Information on PaMS relevant for NDC implementation aligned with the MPG requirements (narrative and tabular form)

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Initiative for Climate Action Transparency – ICAT

Deliverable #T

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Abbreviations and Acronyms

BTR	Biennial transparency report
CTF	Common tabular format defined in decision 5/CMA.3
GCAP	Green City Action Plan
GHG	Greenhouse gas
IPCC	Intergovernmental Panel on Climate Change
IPPU	Industrial processes and product use
LULUCF	Land use, land-use change and forestry
MDP	Medium-Term Development Programs
MPGs	Modalities, procedures and guidelines for the transparency framework for action and support referred to in Article 13 of the Paris Agreement, set out in the annex to decision 18/CMA.1
NC	National communication
NDC	Nationally determined contribution under Article 4 of the Paris Agreement
NDS	National Development Strategy
PaMs	Policies and measures
RES	Renewable energy sources

Introduction

Article 3 of the Paris Agreement requires Parties to undertake ambitious efforts as part of their NDCs towards achieving the purpose of the Agreement. As part of this, Parties are required to pursue domestic mitigation measures (Article 4, paragraph 2) and provide information necessary to track progress in implementing and achieving NDCs (Article 13, paragraph 7).

Parties to the Paris Agreement may implement mitigation policies and measures, actions and plans in any sector of their economy, focusing on those that have the most significant impact on GHG emissions or removals and those impacting key categories in the national GHG inventory.

This report outlines the narrative and tabular formats for reporting on the PaMs in Tajikistan's BTR. Information is prepared following the requirements outlined in paragraphs 80-90 of MPGs (section II.D of MPGs) and CTF table 5.

The information in the below chapter should be copied into Tajikistan's BTR.

Mitigation policies and measures, actions and plans, related to implementing and achieving Tajikistan's NDC

This chapter provides information on Tajikistan's policies and measures, actions and plans that are related to implementing and achieving Tajikistan's NDC. Information in tabular format is also provided in CTF table 5. Information has been prepared according to the reporting provisions outlined in paragraphs 80-90 of MPGs (section II.D of MPGs) and includes all mandatory requirements. Regarding the non-mandatory reporting requirements for reporting on PaMs, this information is provided to the extent available.

In accordance with paragraph 6 of MPGs, Tajikistan would like to use flexibility in relation to the paragraph 85 of MPGs which requires that each Party provides, to the extent possible, estimates of expected and achieved GHG emission reductions for its actions, policies and measures. Information is not therefore provided also for paragraph 86 of MPGs, which requires the Parties to describe the methodologies and assumptions used to estimate the GHG emission reductions or removals due to each action, policy and measure, to the extent available. As flexibility is applied to the reporting of the estimates of the GHG emission reductions or removals, the methodologies are also unavailable.

According to paragraph 6 of MPGs, the developing country Party shall concisely clarify capacity constraints in relation to the flexibilities used and provide self-determined estimated time frames for improvements in relation to those capacity constraints.

The capacity constraints, preventing Tajikistan to report of paragraph 85 (and consequently paragraph 86) are outlined below:

- Lack of the permanent MRV framework enabling the establishment and tracking of the goals and progress indicators for the PaMs in various sectors that would enable to calculate expected and achieved GHG emission reductions;
- Lack of technical capacity to develop and implement methodologies and guidelines for assessing the impacts of PaMs in various sectors;

These capacity constraints are expected to be eliminated by 2030 through the technical support provided by international partners.

The major national strategy that paves the path for Tajikistan's development until 2030 is the National Development Strategy of the Republic of Tajikistan for the period up to 2030 (hereinafter referred to as the NDS-2030), adopted in 2016. It defines general directions for economic development of the country, and, among others, includes measures to reduce the impact of climate change. These are primarily in the following three directions: 1) the use of non-traditional (renewable) energy sources; 2) minimization of the negative impact of transport on the environment and human health; 3) support for employment in the "green" sector, expansion of environmental entrepreneurship and the market for environmental services with the support of the state. NDS-2030 in the energy section defines the main indicators - 10/10/10/10-500, which means an increase in installed generation capacity to 10 GW, a reduction in technical and commercial losses in networks to 10%, an increase in electricity exports to 10 billion kWh per year, diversification of generation sources by 10% and an additional savings of more than 500 million kWh per year due to the use of energy-efficient technologies.

The NDS-2030 is being implemented through the Medium-Term Development Programs (hereinafter referred to as the MDPs). The first MDP covered the period of 2016-2020 (MDP 2016-2020). MDP 2021-2025 was adopted in 2021 to ensure the implementation of the second stage of NDS-2030. These contain specific mitigation actions that are described further down in this document. In addition, Tajikistan has adopted several sectoral actions plans and regulations, that include mitigation actions and serve as the basis of the actions described in this chapter. These include the 2015 Law on the Use of Renewable Energy Sources, the Program on renewable energy sources 2023-2027, Electric Transport Development Program in the Republic of Tajikistan for 2023-2028, State Target Program for the Development of the Transport Complex of the Republic of Tajikistan 2009-2025, Comprehensive program for the development of animal husbandry in the Republic of Tajikistan for the period 2018-2022, Forestry sector program for 2022-2026, Pasture Development Program for 2016-2020 and for 2022-2026. Green City Action Plan of Dushanbe (GCAP) serves as a basis for reporting on mitigation actions implemented at municipal level, in the capital city of Tajikistan, Dushanbe.

