ICAT Kyrgyzstan Project

Report on Deliverable 10

Ministry of Natural Resources, Ecology and Technical Supervision of the Kyrgyz Republic

Initiative for Climate Action Transparency

ICAT Initiative for Climate Action Transparency

Ministry of Natural Resources, Ecology and Technical Supervision of the Kyrgyz Republic

Initiative for Climate Action Transparency – ICAT

Diagnosis/Scoping report containing the scope in activity 1

Deliverable # 10

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Reports on NDC tracking indicators and data gaps for transport sector

1. Introduction

The objective of this report is to present an analysis of the current status of the monitoring system for the implementation of Nationally Determined Contributions (NDCs) in the transport sector of the Kyrgyz Republic, with a particular focus on the applied monitoring indicators and existing data gaps. The report aims to contribute to improving the monitoring of mitigation measures implemented in the transport sector and identifying priority areas for institutional and technical strengthening of the monitoring, reporting and verification (MRV) system.

The transport sector plays an important role in achieving Kyrgyzstan's climate goals. According to the national greenhouse gas inventory, the sector accounts for a significant portion of carbon dioxide emissions, primarily from road transport[1]. As part of the NDC, the Kyrgyz Republic commits to implementing measures to reduce GHG emissions, including modernization of the vehicle fleet, transition to environmentally friendly modes of transport, improvement of urban mobility, and introduction of energy-efficient solutions.

Effective monitoring of the implementation of these measures is impossible without reliable indicators and a sustainable system of data collection and analysis. However, there are significant gaps in current practice, both in terms of indicator coverage and data availability or quality. This report offers a structured review of existing indicators[2], their monitoring mechanisms and existing limitations, as well as recommendations for eliminating the identified barriers.

The report takes into account international approaches, including the recommendations of the Initiative for Climate Action Assessment (ICAT), as well as the experience of developing MRV systems in developing countries. Special attention is paid to the institutional structure and the potential for its development in the context of Kyrgyzstan.

2. The role of the transport sector in the implementation of NDCs

Share of greenhouse gas emissions from the transport sector at the national level

The transport sector is one of the key sources of greenhouse gas (GHG) emissions in the Kyrgyz Republic. According to the National GHG Emission Inventory (NEI-4), it accounts for up to 22–25% of total carbon dioxide emissions, with the vast majority of emissions coming from **road transport**. The main reasons are the old vehicle fleet, the dominance of vehicles with

[1]. First Biennial Update Report of the Kyrgyz Republic, 2016. Available at: https://unfccc.int/sites/default/files/resource/BUR.pdf (p. 105).
[2] 6.4. Progress: Comparison of Planned and Actual Values (2025)

internal combustion engines (ICE), low fuel quality, and the lack of systemic regulation of mobility in cities.

3. The importance of the transport sector for achieving NDC goals

Specific contribution of the transport sector to national GHG emissions

The transport sector plays an important role in the formation of anthropogenic greenhouse gas emissions in the Kyrgyz Republic. The bulk of emissions in transport is carbon dioxide (CO_2**)** formed during the combustion of gasoline and diesel fuel.

Main sources of emissions: 96% - road transport

According to national inventories and sector estimates, up to **96% of GHG emissions in the transport sector** are associated with road and other transport, including cars, trucks, buses and minibuses, and concrete mixers. Other types of transport (air, rail, water) together account for less than 4% of emissions.

The high level of emissions is explained by the following factors:

- the prevalence of cars with old-generation internal combustion engines;
- low level of vehicle fleet renewal;
- high share of private transport in transportation;
- limited development of public transport and sustainable mobility.

Thus, any mitigation measures should primarily focus on road transport as the main source of emissions.

Overview of mitigation goals and targets set in the NDCs

The Nationally Determined Contribution of the Kyrgyz Republic (NDC, 2021) includes a number of measures to reduce GHG emissions in the transport sector. These include:

1. **Replacement of passenger vehicles with internal combustion engines by electric vehicles**
   - Expected emission reduction:
      - 2025 — 54 thousand tons CO_2-eq.[3]

   This measure is intended to stimulate the import and use of electric vehicles in the private and, to some extent, commercial segments. Support is expressed in reducing the tax burden and creating a reserve for charging infrastructure.

