net emissions of greenhouse gases, Mt CO_2-eq.	381.7	351.2	324.4	209.9	95.4	0
GHG net absorbtion (-)/ net-emission (+) in LULUCF sector, Mt CO_2-eq.	-3.9	8.4	-20.3	-28.3	-40.3	-45.2
Greenhouse gas emissions, Mt CO_2-eq, excluding LULUCF sector	385.6	342.9	344.7	238.3	135.8	45.2

All things considered, Kazakhstan's long-term climate goals and targets are based on comparable indicators and characteristics. At the same time, it should be noted that the 2030 NDC include both the unconditional and the conditional targets, but hereby the Carbon Neutrality Strategy and other documents under consideration defining Kazakhstan's climate policies fail to provide target indicators and measures for a more ambitious conditional target.

2. Strategies, Programs, and Plans: Transparency of Climate Policies

National and Sectoral Levels

Along with unconditional and conditional economy-wide climate targets, the 2030 NDC sets a number of targets for the energy sector. They are determined by the shares of various energy sources (coal, natural gas, petroleum products, and renewable energy sources) in electricity generation. The 2030 NDC does not set targets for other IPCC sectors (agriculture, IPPU, LULUCF, and waste) and it is deemed that policymakers were not ready to set targets for those sectors.

Table 3. Share of various energy sources and facilities in electricity generation

Energy source	Types of Facilities	2020 indicator, %	2030 target indicator, %
Coal burning		68.89	41.57
Natural gas combustion		19.97	25.04
Combustion of Petroleum		0.05	0.00
Hydropower	Major HPPs, over 35 MW	8.08	11.64
Renewable energy	Wind	1.00	12.52
	Solar	1.25	8.59
	Small HPPs	0.75	0.65
	Biofuel	0.01	0.01
	Overall RES	3.00	21.76

2030 NDC mentions Kazakhstan-2050 Strategy (announced in December 14, 2012 Address of the President of the Republic of Kazakhstan) and the Green Economy Transition Concept (approved by Decree of the President of the Republic of Kazakhstan dated May 30, 2013 No. 577) as long-term strategies upon which implementation of NDC goals and targets should be based. Both documents cover specific target indicators and measures directly related to the implementation of long-term climate goals in the energy sector.

The Kazakhstan-2050 Strategy mentions global energy security as one of the key challenges for the country's development. Responding to that challenge, this Strategy aims to increase the share of energy obtained from RES to at least half of overall energy consumption by 2050. At the same time, the document fails to directly mention climate change. It fails to offer a holistic vision of the country's climate policy, only reflecting the global trend towards reducing the use of fossil fuels.

The Green Economy Transition Concept offers a more detailed vision of approaches to achieving climate goals for the energy sector, setting a target to reduce carbon emissions from the power industry by 15% below 2012, along with a number of other targets linked to achieving long-term climate goals.

Table 4. Climate goals-related target indicators from the Republic of Kazakhstan's Green Economy Transition Concept

Target indicator	Base year	2030	2050
Decrease the GDP energy intensity	2008	30	50
Share of solar, wind and nuclear power plants (alternative energy sources) in electricity generation, %		10	50
Share of gas-fired power plants in electricity generation, %		25	30
Reduction in carbon dioxide emissions in the electric power industry below the current levels, %	2012	15	40

Target indicators of the Green Economy Transition Concept were defined in 2013, failing to take into consideration the need to ensure their compatibility with Kazakhstan's international climate commitments. Therefore, they differ fundamentally from the 2030 NDC and the 2060 Carbon Neutrality Strategy in terms of approaches to definitions, which primarily concerns the choice of 2008 and 2012 as base years. As defined by Kazakhstan's international obligations, the base year for reducing the GHG emissions is 1990. In 2012, the level of GHG emissions from the electric power industry was below 1990, thus making it consistent with the 2030 NDC target indicator. However, to ensure the transparency of climate policies, it is necessary to redefine the target indicator in reducing GHG in electric power industry in the Green Economy Transition Concept to the levels of 1990, defined as the base year for international climate commitments.

Secondly, the Green Economy Transition Concept introduces "share of alternative energy sources" (which includes both the RES and nuclear power), instead of "share of renewable energy sources". Currently, Kazakhstan does not have any NPPs, yet the Government is contemplating on building several NPPs. Their commissioning is expected no earlier than 2034[3] and, accordingly, until 2030, the concepts of renewable energy sources and alternative energy sources are regarded as equivalent. That said, the Green Economy Transition Concept sets the target indicator for the share of renewables at 10%, while the 2030 NDC sets said target indicator at 21.76%, which makes the Concept's target indicator significantly less ambitious than the one defined by the 2030 NDC.

Thirdly, the Republic of Kazakhstan's Green Economy Transition Concept is out of line with the more updated government documents in terms of specific target indicators related to the implementation of the long-term climate coals. The Green Economy Transition Concept also fails to include the 2030 NDC's target indicator of decreasing the share of electricity production by coal-burning (to 41.57%). The Concept opts for 2008 as its base year for estimating the GDP energy intensity, while the so-called Green Kazakhstan National Project (approved by Government Decree No. 731 of October 12, 2021[4]), opts for 2015 as the base year for the same target indicator.

The 2030 NDC specifies that medium-term measures for reducing the GHG emissions, improving energy efficiency and transport, should be implemented based on the 2025 National

[3] The Astana Times, September 23, 2022, URL: https://astanatimes.com/2022/09/kazakhstan-to-select-supplier-for-nuclear-power-technological-solutions-in-2023

[4] Legal information system of Regulatory Legal Acts of the Republic of Kazakhstan, URL: https://adilet.zan.kz/rus/docs/P2100000731

Development Plan[5] both at the national (through the development and implementation of state and government programs) and the local (through the adoption and implementation of territorial development plans) levels. Measures to achieve the targets set by these programs are financed by the state budget and provide the basis for attracting investment.