The reported actions have impacts on significant key categories from Tajikistan's GHG emissions inventory both with level and trend assessment, such as enteric fermentation, energy industries, road transport, and forestland, and as such, they have a potential to modify longer-term trends in GHG emissions and removals. The actions that have the highest potential to modify these trends are related to introduction of the renewable energy sources coupled with electricity storage facilities as well as actions on the electrification of road transport. The actions in forestry also have long-term impacts as they provide for long term storage of carbon in biomass.

Energy (not including transport)

Measure #1. Supporting the development and use of non-traditional (renewable) energy sources

Description: The 2015 Law on the Use of Renewable Energy Sources establishes the principles and objectives of state policy in the field of RES development, defines the ways of integrating renewable energy into the national energy system; regulates activities aimed at expanding the use of renewable energy; and defines economic and organizational measures aimed at stimulating the production and use of RES. The law defines some practical measures for the organization of legal, financial, scientific and technical support, as prescribed in its provisions. The government has been implementing several programs and relaxing legislative and bureaucratic requirements for investors and has introduced green tariffs for small HPPs and purchase obligations for the state-owned utility Barqi Tojik. This has resulted in a surge in small HPP construction, with capacity reaching more than 130 MW (exceeding the projected level) by 2022. While demand for small HPPs continues, negligible progress has been made in developing solar and wind energy.

The latest program on renewable energy sources 2023-2027 envisions to increase the production capacity of the country's energy system by 32.2 MW due to the use of energy resources from renewable energy sources (water, sun and wind); These include 11 small hydroelectric power plants with a capacity of 0.760 MW in remote and

highland villages of the Gorno-Badakhshan Autonomous Region; - solar power plants with a capacity of 14.374 MW; and wind power plants with a capacity of 3.084 MW. In addition, 2.511 MW of electricity storage equipment will be installed in remote villages, which will increase the efficiency of solar and wind power plants; Other actions include preparation of feasibility studies and working projects; training of local specialists; establishment of production of equipment, main and spare parts for small power plants; establishment of laboratory; and promotion of the efficient use of electricity.

Costs: The total amount for the implementation of the Program on renewable energy sources 2023-2027 is set at 1 billion 4 million 174 thousand Somoni, which will be implemented through domestic and foreign investments and state budget funds annually allocated to the Ministry of Energy and Water Resources of the Republic of Tajikistan and the National Academy of Sciences of Tajikistan. The main sources of financing for the Program include: - funds from development partners - 1 billion 574 thousand somoni; - budget funds - 3.6 million somoni. The European Union, the World Bank, the Federal Government of Germany, the United States Agency for International Development, the Government of Switzerland, the Asian Development Bank and other donors are currently participating in the implementation of projects and the presentation of grants.

Non-GHG mitigation benefits: It is expected that the program will be improving the energy security of the country and assisting in reducing the dependence of the country's energy system on the operation of large hydroelectric power plants. In addition, it will improve the quality of electricity and heat supply in remote, high-mountain villages and areas vulnerable to reliable centralized electricity supply; and support innovative technological development and capacity building.

Interaction with other PaMs: The implementation of this measure will have impacts on other measures which are related to either reduction or the increase of the use of electricity, since this measure changes the electricity mix.

The assessment of economic and social impacts of a response measure: Due to the commissioning of new production capacities from renewable energy sources in more than 35 remote villages, consumers and objects of the economic and social sectors will be provided with a constant supply of electricity; 2,401 households in remote areas will be provided with electricity for the first time; It is expected that the action will be improving the social status of the population of remote and high-mountain villages, developing important sectors of the economy of remote and high-mountain areas, developing tourism in remote and high-mountain regions, increasing the contribution of remote areas to the country's food security through the creation of small and medium-sized manufacturing enterprises in these areas, creating new jobs, and improving the standard of living of the population in remote and high-mountain areas;

Measure #2. Modernization and expansion of district heating network and infrastructure In Dushanbe

Description: According to the GCAP of Dushanbe, the district heating system in Dushanbe is in poor condition due to lack of investment and insufficient maintenance and operates significantly below its design capacity. Estimates suggest that heat losses within distribution and transmission network range between 20% to 30% as a consequence of leakages and poor insulation layer, and that around 90% of the transmission and distribution network needs replacement or repair. Many residents have dismantled building-internal heating infrastructure (radiators and pipes) and rely on individual heating systems (electric heaters and solid fuel fired stoves) which drives up energy consumption, pollution and carbon emissions. At present, only 1,073 houses/multistore buildings, 104 schools and hospitals and 137 enterprises and organisations are connected to the network. Most of the heat comes from two combined heat and power (CHP) plants – CHP1 (designed to run on gas, dual-fired by gas and mazut) and CHP2 (operational from 2016 and designed to be fired by highly carbon intensive coal with limited retrofitting options, with a 50-year lifespan). In addition, Dushanbe has more than 20 operational small boiler houses which supply public buildings, including hospitals, kindergartens, and schools, and are predominantly based on coal. With most boilers originally designed to be gas-fired but later converted to coal due to unavailability and high price of natural gas, the efficiency of these boilers decreased substantially.