2. **Improved traffic management and cycling infrastructure development**
   - Targeted emission reductions:

[3] Ministry of Natural Resources, Ecology and Technical Supervision of the Kyrgyz Republic. (2021). *NDC2 Implementation Plan.* Retrieved from https://mnr.gov.kg/ru/page/onuv

- 2025 — 103.7 thousand tons CO_2-eq.[4]
- 2030 — 232.5 thousand tons CO_2-eq.[5]

Measures include the introduction of intelligent transport systems (ITS), the construction of bicycle paths, the improvement of conditions for sustainable modes of transport, as well as the general optimization of traffic in cities.

3. **Replacement of ICE buses with CNG buses in Bishkek, Osh and suburbs**
   - Was assessed as significant in terms of local improvement of air quality and reduction of CO_2 emissions.

   - 2025 — 10.8 thousand tons CO_2-eq.[6]
   - 2030 — 21.7 thousand tons CO_2-eq.

4. **Development of bicycle infrastructure**
   — Promotion of active mobility, in particular the development of bicycle infrastructure, is considered as one of the mitigation measures within the framework of the Updated Nationally Determined Contribution (NDC) of the Kyrgyz Republic. Replacing short trips by private vehicles with cycling allows for a significant reduction in greenhouse gas emissions, especially in dense urban environments. In addition, such measures contribute to improving the health of the population, reducing noise pollution and the load on the road network.

   - 2025 — 103.7 thousand tons CO_2-eq.[7]
   - 2030 — 498.0 thousand tons CO_2-eq.

These and several other targets were ambitious and reflected the country's commitment to strengthening climate policy in the transport sector. However, subsequent analysis showed that implementing these measures faces a number of challenges, including a lack of funding, weak institutional coordination, and limited infrastructure.

SM and SDM scenarios: methodology for distributing measures

The NDC uses a two-scenario approach:

- **SM (own measures)** - includes actions that a country can implement using internal resources and national political will.

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[4] Ministry of Natural Resources, Ecology and Technical Supervision of the Kyrgyz Republic. (2021). *NDC2 Implementation Plan.* Retrieved from https://mnr.gov.kg/ru/page/onuv
[5] Ministry of Natural Resources, Ecology and Technical Supervision of the Kyrgyz Republic. (2021). *NDC2 Implementation Plan.* Retrieved from https://mnr.gov.kg/ru/page/onuv
[6] Ministry of Natural Resources, Ecology and Technical Supervision of the Kyrgyz Republic. (2021). *NDC2 Implementation Plan.* Retrieved from https://mnr.gov.kg/ru/page/onuv
[7] Ministry of Natural Resources, Ecology and Technical Supervision of the Kyrgyz Republic. (2021). *NDC2 Implementation Plan.* Retrieved from https://mnr.gov.kg/ru/page/onuv

- **SDM (with additional international support)** - covers measures requiring external funding, technology and transfer of experience.

The distribution of transport measures according to these scenarios is conditional:

- Measures such as improving the payment system in public transport, economic measures, and improving traffic management are attributed primarily to the SM scenario, as they are more realistic given the current level of resources.
- Mass electrification (gasification) of transport with the development of a charging network, mass construction of bicycle infrastructure and the organization of training in eco-driving and maintenance of vehicles are considered in **the SDM scenario** as dependent on external technical and financial support.

This approach allows for flexible policy formulation, taking into account national capabilities and the need for international cooperation.

4. Description of mitigation measures in the transport sector and their implementation. Development of indicators.

In the period from 2017 to 2025, a number of mitigation measures in the transport sector were initiated and partially implemented in the Kyrgyz Republic within the framework of climate goals and NDCs. These measures concern both technological improvements and institutional and behavioral changes. For each measure, a specific **progress tracking indicator is proposed**, reflecting quantitative changes and allowing for an assessment of the climate effect, including using the GACMO tool.