Increasing the share of renewable energy sources in the overall electricity production is the National Development Plan's main target indicator related to climate goals. Concurrently, the document provides for the construction of 34 wind and 12 solar power plants, as well as 13 hydroelectric power plants, as RES development measures. The 2022–2026 Fuel and Energy Sector Development Concept (approved by No. 724 the Government Decree of the Republic of Kazakhstan dated June 28, 2014) also established this target indicator for 2026 at 7%.

Table 5. RES target indicator in electricity generation, %

2018	2019	2020	2021	2022	2023	2024	2025	2026
1.3	2.4	3.0	3.3	3.8	4.5	5.3	6.0	7.0

By further extrapolating the RES growth rates in electricity generation, based on the target indicators in the Government's medium-term plans, the 2030 share of RES should be 10-15%. This trend corresponds with the Green Economy Transition Concept's target indicator, defined as no less than 10%. However, it fails to match the respective 2030 NDC target indicator, which defines the share of RES at 21.76%. In order to achieve this goal, the growth rate of the RES' share in 2026–2030, compared to that of 0.7% of annual increase in 2021–2025, should get about a fivefold acceleration.

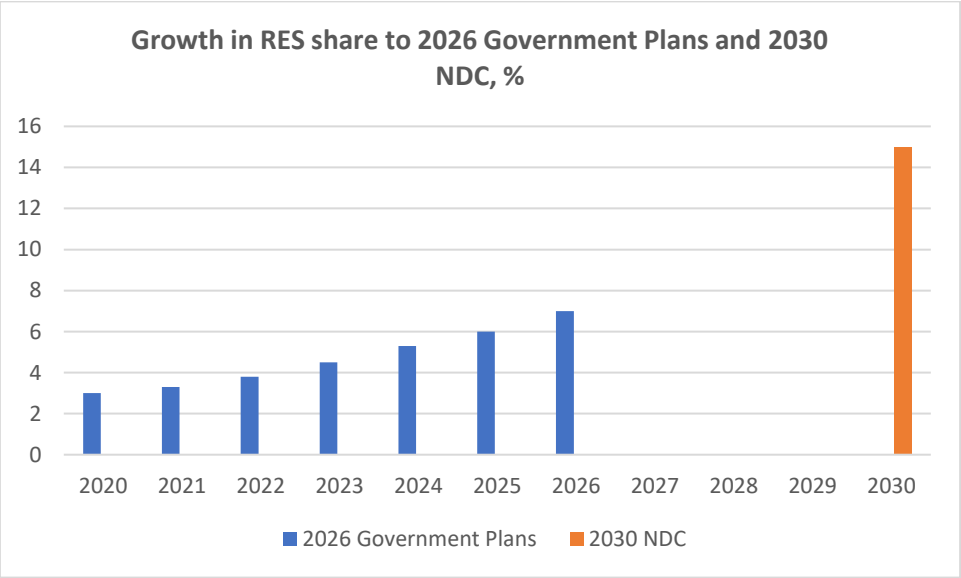

Figure 1. Growth in RES share according to the Republic of Kazakhstan's 2026 Government Plans and 2030 NDC, %

Along with developing the RES, both the long-term Green Economy Transition Concept and the midium-term Government Plans prioritize energy efficiency for the energy supply, housing,

[5] Ibid., URL: https://adilet.zan.kz/rus/docs/U1800000636

public buildings, industry, and transport sectors. The Green Kazakhstan National Project defines respective target indicators for industry, the public sector, housing, and utility services.

Table 6. Green Kazakhstan National Project's energy efficiency target indicators for 2021–2025

Target indicator	2021	2022	2023	2024	2025
Reducing the specific consumption of electricity for production in priority sectors of materials processing industries (non-ferrous and ferrous metallurgy, chemical industry), %	2	4	6	8	10
Reducing energy consumption in public, housing, and utilities sectors, %	3	6	9	12	15

The 2030 NDC views GHG absorption in the LULUCF sector in the context of afforestation and reforestation on 1.5 million hectares of degraded land under the Bonn Challenge. The concept of transition to a green economy covers a number of references to carbon sequestration by forests and perennial crops, but does not cover the corresponding formulated measures for the agricultural and LULUCF sectors. Therefore, the 2030 NDC refers to the National Action Plan (approved by the No. 413 President of the Republic of Kazakhstan Decree of September 14, 2020[6]), whereby they are about to plant more than 2 billion trees for the forest reserves and 15 million trees in settlements during 2021-2025. The Strategy for Achieving Carbon Neutrality provides that by 2060, carbon dioxide absorption in the LULUCF sector, namely sustainable forest management and reforestation, should offset the GHG emissions from agricultural production and partly from other sectors. However, the Strategy itself does not cover any long-term target indicators and measures for sustainable forest management and increase in forested areas.