Dushanbe GCAP includes actions to modernise and expand its district heating supply network, substations and related infrastructure (building-level metering, to be expanded to individual apartment-level smart metering in the medium-term) to scale up service provision, reduce reliance on individual heating systems and improve supply reliability. It shall also enable the reduction of the network's operating temperature to enable it to more easily integrate lower temperature waste heat and renewable sources. For 20 small boiler houses Dushanbe will explore viable alternative heating solutions, as a replacement (in whole or in part) of the existing coal-based systems. Options may include local gas boilers, photovoltaic (PV) or other solar, thermal or heat pumps. May also include connection to district energy system.

Dushanbe's climate also provides opportunity to harness solar thermal systems and ground-source heat pumps that could be connected to the existing and expanding district heating network, particularly for larger site re-/development projects. This action has already commenced in 2020, with EBRD's feasibility study for district heating in Dushanbe to lay the foundation for a project to rehabilitate and expand the district heating network, rehabilitate pumping stations, introduce metering at pumping stations, and improve overall capacity and management of the district heating systems. The corresponding investment loan has been signed in 2021.

Costs: Implementation of Modernization and expansion of district heating network is assessed as 9,346,000 EUR (incl. technical assistance costs)**.** The phasing out of coal in 20 boiler houses is estimated to cost 25 mln EUR. EBRD has committed in financing package of up to US$10 million, consisting of a US$ 5 million sovereign loan and a US$ 5 million grant, will be provided to the District Heating Company of Dushanbe. The package will be used to rehabilitate and extend the existing district heating network and to rehabilitate pumping stations.

Non-GHG mitigation benefits: The action has a potential to reduce the emissions of local pollutants. Upgrading and rehabilitating district heating system in Dushanbe, including transmission and distribution networks, will improve the system's ability to cope with increasing demand, heat stress, and extreme weather hazards.

Interaction with other PaMs: No direct interaction.

The assessment of economic and social impacts of response measure:

Reduced use of coal will have positive air-quality implications with social health impacts on asthma and other respiratory illnesses. If coal remains, even if made more efficient and with modern flue gas cleaning system, coal-fired boiler houses will continue to produce GHG emissions and contributing to local air-pollution in the city. Shift to other energy sources with the aim to increase tariffs to commercially sustainable levels may result in low-income users not being able to afford regular energy supply. Scale of investments needed to phase out coal and green and resilience-proof energy system could be prohibitively high and not feasible without grant support from international climate finance. More efficient management of the system will reduce operation and maintenance costs. Given the scale of the investment, it can be estimated that 50 jobs may be created through the construction activities, while 20 new jobs may be created in combination with the operation and maintenance needs of the increased network.

Measure #3. Modernization of electric grid

Description: The National Development Strategy (NDS) of the Republic of Tajikistan for the period up to 2030 sets the target to modernize the electric grid in order to reduce losses, improve the reliability of power supply and the support the increased use of various renewable energy sources; The aim of the action is to reduce power losses (both technical and economic) to 10% in the country by 2030. As part of MDP 2016-2020, a project to reduce energy losses in the Sughd region was implemented, as a result of which electricity losses in the Khujand city networks decreased from 24% to 9.5%. In order to improve the financial position and management system of the company "Barki Tojik", as well as to increase the transparency of its activities, the Government of the Republic of Tajikistan carried out its restructuring, separating the production, transmission, distribution of electricity in the form of closed joint-stock companies and creating energy market operators. The MDP 2021-2025 introduces additional actions to further reduce losses, which include the implementation of the project of wholesale electricity metering (installation of modern smart meters at all power plants and substations) and implementation of the billing system

project in Dushanbe, Penjikent, Istaravshan, Isfara, Kanibadam, Buston, Dangara, Kulyab and Bokhtar.

Costs: Not available.

Non_GHG mitigation benefits: Reduced need for electricity generation and or import.

Interaction with other PaMs: No direct interaction, however the action creates a possibility to use the saved electricity for electrification of other sectors.

The assessment of economic and social impacts of response measure: Not Available

Measure #4. Modernise and expand energy-efficient city-wide street lighting in Dushanbe

Description: Street lighting in Dushanbe consumes more than 35,000 kWh of electricity per day, with many municipal street lighting systems relying on inefficient lamps, resulting in high energy consumption and increased rate of GHG emissions. Dushanbe plans to substitute 2,377 old, inefficient lamps with LED lamps and introduce additional features including smart control and monitoring systems and retrofitting of selected lamp posts to integrate EV charging points. The system will also be designed to enable dimming of lamps late at night for further energy saving.

Costs: 2,422,500 EUR**.** The cost of retrofitting streetlamps to integrate EV charging points should be added based on the number of lamps. The cost of adding other smart features to the streetlights has not been included in this initial cost.

Non-GHG mitigation benefits: LED lamps will have longer lifespans reducing future maintenance costs and the risk and disposal costs associated with harmful waste streams from the disposal of low-pressure sodium lamps and mercury halide lamps. LED lamps will improve visibility and safety for street users compared with existing systems and will be designed to reduce light pollution. In addition, streetlamps that integrate sockets for EV charging will save costs on establishing separate charging points and connecting them to the power grid.

Interaction with other PaMs: Reduced need for electricity generation and or import, or alternatively, saved electricity can be used for other purposes, for example for charging infrastructure of electric vehicles.

The assessment of economic and social impacts of response measure: Improves safety and security; contributes to social equity as it allows vulnerable people to use pedestrian and bicycling infrastructure longer and more safely; given the scale of the rollout of LED lighting, an estimate 5 new jobs (primarily focused on the installation activities) may be created through this action.