3.1. Electrification of transport

Measure: Replacement of passenger cars with internal combustion engines with electric vehicles. SDM,
Indicator: *Number of registered electric vehicles (EV)*

- **Initial expectations:** massive growth in imports and use of electric vehicles, creation of charging infrastructure.
- **Actual result:** the number of electric vehicles increased from 2017 to 2024, but the pace is significantly behind initial expectations. Charging infrastructure is developed in a spotty manner.
- **Problems:** high cost of EVs, lack of production capacity and services, limited public awareness.
- **Data:** as of 2025 - about 7 thousand EVs (including passenger and commercial vehicles), most of them in Bishkek and in the south in the city of Osh.
- **Climate effect (according to GACMO):** approximately 34.3 thousand tons of CO_2-eq by 2025. The expert estimated the effect at approximately 34.3 thousand tons of CO2-eq.

4.2. Traffic management

Measure: Implementation of intelligent traffic management systems (ATMS). SEE.
Indicator: *Number of intersections equipped with smart traffic lights*

- **Implementation:** A project to modernize traffic lights at key intersections was implemented in the city of Bishkek.
- **Result:** 21 intersections are equipped with an automated traffic control system.
- **Results:** optimisation of traffic flows, reduction of downtime and idling speeds → reduction of CO_2 emissions and local pollutants.
- **Limitations:** the project is not scalable beyond the capital.
- **Project expert assessment:** contribution to emission reduction of 19,44 thousand tons of CO_2-eq./year with current coverage. In 2021, in the absence of methods and other data, the emission reduction estimate was at the level of 103 thousand tons of CO2 [8]without a clear definition of the indicator.

4.3. Development of bicycle infrastructure

Measure: Creation and development of bicycle paths. SDM.
Indicator: *Number of kilometers of bike paths built*

- **Actual result:** from 2018 to 2025, about 50 km of bike paths were built in Bishkek.
- **Problems:** infrastructure is fragmented and often not integrated into the transport network.
- **Potential:** when expanding to 50 km, the climate effect **according to GACMO is possible:** over 27.6 thousand tons of CO_2-eq/year.
- **Assessment:** Current implementation of the level declared in the NDC requires a revision of the scale and approach. The plan envisaged a reduction in emissions of 103.7 thousand tons of CO2 eq./year [9].

4.4. Replacing public transport

Measure: Replacement of buses with internal combustion engines with gas engines (CNG). SDM.
Indicator: *Number of buses running on CNG*

- **Actual progress:**
    a) Bishkek: 1,34 new CNG buses and

[8]* Mitigation Strategies and Accounting Methods for Greenhouse Gas Emissions from Transportation. Inter-American Development Bank.https://publications.iadb.org/publications/english/document/Mitigation-Strategies-and-Accounting-Methods-for-Greenhouse-Gas-Emissions-from-Transportation.pdf .pp. 33-38

[9]* Mitigation Strategies and Accounting Methods for Greenhouse Gas Emissions from Transportation. Inter-American Development Bank.https://publications.iadb.org/publications/english/document/Mitigation-Strategies-and-Accounting-Methods-for-Greenhouse-Gas-Emissions-from-Transportation.pdf .pp. 33-38

b) Bishkek: 120 electric buses purchased and put into operation.

   The city of Jalal-Abad - 10 electric buses, the city of Naryn - 5 electric buses, the city of Osh - 23 trolleybuses: the number of new buses and trolleybuses fully allows us to close the plan for measures in the public transport sector, mainly within the framework of foreign-financed projects.

- **Effect:** improved air quality, reduction of local pollutants and CO_2.
- **Restrictions:** There are no restrictions yet.
- **Climate effect:** estimated at 18.0 thousand tons of CO_2-eq/year.

4.5. Implementation of electronic payment systems

Measure: Electronic validators in public transport. SEE
Indicator: *Number of validators installed in transport*

- **Facts:** The electronic system has been implemented on bus routes in Bishkek and Osh (including QR codes, smart cards).
- **Progress:** about 1460 validators.
- **Potential:** increased transparency of transportation, reduced downtime, control over vehicle loading.
- **Expert rating:** conditionally 5-10 thousand tons of CO_2-eq./year. Previously it was believed [10]that the reduction from this measure would be approximately 77.7 thousand tons of CO2-eq. Currently, new studies have appeared and there is a need to more carefully assess the potential.