The 2030 NDC and the 2060 Carbon Neutrality Strategy fail to offer a clear vision for reducing GHG emissions in the agriculture, IPPU, and waste sectors, with the setting of targets, by failing to set target indicators and offer specific tools for implementing emissions-reducing measures. They fail to provide target indicators for medium- and long-term programs and plans that would make a basis for implementation of said measures. As mentioned above, the Government's current strategies, programs, and plans cover, to one degree or another, the climatic aspects of

Climate change adaptation was included in 2030 NDC without any quantification, while the document's respective provisions offer just a review of the current situation in Kazakhstan and the measures being taken. The abovementioned measures include the provisions of chapter 22 of the Environmental Code of January 2, 2021[7] on vulnerability assessment, planning, development and implementation of adaptation measures, monitoring and evaluating their effectiveness, as well as reporting on the impacts of climate change and the efficiency of climate adaptation measures. They apply to sectoral management of agriculture, water management,

[6] National action plan for the implementation of the September 1, 2020 State of Nation Address "Kazakhstan in the New Reality: Time for Action", Legal information system of Regulatory Legal Acts of the Republic of Kazakhstan, URL: https://adilet.zan.kz/rus/docs/U2000000413#z14

[7] Legal information system of Regulatory Legal Acts of the Republic of Kazakhstan, URL: https://adilet.zan.kz/rus/docs/K2100000400

forestry, emergency situations, regional government, and municipal government in the three cities (Almaty, Astana, and Shymkent). In addition, they provide for collecting data for national adaptation communications referred to in Article 7, paragraph 10, of the Paris Agreement. As of early 2023, the climate change adaptation provisions of the Environmental Code were never applied in practice.

Local Level

Territorial development programs (plans) are the main medium-term planning documents at the local level (regions, districts, cities) currently overing the period of 2021–2025. Local climate programs (plans) and local sustainable energy plans (programs) are yet to be drafted, as Kazakhstan's National Planning System doesn't yet provide for such programs (plans). Current territorial development programs (plans) fail to include climate goals and related measures to reduce greenhouse gas emissions or adapt to climate change; they fail to define the vision of local climate policies. It is due to a low level of climate change awareness of local authorities in Kazakhstan. Another important aspect for understanding this situation is that the political power in Kazakhstan remains highly centralized. It is very relevant for the environmental climate policymaking, e.g., a minimum indicator set of environmental quality for local authorities is set by order of the Minister of Ecology and Natural Resources of July 21, 2021.[8] For the first time, it included the indicator of aggregate reduction of greenhouse gas emissions as one of the environmental quality indicators. Setting additional targets and indicators beyond the national regulation requires their substantiation for the national government to ensure funding of relevant measures. Thus, at the time when the current territorial development programs (plans) were adopted the integration of climate mitigation and adaptation into them was beyond the capacity of local authorities.

Several standalone local programs and plans, mainly in the South of the country (Zhetysu and Turkestan regions, Almaty city), do offer target indicators for RES development. They are integrated as a part of energy development sections of those programs and plans. The recent adoption of the Strategy for Achieving Carbon Neutrality of the Republic of Kazakhstan and Kazakhstan's NDC 2030 has established a more clear and explicit connection between the national climate plans and the RES targets. In the past, the RES targets were part of national energy development plans. That said, local authorities have limited influence on planning and development of said sources, so even these targets indicators are poorly laid-out. For instance, the city of Almaty set those indicators with a view towards 2030, while the Turkestan region only plans by 2023. The competence of regional and municipal (in the cities of Almaty, Astana and Shymkent) executive bodies in relation to supporting renewable energy sources connected to the grid is limited to the approval of respective RES facilities construction projects, and allotment of land for said projects. In respect to off-grid RES with a capacity of up to 5 kW, district executive bodies can offer targeted assistance in the amount of up to 50% for the procurement price of Kazakhstan-made power facilities.

Increasing energy efficiency, as well as the transition of public transit to compressed gas and electricity, have received great formulization in the territorial development programs (plans). This mostly concerns improving energy efficiency in public, housing, and utilities sectors, as the respective target indicator is provided in the Green Kazakhstan National Project. As a rule,

[8] Idem, URL: https://adilet.zan.kz/rus/docs/V2100023615

development programs (plans) copy the respective national target indicators (see Table 5), i.e. they are not drafted on the local level. Development programs (plans) for the cities of cities of Almaty and Astana, as well as the Karaganda region, provide the target indicators and measures elated to the reduction of combustion of hydrocarbon fuel in transport (including switching to vehicles that run on gas and electricity), as well as increase in commutes via public transit and cycling. However, those measures are focused on reducing emissions of pollutants into the air and are not directly linked to reducing greenhouse gas emissions and contributing to the country's climate commitments.