Measure #5. Ban on the import, manufacturing and sale of inefficient light bulbs

Description: The Government decree No.264 was adopted in 2022 that prohibited import, manufacturing and sale of mercury lamps with code 8539322001 of the Commodity Nomenclature of Foreign Economic Activity of the Republic of Tajikistan in the Republic of Tajikistan from June 1, 2022. The Ministry of Industry and New Technologies of the Republic of Tajikistan, the Committee for Environmental Protection under the Government of the Republic of Tajikistan, together with the Customs Service under the Government of the Republic of Tajikistan, shall ensure control over the implementation of this resolution. The ban on import of incandescent bulbs has been introduced in 2009.

Costs: Not Available.

Non-GHG mitigation benefits: Not Available.

Interaction with other PaMs: Reduced need for electricity generation and or import, or alternatively, saved electricity can be used for other purposes, for example for charging infrastructure of electric vehicles.

The assessment of economic and social impacts of response measure: Not Available

Transport

Measure #6. Support to E-mobility (electric taxi fleet and charging stations in Dushanbe)

Description: Electric Transport Development Program in the Republic of Tajikistan for 2023-2028 supports the creation of charging and maintenance points for electric vehicles and defines a set of measures to stimulate the development of electric vehicles; It also includes activities for creation of favourable conditions for the disposal of electric vehicle batteries; and creation of conditions for the production of electric vehicles and their components.

As part of implementation of this program the Chairman of the City of Dushanbe issued a resolution in 2024, by which companies providing passenger transport services (taxi) in Dushanbe are instructed to take measures within the established quotas to fully switch to the electric transport system by September 1, 2025.

In accordance with this Resolution, the Transport Department of the Office of the Chairman of the City of Dushanbe, in cooperation with the state municipal institution "Dushanbe Transportnik", the Department of the State Automobile Inspection of the Department of the Ministry of Internal Affairs of the Republic of Tajikistan in the city of Dushanbe and the Department of the State Service for Supervision and Regulation of Transport in the city of Dushanbe, are instructed to facilitate the complete transition of rental taxi companies to the electric transport system.

Shifting to electric taxis in the city of Dushanbe started in 2021 facilitated by the Electric Transport Development Program and initiatives from private sector and donor support. Currently, there are 12 taxi rental companies in Dushanbe, for which 4,350 quotas have been determined. As of June 6, 2024, out of 4,350 vehicles, 2,451 are electric vehicles. 1,914 vehicles with an internal combustion engine are yellow. The proportion of electric vehicles is therefore 56.3 percent. On July 15, 2024 BAIC, a well-established Chinese automotive brand, announced the the delivery of the first batch of 1,000 brand-new BAIC EU5 vehicles to Dushanbe, Tajikistan, where they will serve as taxis for local residents.

Dushanbe GCAP also includes actions to Implement a fleet renewal and EV charging infrastructure programme for urban transport and e-mobility. To support this shift, the city has established 136 charging stations for electric vehicles by June 6, 2024.

Costs: For the implementation of the Electric Transport Development Program in the Republic of Tajikistan for 2023-2028, funds from the state budget, internal and external investments and other sources of financing not prohibited by the legislation of the Republic of Tajikistan are allocated. Financing of the Program is carried out in the amount of 1,390,000 Somoni from budgetary funds, 6,156,000 Somoni from development partners and 221,370,000 Somoni from the private sector.

Non_GHG mitigation benefits: reduction of emissions of local pollutants.

Interaction with other PaMs: The measure creates the need for increased electricity use, which should predominantly come from renewable energy sources or from other energy efficiency measures.

The assessment of economic and social impacts of response measure: Not Available

Measure #7. Development of electric public transport (trolleybuses)

Description: State Target Program for the Development of the Transport Complex of the Republic of Tajikistan 2010-2025 incudes a set of measures to ensure the dynamic development of the transport complex of the Republic of Tajikistan, capable of satisfying the needs of residents of the Republic of Tajikistan for transport services. The program includes several actions that are aimed at the development of trolley bus public transport is several regions

of the country, including Kurgan-Tube, Sarband, Kulyab, Vakhtad, Tursunzade, Gisar district and vil. Somoni in Rudaki district. Statistical publication on environmental protection of the Republic of Tajikistan by the Statistics agency shows that the share of passesnger trunover by trolley-buses has increased from 0.5% in 2003 to 0.7% in 2022 in totall passenger trunover (in terms of passenger-kms).

Costs: 35.5 mln USD, among them 26.6 mln USD from own resources and the remaining from international partners.

Non_GHG mitigation benefits: improving the availability of public transport in different cities; reduction of air polutants.

Interaction with other PaMs: The measure creates the need for increased electricity use, which should predominantly come from renewable energy sources or from other energy efficiency measures.

The assessment of economic and social impacts of response measure: Not Available

IPPU

Measure #8. Implementation of Kigali Amendment

Description: In 2022 the Republic of Tajikistan ratified the Kigali Amendment and phase down HFC refrigerants. With the ratification of the Kigali Amendment, as group II party, it committed to peak HFCs consumption by 2024 and to gradually phase down in line with the following schedule:

(i) 2024 to 2028: 100 per cent

(ii) 2029 to 2034: 90 per cent

(iii) 2035 to 2039: 70 per cent

(iv) 2040 to 2044: 50 per cent

(v) 2045 and thereafter: 20 per cent

In 2023 the Government of the Republic of Tajikistan adopted the Resolution On additional measures to implement the Vienna Convention for the Protection of the Ozone Layer and the Kigali Amendment to the Montreal Protocol on Substances that Deplete the Ozone Layer, which approved the procedure for import and export of hydrofluorocarbons specified in groups I and II of list F of the Montreal Protocol, to / from the Republic of Tajikistan; Approve a single list of hydrofluorocarbons specified in groups I and II of list F of the Montreal Protocol, to which restrictions on import and export to / from the Republic of Tajikistan apply and established quotas for the import of hydrofluorocarbons into the Republic of Tajikistan for 2023-2024.