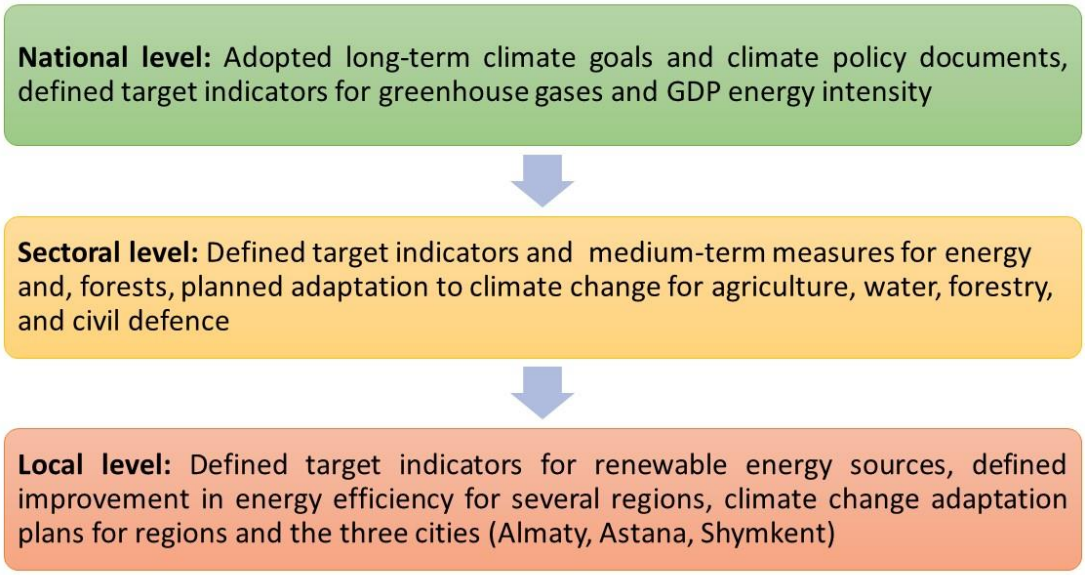

Figure 2. Climate policy-making on the national, sectoral and local levels

Overall, in the light of centralized governance, climate policies in Kazakhstan are made from the top down, while the 2030 specifies the necessity to supplement it with policies from the bottom up. So far, the overall climate policies have been defined at the national level, some of individual aspects were decided on the sectoral level, while on the local level, only standalone regions are offering their input to the future climate plans. Under these conditions, the climate policy of Kazakhstan is more coordinated at the national level and the level of the energy sector, in terms of increasing a small share of renewable energy sources and improving energy efficiency in certain sectors managed by local authorities (government agencies, housing, utilities, and services, municipal transport). However, the tree planting plans associated with the declared carbon neutrality by 2060, for instance, are already drawing more interest from local communities. This is due to the fact that they are less developed and coordinated with plans for land use and redirecting limited water resources for other needs, such as the development of agriculture, and tourism.

The relatively low level of ambition of the 2030 NDC allows the document implementation to be limited to the national level, and standalone interventions in the energy sector based on transfers from the State budget. Along with centralized public administration, this is one of the constraining factors for developing local climate policies. Several standalone regions copy pasted

the RES development target indicators from the national programs being implemented on their territories.

3. Climate Actions

National level

The main instruments for implementing national climate policy in Kazakhstan are the greenhouse gas emission trading system and support for renewable energy sources. The first has been applied since 2013 in accordance with environmental legislation, and the second since 2014, based on provisions of Law No. 165-IV of July 4, 2009, "On Support for the Use of Renewable Energy Sources"[9].

The greenhouse gas emissions trading system covers 199 large facilities in the electricity, cement, lime, gypsum, and brick, oil and gas, mining, metallurgical, and chemical industries. This tool is applied to facilities with annual emissions exceeding 20,000 tons of carbon dioxide per year and regulates approximately 50% of national greenhouse gas emissions. For the period 2022–2025, quotas are distributed among regulated sectors and facilities according to the National Carbon Quota Plan approved by the Minister of Ecology, Geology, and Natural Resources on July 11, 2022, No. 525[10].

The total amount of emissions allowances and reserve allowances for the national emissions trading system is determined based on the carbon budget, which is developed taking into account the need to comply with national contributions in accordance with international agreements of the Republic of Kazakhstan. In accordance with Article 286, Paragraph 6 of the Environmental Code, the carbon budget is determined for 5 years for participants in the greenhouse gas emissions trading system and non-quotable greenhouse gas emissions. For the year 2021, it should be no less than 1.5% below the level of national emissions in 1990, and then it should decrease by no less than 1.5% from the previous year's level. For periods after 2030, the Environmental Code establishes that carbon budgets must be no less than 15% below the 1990 level. The National Carbon Quota Plan for 2022-2025 is calculated based on a 1.5% annual reduction in emissions relative to the previous year's level.

It should also be noted that the provisions of the Environmental Code on carbon budgets do not contain provisions for their differentiated determination with respect to capped and uncapped emissions of greenhouse gases, as well as different sectors regulated by the emissions trading system. Participants in the national emissions trading system are the largest energy, oil and gas, mining, metallurgical, and chemical companies, as well as companies producing building materials. At the same time, uncapped emissions fall on smaller companies and organizations, small and medium-sized businesses, economic sectors, farmers, and households, often dealing with more limited possibilities for reducing greenhouse gas emissions. As typical examples, one can cite emissions of methane and nitrogen oxides in agriculture and from waste, emissions of carbon dioxide from the burning of fossil fuels by households.

Since 2014, the Renewable Energy Support Financial Center has centralized the purchase of electricity generated by renewable energy sources at fixed tariffs. Since 2018, this organization has also bought electricity from renewable energy sources through auction trading. The purchased electricity goes into the national power grid, which is operated by JSC "KEGOC". The Renewable Energy Support Financial Center was originally owned by JSC "KEGOC" but was

[9] Ibid., URL: https://adilet.zan.kz/rus/docs/Z090000165
[10] Ibid., URL: https://adilet.zan.kz/rus/docs/V2200028798

transferred to state ownership in September 2021[11]. The implemented measures to support renewable energy sources allow for increasing their share in electricity production. As of the end of 2022, the country had 142 renewable energy facilities with a total installed capacity of 2332 MW. They included 54 solar energy facilities with a capacity of 1150 MW, 43 wind energy facilities with a capacity of 894 MW, 40 small hydropower plants with a capacity of 280 MW, and 8 MW bioenergy facilities.To date, the development of most of these RES projects cannot be clearly connected to achieving the NDC target. There are still no systems in place to estimate their contribution to the reduction of greenhouse gas emissions, such as operational offset schemes, including for renewable energy development projects. The centralized procurement of electricity generated from renewable energy sources is carried out using fixed tariff and auction mechanisms, providing tangible incentives for increasing the share of renewable energy in electricity production. According to the "Samruk-Energy" Review for the first 7 months of 2022[12], the share of renewable energy sources in overall electricity production reached 4.43% and exceeded the target of the National Development Plan for 2022, which was 3.8%. The economic incentives for the RES development are not based on climate financing, except when they are co-financed from the climate funds of multilateral development funds or specialized international environmental and climate funds.

Local level

Local actions aimed at achieving climate goals include measures to support small renewable energy sources, increase energy efficiency in budget organizations' buildings, and street lighting, promote sustainable mobility in major cities such as Almaty, Astana, Shymkent, and Karaganda.

Since 2014, local executive bodies in districts can provide address assistance (subsidies) for expenses on purchasing off-grid renewable energy sources with a total capacity of up to 5 kW. The subsidies are provided in accordance with the Rules, approved by the order of the Minister of Energy on November 28, 2014 No. 161[13]. Subsidies are provided in the amount of 50% of the installation cost for using renewable energy sources of Kazakhstani production. The consumer who received the subsidy uses the installation for their own needs and sells the produced energy to other consumers. Information about the results of the practical application of this support tool for renewable energy sources is not publicly available.

Since 2016, owners of renewable energy installations with a total installed capacity of up to 100 kW can sell excess electricity to the grid. This measure is implemented in accordance with the Rules approved by the Minister of Energy Order No. 309 of July 8, 2016[14]. The sale of electricity from these low-capacity renewable energy installations is based on a contract with the grid energy supply organization to which the installation owner is connected. The price of the

[11]International Information Agency “Kazinform”, URL: https://www.inform.kz/ru/ao-kegoc-peredalo-raschetno-finansovyy-centr-po-podderzhke-vie-v-sobstvennost-gosudarstva_a3884840

[12] Review of the Renewable Energy Sources (RES) Market in the Republic of Kazakhstan. Results of 7 months of 2022, Samruk-Energy JSC, August 2022, URL: https://www.samruk-energy.kz/images/__7__.pdf

[13] Legal information system of Regulatory Legal Acts of the Republic of Kazakhstan, URL: https://adilet.zan.kz/rus/docs/V1400010083#z0

[14] Ibid., URL: https://adilet.zan.kz/rus/docs/V1600014101#z26

renewable energy sold is determined in accordance with the tariffs established by the energy supply company.

Planned actions to increase carbon dioxide absorption through afforestation (planting over 2 billion trees), adaptation to climate change in agriculture, water management, forestry, and civil protection at the regional and city levels in Almaty, Astana, and Shymkent are currently at the earliest stage of implementation. The IPCC sectors for agriculture and waste management have not yet defined measures and actions that can be directly linked to Kazakhstan's climate goals and commitments.

Overall, Kazakhstan demonstrates the most progress in terms of climate action in the energy sector of the IPCC, which is the case for the national emissions trading system, measures to support RES, and improve energy efficiency. Climate action on regulating greenhouse gas emissions cover major power facilities in the IPPU sector, while medium-term measures for tree planting action are linked to increased carbon dioxide absorption in the LULUCF sector. The least progress is observed in the IPCC sectors, namely agriculture and waste, where the planned actions under the 2030 NDC and the Carbon Neutrality Strategy by 2060 are even difficult to assess in terms of their contribution to achieving the country's climate goals and commitments.

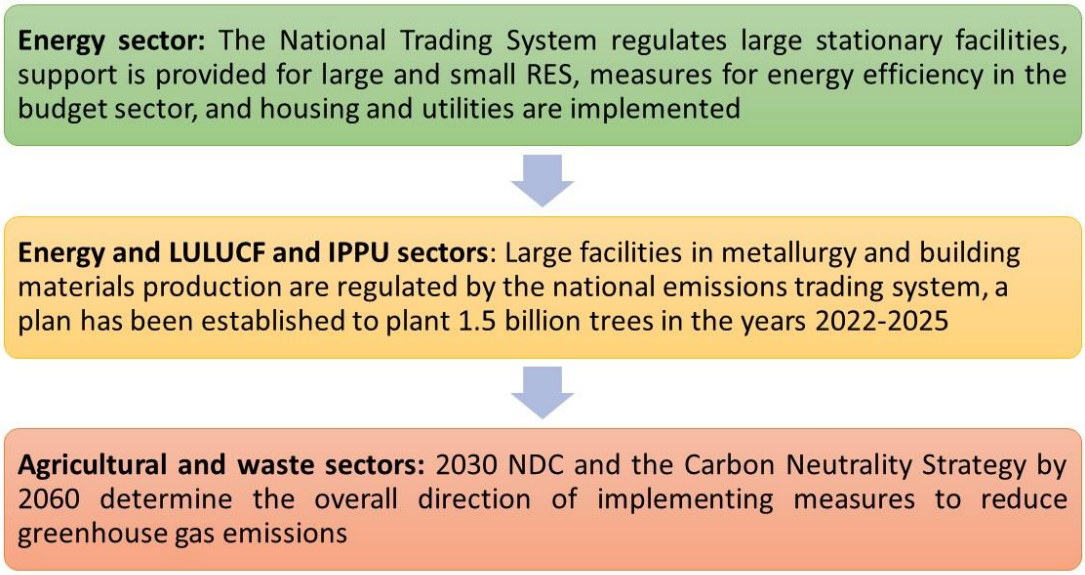

Figure 3. Tools and measures for implementing sectoral climate policy in the Kazakhstan IPCC

The fairness of Kazakhstan's climate actions is discussed in the 2030 NDCs and the strategy to achieve carbon neutrality by 2060 in the context of expectations for increased electricity and heat tariffs, job losses related to fossil fuels, employment in renewable energy-related fields, and the development of a "green economy". At the same time, the absence of clear time frames for phasing out coal, transitioning to electric transportation, and a clear vision for agriculture and waste management in a low-carbon and carbon-neutral economy delays broad public discussions on many issues related to a just transition to the future.