Costs: Not available

Non-GHG mitigation benefits: Not available

Interaction with other PaMs: No interaction.

The assessment of economic and social impacts of response measure: Not Available

Agriculture

Measure #9. Increasing the number of highly productive livestock

Description: Comprehensive program for the development of animal husbandry in the Republic of Tajikistan for the period 2018-2022 included actions for the selection and breeding work of highly productive livestock. As a result of this program, in the period 2018-2021, 20 heads of Swiss-zebu and Kazakh white-headed bulls, 180 heads of fine-

wool sheep and 3,000 doses of sperm from highly productive breeding bulls were purchased and imported from abroad at the expense of budgetary funds to improve animal breeds. Currently, there are 297 artificial insemination points within the republic, up to 40-42 thousand heads of cows are artificially inseminated annually and 33-35 thousand heads of high-breed offspring are obtained.

In order to develop the breeding industry and increase the number of purebred cattle, with the support of the Government of the Republic of Tajikistan, since August 2019, the import of purebred cattle has been exempt from value added tax and customs duties. Using this benefit, the import of purebred cattle has increased every year, and in 2021, 11,146 heads of cattle and 1,015 heads of small purebred cattle were imported. Also in 2022, 1,473 heads of cattle and 207 heads of small purebred cattle were imported, where the import of breeding cattle increased by 1.5-2.0 times compared to 2018. In recent years, due to the import of breeding cattle from abroad, several new livestock farms have been created in the republic. One of the largest of these is the Marmari livestock complex in the Yavan district of the Khatlon region, which has the potential to raise 3,500 heads of beef cattle. In the future, the activities of this complex will help provide the population with meat and meat products.

Costs: The program was financed from the state budget in the amount of 12,137 thousand somoni (from which 3,035 thousand Somoni was allocated for cattle, sheep and goat breeding). Additionally, the program was to attract foreign and domestic investments, grants from international organizations in the amount of 14150 thousand somoni (among them 450 thousand Somoni for cattle, sheep and goat breeding). Financing of the Program from private sector was estimated to be 16,231 thousand Somoni (including 3,571 thousand somoni for cattle, sheep and goat breeding)

Non-GHG mitigation benefits: Not Available.

Interaction with other PaMs: No interaction**.**

The assessment of economic and social impacts of response measure: Not Available

LULUCF

Measure #10. Afforestation/reforestation activities and development of forest plantations

Description: Forestry sector program for 2022-2026 includes actions, among others, to plant new forests in the amount of 1 thousand hectares per year; restore degraded forests (sowing, planting, measures to protect and guard the forest) in the amount of at least 2 thousand hectares per year; Assistance in natural regeneration, enhanced protection and measures to protect degraded forests in the amount of at least 8 thousand hectares per year; Care, creation and restoration of forests within 5 years (32,400 hectares); Creation of "green zones" around the city of Dushanbe, in points and along the central highways in accordance with the protocol instruction of the Government of the Republic of Tajikistan; Creation of forest industrial plantations on an area of 1,240 hectares. It also includes other supporting actions, such as establishment of the state forest inspection at the local level and ensuring its functioning (material and technical base, clearly developed functional responsibilities); Pest control, tree diseases and prevention of forest fires; Analysis of the condition of forests located on the lands of other forest users; Growing fruit and forest seedlings, and others.

Costs: The total cost of the program is 135 mln Somoni. Sustainable management and use of forests for the benefit of the state, society and future generations is possible only with the creation of a sustainable system of financing the forest sector. Financing of the Program is carried out at the expense of the state budget, special funds, and other sources not prohibited by the legislation of the Republic of Tajikistan. Financing of the Program will also be carried out at the expense of own income of forestry enterprises, including special funds, received mainly from the sale of forest products and ecosystem services.

Non_GHG mitigation benefits: conservation of forest biodiversity, restoration and conservation of forests, increase in their area and productivity; improvement of the quality and quantity of ecosystem services provided in the context of climate change; increased participation of civil society, in particular women, in forest policy issues at the national and local levels; strengthening the role of forests in the implementation of international commitments and

global programs for sustainable forest development, mitigation of climate change and adaptation to them.

Interaction with other PaMs: No interaction.

The assessment of economic and social impacts of response measure: promotion of economic development by attracting entrepreneurs to the forest sector and increasing the efficiency of forest management; improvement of the well-being of local populations by involving them in forest management and providing forest products based on sustainable forest use.