4. Reporting on Climate Action

Kazakhstan is a Party to the UN Framework Convention on Climate Change (UNFCCC) and the Paris Agreement, as well as a Party to Annex I of the Kyoto Protocol. The UNFCCC reporting regime for Annex I Parties includes periodic national communications, biennial reports and annual national greenhouse gas inventories. Kazakhstan has been submitting annual national reports on the inventory of anthropogenic emissions from sources and removals by sinks of greenhouse gases not regulated by the Montreal Protocol to the UNFCCC Secretariat since 2010, and biennial reports since 2014. In addition, as of the end of 2022, Kazakhstan has submitted 8 national communications under the UN Framework Convention on Climate Change.

Such international climate reporting provides for tacking the country's progress in achieving climate commitments and goals on an annual basis. This applies to achieving of the quantified target indicators in terms of 2030 NDC emissions reduction, and 2060 carbon neutrality, presented in Tables 1 and 2 of this report. The National Greenhouse Gas Inventory provides data for this assessment. It allows considering greenhouse gas emissions and removals by 5 IPCC sectors (Energy activities, IPPU, LULUCF, Agriculture, and Waste) and key categories of each of those sectors. Every second year, the Consolidated National Communications and Biennial Reports provide information for reviewing the policies and measures implemented in each of those sectors, as well as cross-sectoral policies and measures. In particular, the format of the Eighth National Communication and the Fifth Biennial Report of the Republic of Kazakhstan[15] includes a description of the national policies and measures implemented for each of the IPCC sectors, as well as individual targets set at the national level. At the same time, it should be noted that they do not reflect a number of targets set by the 2030 NDC and presented in Table 3 of this report. This applies to reducing the combustion of petroleum products in electricity generation and the share of hydropower, as well as the breakdown of renewable energy sources by individual types (solar, wind, small hydro, and biofuels). The data to assess progress towards the carbon neutrality strategies in Table 2 of this report are available both in national communications and biennial reports, and in national greenhouse gas inventory reporting. In general, the format of Kazakhstan's international climate reporting provides for assessing the achievements of climate goals and targets, the implementation of national policies and measures at the national level. However, despite its length, it does not cover climate action carried out at the regional and local levels. There are established information flows to cover climate action carried out at the regional and local levels. The lack of relevant studies also hinders the inclusion of regional and local information and data in the national reporting on climate action. In some cases, the preparation of national communications included funding field studies to close this gap at least partially. However, the national greenhouse gas inventory and the state of the environment reporting are based on already existing sources of information and data and do not provide options for financing regional and local climate studies.

Along with international climate reporting, Kazakhstan publishes annual reports on the state of the environment and on the use of natural resources[16]. The format of these reports includes a section on climate change that provides an overview of the state of the climate and data on greenhouse gas emissions and removals, as well as a brief overview of national climate change

[15] UNFCCC website, URL: https://unfccc.int/documents/624775

[16] Website of the Republican State Enterprise "Information and Analytical Center for Environmental Protection", URL: https://ecogosfond.kz/ltty-bajandama/

policies. At the same time, national reports on the state of the environment and on the use of natural resources, in contrast to international climate reporting, include environmental information on specific regions of Kazakhstan (regions, the capital, cities of republican significance). Currently, they cover issues related to the achievement of climate goals at the regional level, only in terms of measures to develop renewable energy sources and energy efficiency. At the same time, the development of renewable energy and energy efficiency, on the one hand, is not directly linked to climate goal of reducing greenhouse gas emissions, since they are set only at the national level. On the other hand, as shown in section 2 of this report, targets for renewable energy and energy efficiency have not been properly developed at the level of the country's regions. Therefore, the description of these measures is of a general nature and does not provide a comprehensive overview for assessing progress with their implementation. Accordingly, national reports on the state of the environment and on the use of natural resources is unfit to be used as a source of information on regional climate policies and measures until the corresponding priorities and targets are formed at the level of the country's regions.

Since 2021, Samruk-Energy JSC, the largest state-owned energy holding in the country, has been publishing reviews of the renewable energy market in Kazakhstan[17]. These reviews provide information on the implementation of policies and measures to support renewable energy at the national level, as well as information on progress towards achieving the 2030 NDC target indicators for the share of renewable energy sources in electricity generation, broken down by specific types (solar, wind, hydro, biogas). At the same time, it should be noted that these reviews do not yet cover small renewable energy sources operating with no grid connection.

The 2030 NDC specifies the climate change adaptation process provided for in the 2021 Environmental Code as a tool for obtaining information from regional executive bodies, and municipal executive bodies (the capital and cities of republican significance) on developing and implementing the regional climate change adaptation policies and measures. This information will serve as input for the preparation of Kazakhstan's communications on adaptation issues in accordance with Article 7 of the Paris Agreement. It should be noted that as of the time of writing this report, the process of adaptation to climate change has never been initiated in Kazakhstan in practice.