Measure #11. Protection of pastures

Description: In recent years, most of the republic's pastures have been severely degraded and eroded. Especially pastures near populated areas are currently in such a state, and some of these territories have been transformed into deserts. Failure to prevent this difficult situation may lead to possible irreversible and dangerous consequences. In the territory of the republic, out of 4.7 million hectares of agricultural land, 3.8 million hectares or 83 percent are pasture lands. Pastures in the republic are the main source of feed for beef cattle, yaks, sheep, goats and horses and make up more than 60-70 percent of their annual needs. Under current conditions, the productivity of spring, autumn and winter pasture grasses is decreasing and is only 1.5-2.0 centners. Due to the shortage of pasture grasses in the winter, from 10-15 to 25 percent of the live weight of small cattle is lost. At the same time, water supply facilities on most pastures in the republic have become unusable. Also, due to the lack of roads, cattle bridges, lack of water and cattle pens, about a million hectares of pastures are partially used, and some areas remain completely unused. As a result of mudflows, hail, fires and other natural and anthropogenic factors, thousands of hectares of pastures degrade and are subject to erosion every year.

The 2013 Law on Pastures defines the basic principles of pasture use, including the protection of pastures and the environment, as well as the attraction of investments for more effective use and protection of pastures. The law defines the authority of local administrations to control the environmental safety and use of pastures in accordance with state regulations and standards. The law prohibits a number of activities in pastures, such as cutting down trees or bushes, road construction, misuse of pasture land, pollution with waste, and grazing livestock in excess of the established norm. The law requires users to ensure effective use of pastures, including the protection of pastures from degradation and pollution.

The Pasture Development Program for 2016-2020 (was adopted following the Program for Improvement and Rational Use of Pastures for 2009-2015. The 2009-2015 program included activities such as clearing pasture areas of rocks and shrubs; purchasing grass seed; using machinery and equipment to conduct seeding operations; purchasing fuel and lubricants; guarding pasture areas; and building bridges and repairing roads to use pastures not previously used. The program for 2016-2020 additionally provided for the improvement of pastures by root and surface treatment methods. Due to the adopted programs in the regions, cities and districts of the republic in 2009-2022, the condition of 3,265 hectares of pastures was improved by indigenous and surface methods, 9 cattle-driving bridges and 40 km of cattle-driving routes were repaired.

The Pasture Development Program in the Republic of Tajikistan for 2023-2027 aims to further develop and improve the condition of pastures in the Republic of Tajikistan. The main goals of the Program are to increase the reserves of natural pasture vegetation using modern technologies by sowing seeds of natural pasture vegetation, nutritional value and increasing productivity up to 15-20 percent. The actions include the creation of commissions for regulating the use of pastures in regions, cities and districts; selection and preparation of land for sowing seeds of natural vegetation; improvement of the condition of pastures by indigenous and surface methods, as well as their protection from erosion; greater involvement of the rural population in the effective use of pastures; creation of pasture user societies at the level of settlements and villages; road repair and construction of cattle-driving bridges; construction and major repairs of structures for disinfection of cattle hooves; conducting an inventory of pastures; conducting geobotanical studies of pastures; protection of the area of sown pastures; development and approval of a new project of the route along cattle-driving routes, cattle pens and distribution of seasonal pastures; import

and production of seeds of natural pasture vegetation; intensification of research work on improving the condition of pastures and creating demonstration sites and producing seeds of pasture natural grasses; taking specific measures to provide farms and the private sector with seeds of natural vegetation; and others

Forestry sector program for 2022-2026 includes actions, among others, increasing the productivity of pastures on an area of 12,000 hectares.

Costs: For the implementation of the Pasture Development Program in the Republic of Tajikistan for 2023-2027, 3,245,000 somoni have been allocated from budget funds. 21. For the implementation of this Program, 24,791,800 somoni have been allocated from domestic and foreign investments and grants.

Non-GHG mitigation benefits: Not Available.

Interaction with other PaMs: No interaction

The assessment of economic and social impacts of response measure: Not Available.

CTF Table 5

CTF Table 5. Mitigation policies and measures, actions and plans, including those with mitigation co-benefits resulting from adaptation actions and economic diversification plans, related to implementing and achieving a nationally determined contribution under Article 4 of the Paris Agreement

Name [c]	***Description*** [d,e,f]	***Objectives***	***Type of instrument*** [g]	***Status*** [h]	***Sector(s) affected*** [i]	***Gases affected***	***Start year of implementation***	***Implementing entity or entities***	***Estimates of GHG emission reductions (kt CO2 eq)*** [j,k]	
									Achieved	***Expected***
Supporting the development and use of non-traditional (renewable) energy sources;	The 2015 Law on the Use of Renewable Energy Sources establishes the principles and objectives of state policy in the field of RES development, defines the ways of integrating renewable energy into the national energy system; regulates activities aimed at expanding the use of renewable energy; and defines economic and organizational measures aimed at stimulating the production and use of RES. The latest program on renewable energy sources 2023-2027 envisions to increase the production capacity of the country's energy system by 32.2 MW due to the use of energy resources from renewable energy sources (water, sun and wind); These include 11 small hydroelectric power plants with a capacity of 0.760 MW in remote and highland villages of the Gorno-Badakhshan Autonomous Region; - solar power plants with a capacity of 14.374 MW; and wind power plants with a capacity of 3.084 MW. In addition, 2.511 MW of electricity storage equipment will be installed in remote villages, which will increase the efficiency of solar and wind power plants; Other actions include preparation of feasibility studies and working projects; training of local specialists; establishment of production of equipment, main and spare parts for small power plants; establishment of laboratory; and promotion of the efficient use of electricity.	Increase the share of renewable energy sources in electricity generation and demand sectors	Regulatory, economic	Adopted	Energy	CO2	2015	The Ministry of Energy and Water Resources (MEWR) is responsible for policies on energy, RES and energy efficiency;	FX	FX

Modernization and expansion of district heating network and infrastructure In Dushanbe	Through this action Dushanbe will modernize and expand its district heating supply network, substations and related infrastructure (building-level metering, to be expanded to individual apartment-level smart metering in the medium-term) to scale up service provision, reduce reliance on individual heating systems and improve supply reliability. It shall also enable the reduction of the network's operating temperature to enable it to more easily integrate lower temperature waste heat and renewable sources. For 20 small boiler houses Dushanbe will explore viable alternative heating solutions, as a replacement (in whole or in part) of the existing coal-based systems. Options may include local gas boilers, photovoltaic (PV) or other solar, thermal or heat pumps.	Phase out coal in more than 20 coal-fired boiler houses; Modernize, climate-prove, and expand district heating network and infrastructure.	Other (direct investment), economic	Adopted	Energy	CO2	2022	Dushanbe municipality, District Heating Company of Dushanbe	FX	FX
Modernization of electric grid	The National Development Strategy (NDS) of the Republic of Tajikistan for the period up to 2030 sets the target to modernize the electric grid in order to reduce losses, improve the reliability of power supply and the support the increased use of various renewable energy sources; The aim of the action is to reduce power losses (both technical and economic) to 10% in the country by 2030. The Medium-term development program of Tajikistan for 2021-2025 introduces specific actions to reach these objectives, which include the implementation of the project of wholesale electricity metering (installation of modern smart meters at all power plants and substations) and implementation of the billing system project in Dushanbe, Penjikent, Istaravshan, Isfara, Kanibadam, Buston, Dangara, Kulyab and Bokhtar.	Reduce electricity losses reduced to 10% by 2030 in the country.	Other (direct investment), economic	Adopted	Energy	CO2	2021	OJSC "Barki Tojik"	FX	FX
Modernize and expand energy-efficient city-wide street lighting in Dushanbe	Dushanbe plans to substitute 2,377 old, inefficient lamps with LED lamps and introduce additional features including smart control and monitoring systems and retrofitting of selected lamp posts to integrate EV charging points. The system will also be designed to enable dimming of lamps late at night for further energy saving.	Substitute old, inefficient lamps with LED lamps for street lighting in Dushanbe	Other (direct investment)	Adopted	Energy	CO2	2021	SUE "Dushanbe for City Lighting" supported by the Department of Energy and Industry in Dushanbe city administration	FX	FX

Ban on the import, manufacturing and sale of inefficient light bulbs	The Government decree No.264 was adopted in 2022 that prohibited import, manufacturing and sale of mercury lamps with code 8539322001 of the Commodity Nomenclature of Foreign Economic Activity of the Republic of Tajikistan in the Republic of Tajikistan from June 1, 2022. The ban on import of incandescent bulbs has been introduced in 2009.	Abolition of the use of inefficient bulbs for lighting	Regulatory	Implemented	Energy	CO2	2022	The Ministry of Industry and New Technologies, the Committee for Environmental Protection under the Government of the Republic of Tajikistan, and the Customs Service	FX	FX
Support to E-mobility (electric taxi fleet and charging stations)	Electric Transport Development Program in the Republic of Tajikistan for 2023-2028 supports the creation of charging and maintenance points for electric vehicles and defines a set of measures to stimulate the development of electric vehicles; It also includes activities for creation of favorable conditions for the disposal of electric vehicle batteries; and creation of conditions for the production of electric vehicles and their components. As part of implementation of this program the Chairman of the City of Dushanbe issued a resolution in 2024, by which companies providing passenger transport services (taxi) in Dushanbe are instructed to take measures within the established quotas to fully switch to the electric transport system by September 1, 2025.	Increase the number of electric vehicles	Regulatory, economic	Adopted	Transport	CO2	2023	Ministry of Transport, Transport Department of the Office of the Chairman of the City of Dushanbe, state municipal institution "Dushanbe Transportnik", the Department of the State Automobile Inspection of the Department of the Ministry of Internal Affairs of the Republic of Tajikistan in the city of Dushanbe and the Department of the State	FX	FX

								Service for Supervision and Regulation of Transport in the city of Dushanbe.		
Development of electric pubic transport (trolleybuses)	State Target Program for the Development of the Transport Complex of the Republic of Tajikistan 2010-2025 incudes a set of measures to ensure the dynamic development of the transport complex of the Republic of Tajikistan, capable of satisfying the needs of residents of the Republic of Tajikistan for transport services. The program includes several actions that are aimed at the development of trolley bus public transport is several regions of the country, including Kurgan-Tube, Sarband, Kulyab, Vakhtad, Tursunzade, Gisar district and vil. Somoni in Rudaki district. Statistical publication on environmental protection of the Republic of Tajikistan by the Statistics agency shows that the share of passenger turnover by trolley-buses has increased from 0.5% in 2003 to 0.7% in 2022 in total passenger turnover (in terms of passenger-kms).	Develop public transport using trolley buses in several municipalities.	Other (investment)	Adopted	Transport	CO2	2010	Ministry of Transport and municipal governments	FX	FX