[17] Samruk-Energy JSC website, URL: https://www.samruk-energy.kz/ru/press-center/analytical-review

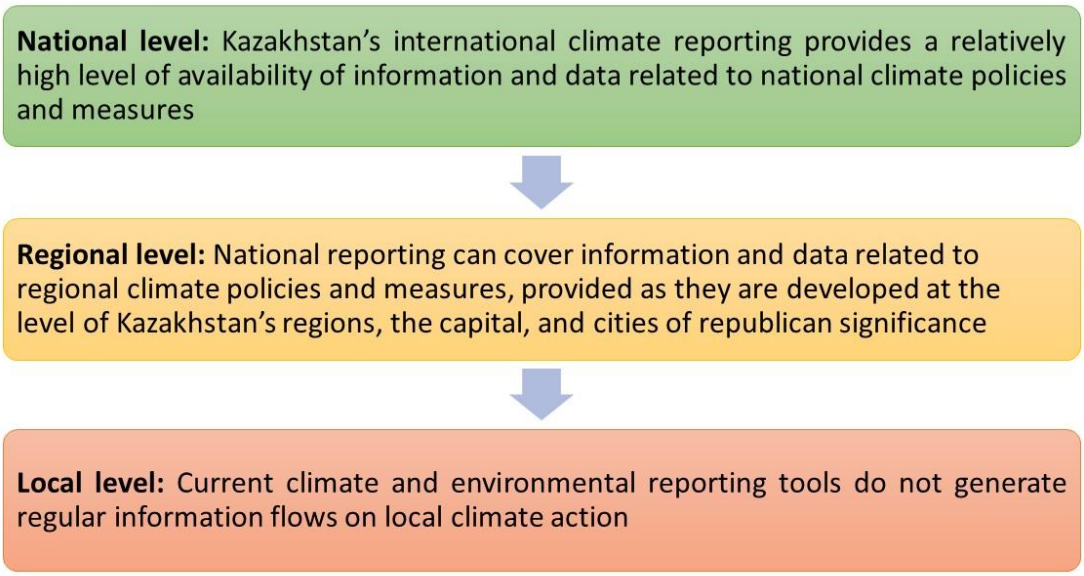

Figure 4. Reporting coverage of climate policies and measures at the national, regional and local levels

5. Case Studies of Successful Practices

Both the Strategy for Achieving Carbon Neutrality of the Republic of Kazakhstan and Kazakhstan's NDC 2030 include the considerations of the implementation of climate action in a socially just manner. However, those considerations focus on mitigating possible increases of energy tariffs and securing jobs in the energy transition from fossil fuels to renewable energy sources. They do not elaborate on the criteria provided by CIDSE:

- Lowest impact on biodiversity and recognising ecological limits (planetary boundaries);
- Avoiding one-size fits all approach through participatory processes and expanding opportunities for local ownership;
- Contributing to the needs of vulnerable communities;
- Prioritising equitable access and distribution to energy and eradicating poverty;
- Increasing efficiency;
- Respecting human rights and addressing the gender impact of energy poverty;
- Ensuring good governance in regulatory processes, establishing transparency mechanisms and inclusive participation.

Kazakhstan's heavy dependence on fossil fuels has led to completely different considerations of climate action and social justice. Thus, most energy production projects cannot be determined as socially just based on the CIDSE criteria. Nevertheless, the country has other entry points for the application of the RES development provided by CIDSE. First, since 2021 the national environmental law requires strategic environmental assessment (SEA) of proposed programs and plans and the energy sector and territorial development programs (plans) to be developed by local authorities. The stumbling block to this entry point is that SEA still needs to be applied in practice in Kazakhstan. Possible explanations are the lack of awareness of the new legislative requirement and the lack of earmarked funds in the budgets to conduct SEA studies. Second, the environmental impact assessment (EIA) procedure can be applied to certain renewable energy production projects based on their screening, namely to:

- industrial installations for cogeneration of electricity and heat with an installed capacity of 50 megawatts (MW) or more;
- large wind installations for generation of electricity with towers higher than 50 meters.

However, currently there are no renewable cogeneration installations with the set threshold of 50 MW and large wind installations have been determined as projects not requiring to undergo the EIA procedure, e.g. the Arkalyk wind installation with a tower height of 97.2 meters, Sofievskaya wind installation with a tower height of 97.3 meters.[18] Thus, both SEA and EIA assessment tools provide potential entry points for the incorporation of social justice considerations according to the RES principles provided by CIDSE but they serve for this purpose for now.

Currently, financing by multilateral development banks provides good practices of the implementation of renewable energy projects in a socially just manner in the country context. For example, the construction of the first 50 MW Solar photovoltaic power plant Burnoye-1 (SPP1) in the Zhambyl Region, South Kazakhstan, was co-financed by the European Bank for

[18] The relevant screening decision can be found on the Unified Environmental Portal, URL: https://ecoportal.kz/

Reconstruction and Development (EBRD). This project aims to provide renewable electrical energy for the region whose development is hindered by energy deficit. It has paved the way for the current development of renewable energy projects in Kazakhstan. In 2015 an independent consultant undertook the Environmental and Social Due Diligence of it for EBRD as a Category B project. Thus, the environmental and social impacts of the project were assessed and the project developer undertook public consultations with the local community to discuss and mitigate potential environmental and social impacts of the activity.

The main social concern of the project raised by the local community was associated with historical land use. The solar panels were placed partially on pastures used previously by nearby villages. In a preliminary assessment, it was noted that the project has led to a reduction in the pastureland of nearby villages by 15-30%. The loss of grassland from weakened pastures could lead to reduced milk and meat production, potentially lowering the income of families involved in the milk and meat trade. This negative impact has been mitigated by the project and no further complaints from local residents were reported. The co-financing by EBRD has ensured access to information and stakeholder engagement in the decision-making, development of a livelihood restoration plan, and a grievance mechanism.[19] The project might not meet all the CIDSE criteria but it provided the assessment of environmental and social impacts, transparency and participatory process of the project development.