Implementation of Kigali Amendment	In 2022 the Republic of Tajikistan ratified the Kigali Amendment and phase down HFC refrigerants. With the ratification of the Kigali Amendment, as group II party, it committed to peak HFCs consumption by 2024 and to gradually phase down in line with the following schedule: (i) 2024 to 2028: 100 per cent; (ii) 2029 to 2034: 90 per cent; (iii) 2035 to 2039: 70 per cent; (iv) 2040 to 2044: 50 per cent; (v) 2045 and thereafter: 20 per cent. In 2023 the Government of the Republic of Tajikistan adopted the Resolution On additional measures to implement the Vienna Convention for the Protection of the Ozone Layer and the Kigali Amendment to the Montreal Protocol on Substances that Deplete the Ozone Layer, which approved the procedure for import and export of hydrofluorocarbons specified in groups I and II of list F of the Montreal Protocol, to / from the Republic of Tajikistan; Approve a single list of hydrofluorocarbons specified in groups I and II of list F of the Montreal Protocol, to which restrictions on import and export to / from the Republic of Tajikistan apply and established quotas for the import of hydrofluorocarbons into the Republic of Tajikistan for 2023-2024.	Phase down HFCs	Regulatory	Adopted	IPPU	HFCs	2022	The Government of the Republic of Tajikistan; Customs department.	FX	FX

Increasing the number of highly productive livestock	Comprehensive program for the development of animal husbandry in the Republic of Tajikistan for the period 2018-2022 included actions for the selection and breeding work of highly productive livestock. As a result of this program, in the period 2018-2021, 20 heads of Swiss-zebu and Kazakh white-headed bulls, 180 heads of fine-wool sheep and 3,000 doses of sperm from highly productive breeding bulls were purchased and imported from abroad at the expense of budgetary funds to improve animal breeds. Currently, there are 297 artificial insemination points within the republic, up to 40-42 thousand heads of cows are artificially inseminated annually and 33-35 thousand heads of high-breed offspring are obtained. In order to develop the breeding industry and increase the number of purebred cattle, with the support of the Government of the Republic of Tajikistan, since August 2019, the import of purebred cattle has been exempt from value added tax and customs duties. Using this benefit, the import of purebred cattle has increased every year, and in 2021, 11,146 heads of cattle and 1,015 heads of small purebred cattle were imported. Also in 2022, 1,473 heads of cattle and 207 heads of small purebred cattle were imported, where the import of breeding cattle increased by 1.5-2.0 times compared to 2018. In recent years, due to the import of breeding cattle from abroad, several new livestock farms have been created in the republic. One of the largest of these is the Marmari livestock complex in the Yavan district of the Khatlon region, which has the potential to raise 3,500 heads of beef cattle.	Increase the productivity of livestock	Regulatory. Other	Implemented	Agriculture	CH4	2018	Ministry of Agriculture and municipal governments	FX	FX

Afforestation/reforestation activities and development of forest plantations	Forestry sector program for 2022-2026 includes actions, among others, to plamt new forests in the amount of 1 thousand hectares per year; restore degraded forests (sowing, planting, measures to protect and guard the forest) in the amount of at least 2 thousand hectares per year; Assistance in natural regeneration, enhanced protection and measures to protect degraded forests in the amount of at least 8 thousand hectares per year; Care, creation and restoration of forests within 5 years (32,400 hectares); Creation of "green zones" around the city of Dushanbe, in points and along the central highways in accordance with the protocol instruction of the Government of the Republic of Tajikistan; Creation of forest industrial plantations on an area of 1,240 hectares. It also includes other supporting actions, such as establishment of the state forest inspection at the local level and ensuring its functioning (material and technical base, clearly developed functional responsibilities); Pest control, tree diseases and prevention of forest fires; Analysis of the condition of forests located on the lands of other forest users; Growing fruit and forest seedlings, and others.	Creation and restoration of more than 15 thousand hectares of forests adapted to local conditions and climate change; doubling forest productivity; cessation of livestock grazing on 30 percent of forest areas;	Regulatory. Other	Adopted	LULUCF	CO2	2022	Forestry Agency under the Government of the Republic of Tajikistan, state forestry agency	FX	FX

Protection of pastures	The 2013 Law on Pastures defines the basic principles of pasture use, including the protection of pastures and the environment, as well as the attraction of investments for more effective use and protection of pastures. The Program for Improvement and Rational Use of Pastures for 2009-2015 included activities such as clearing pasture areas of rocks and shrubs; purchasing grass seed; using machinery and equipment to conduct seeding operations; purchasing fuel and lubricants; guarding pasture areas; and building bridges and repairing roads to use pastures not previously used. The Pasture Development Program for 2016-2020 additionally provided for the improvement of pastures by root and surface treatment methods. Due to the adopted programs in the regions, cities and districts of the republic in 2009-2022, the condition of 3,265 hectares of pastures was improved by indigenous and surface methods, 9 cattle-driving bridges and 40 km of cattle-driving routes were repaired. The Pasture Development Program in the Republic of Tajikistan for 2023-2027 aims to increase the reserves of natural pasture vegetation using modern technologies by sowing seeds of natural pasture vegetation, nutritional value and increasing productivity up to 15-20 percent. The actions include the selection and preparation of land for sowing seeds of natural vegetation; improvement of the condition of pastures by indigenous and surface methods, as well as their protection from erosion; protection of the area of sown pastures; import and production of seeds of natural pasture vegetation; and others.	to increase the reserves of natural pasture vegetation using modern technologies by sowing seeds of natural pasture vegetation, nutritional value and increasing productivity of pastures	Regulatory. Other	Adopted	LULUCF	CO2	2009	Ministry of Agriculture	FX	FX