Another example of good practice of RES development in a socially just manner is a small-scale renewable energy project in the city of Kostanay. The project was launched in 2014 as a private initiative by a local woman. Currently, it includes solar photovoltaic panels and a wind installation for electricity generation with a total installed capacity of 10 kilowatts (KW) and a solar thermal collector for greenhouse heating. The renewables serve the Golden Pheasant hotel complex territory. In warm seasons, it is serviced autonomously using only renewable energy sources. In winters, it relies on a mix of renewable and grid-provided electricity. The developer is currently planning further development of the project in order to sell excess energy to the electricity grid.

The project site also serves for the demonstration of green technologies by organizing information and educational tours for school students, field studies for students as well as for capacity building for local authorities. The latter might explore the practical application of small-scale renewable projects and other green technologies that they can incorporate into local plans. The project has been supported by local authorities, the GEF Small Grants Programme, Coca Cola company and other organizations, as a demonstration site. The project operator also supports trainings on renewables and green technologies for unemployed and elderly persons. Important aspects of this project from the perspective of the application of the CIDSE criteria include the local ownership by a woman, inclusive participation of unemployed and elderly persons in trainings activities, increasing efficiency and possibilities of replication of the project by its active demonstration to a different group of stakeholders.

[19] See the EBRD's website, URL: https://www.ebrd.com/work-with-us/projects/psd/burnoye-solar-power-plant.html

6. Findings and Recommendations

In early 2023, Kazakhstan adopted the 2060 National Strategy for Achieving Carbon Neutrality and 2030 NDC, and through these documents defined its national climate policy more holistically. The long-term climate goals established by these documents provide a more solid basis for monitoring the implementation of international climate commitments at the level of national policies and measures.

A number of effective documents set target indicators for implementing the country's climate commitments and goals. Referring mainly to to the energy sector, and partly to the LULUCF sector, they cover increasing the share of renewable energy sources, decreasing the share of fossil fuels in the production of electricity, energy consumption in certain areas of activity, and afforestation. That said, some medium-term targets set up to 2025-2026 fall short of the level of ambition of long-term targets, such as the share of renewables in electricity generation.

Recommendation 1

The Ministry of Ecology and Natural Resources should initiate the process of developing more comprehensive target indicators regarding the implementation of long-term climate goals in various sectors of the IPCC, namely IPPU, agriculture and waste sectors.

Recommendation 2

The Government of Kazakhstan should consider revising the medium-term targets to align with the target indicator levels set by the 2030 NDC and the 2060 Carbon Neutrality Strategy.

In Kazakhstan, the process of shaping climate policies and measures is still limited to the national level. Specific elements of the national climate policy and relevant national measures are assigned to the regional or municipal level (regions, the capital, cities of republican significance) without shaping appropriate regional climate policies and measures. In particular, this includes an increase in the share of renewable energy sources in electricity production, energy efficiency in the public sector, housing, and utilities. The 2021 Environmental Code provides for the planning and shaping measures of adaptation to climate change at the regional and the municipal (the capital, and cities of republican significance) levels, baut in practice this process has not yet been initiated.

The highly centralized power in Kazakhstan is hindering and slowing down the development and delivery of climate mitigation and adaptation policies and measures at the regional and local levels. The current pace of deployment of the adaptation process to climate change and the strategic environmental assessment indicates that it might take many years to engage regions of Kazakhstan in climate action.

Recommendation 3

The Ministry of Ecology and Natural Resources should initiate the process of shaping regional and local climate policies and measures covering both climate adaptation, reducing greenhouse gas emissions, and increasing their absorption.

Recommendation 4

The Government should send a clear message that climate change requires immediate policy response at the regional and local levels and more proactive engagement of local authorities in climate action.

The existing climate and environmental reporting formats cover the national climate actions, with the possibility to also cover the regional level (oblasts, the capital, and cities of republican significance). As of today, there are no channels providing for regular inflow of information on local climate actions. They could, among other things, provide feedback on a just transition towards implementing climate policies and measures.

The subordinated organizations of the Ministry of Ecology and Natural Resources produce the national greenhouse gas inventory and the state of the environment annual reports based on the existing sources of relevant information and data. Currently, they cannot subcontract other organizations to close the identified information gaps, including regional and local climate information and data.

Recommendation 5

The Ministry of Ecology and Natural Resources, in liaison with its subordinated organizations, local executive bodies, academic and civil society institutions should:

a) *initiate a discussion of the opportunities for ensuring regular inflow of information on local climate action;*
b) *consider possible options that would enable their subordinated organizations to subcontract other organizations for information gathering and research to close the gaps identified in previous reporting cycles, in particularly on regional and local climate information and data.*

The conducted mapping of renewable energy development projects shows the lack of a clear link between the national climate plans and the RES targets and development projects. There are no widely available tools to estimate renewable energy projects' contribution to greenhouse gas emissions reduction.

The main finding of the conducted in-depth study of a few RES development projects is that the screening by the territorial departments of the Ministry of Ecology and Natural Resources determines such projects as not requiring the EIA procedure by default. Meanwhile, the SEA assessment tool is still not applied in practice. Currently, there is a lack of working tools for the identification and mitigation of negative environmental and social impacts of climate action at the local level.

Recommendation 6.

The Ministry of Ecology and Natural Resources should accelerate the deployment of the strategic environmental assessment and reconsider the criteria for determination to prevent the situation when all RES development projects are recognized as not requiring the EIA procedure.