4.6. Eco-driving

Measure: Training drivers in the basics of eco-driving. SDM.
Indicator: *Number of trained drivers*

- **Actual situation:** training was to be carried out within the framework of individual donor initiatives (e.g. UNDP).
- **Result:** about 0 drivers trained.
- **Problem:** No training or mandatory certification.
- **Potential:** depends on the scale of implementation, can reach up to 5 thousand tons of CO_2-eq./year if the entire country is covered instead of the expected [11]20.73 thousand tons

4.7. Vehicle fleet renewal (restrictions on old vehicles)

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[10]* Mitigation Strategies and Accounting Methods for Greenhouse Gas Emissions from Transportation. Inter-American Development Bank.https://publications.iadb.org/publications/english/document/Mitigation-Strategies-and-Accounting-Methods-for-Greenhouse-Gas-Emissions-from-Transportation.pdf .pp. 33-38

[11]* Mitigation Strategies and Accounting Methods for Greenhouse Gas Emissions from Transportation. Inter-American Development Bank.https://publications.iadb.org/publications/english/document/Mitigation-Strategies-and-Accounting-Methods-for-Greenhouse-Gas-Emissions-from-Transportation.pdf .pp. 33-38

Measure: Regulation of used car imports. SEE
Indicator: *The number of new cars imported to replace old ones*

- **Actual result:** since 2017, bans have been introduced on the import of vehicles older than 10 years and duties on cars with a volume of more than 3.0 liters.
- **Result:** the share of hybrid and relatively new cars has increased.
- **Calculations:** according to GACMO data, the actual reduction in emissions was **~ 17,54 thousand tons of CO_2-eq/year** instead of the expected 77.7 thousand tons - [12]a very rough estimate.
- **Reason for discrepancies:** inflated forecasts, lack of evaluation methodologies.

Conclusion to the section

Mitigation measures implemented in the period 2017–2025 demonstrated **progress at different levels**: from the successful replacement of diesel buses with electric buses and gas buses, to limited promotion of bicycle infrastructure and EVs. Tracking indicators have proven to be useful tools for assessing the degree of implementation of each measure and can be the basis for building a systemic MRV system. However, many measures need to be scaled up and institutionalized to move beyond isolated projects and move towards sustainable climate impact.

5. Tracking system and institutional mechanisms

Effective implementation of nationally determined contributions (NDCs) in the transport sector requires a functioning and sustainable monitoring, reporting and verification (MRV) system based on reliable data, clearly defined indicators and institutional coordination among stakeholders. To date, the system for tracking progress in implementing climate measures in transport **is developing fragmentarily** and is predominantly project-based.

5.1. Institutional organization of the process

Central authorities:

- **The Ministry of Natural Resources, Ecology and Technical Supervision (MNRES)** is the national coordinator of climate policy, including the preparation and submission of NDCs, national communications (NCs) and biennial update reports (BURs). It is responsible for methodology, data synthesis and interaction with international structures (UNFCCC).
- **The Ministry of Transport and Communications of the Kyrgyz Republic (MTCC)** is the body responsible for the implementation of transport policy, including the

[12]* Mitigation Strategies and Accounting Methods for Greenhouse Gas Emissions from Transportation. Inter-American Development Bank.https://publications.iadb.org/publications/english/document/Mitigation-Strategies-and-Accounting-Methods-for-Greenhouse-Gas-Emissions-from-Transportation.pdf .pp. 33-38

development of infrastructure, vehicle fleet, traffic management, sustainable mobility, mode shares and average trip lengths.
- **National Statistical Committee (NSC)** – maintains government statistics, including vehicle registration, import volumes and other key indicators.

Other participants:

- The mayor's offices of Bishkek, Osh and other large populated areas, which are responsible for public transport, automated traffic management systems, bicycle infrastructure and electronic systems.
- State Customs Service - provides data on the import of cars and other mobile equipment.
- Agency for the Registration of Vehicles and Drivers.
- Private and donor organizations are participants in individual initiatives.

5.2. Coordination and stability issues

Despite the presence of involved bodies, **there is no systemic vertical management of climate measures in transport**. The main problems include:

- **The absence of an authorized body** responsible **for regular and mandatory monitoring** of the implementation of transport measures included in the NDCs.
- **Irregularity and inconsistency of data collection**: Much of the data is generated on demand by projects (e.g. UNDP, ICAT) rather than automatically fed into a centralised system.
- Lack of capacity in government to analyse data, conduct climate impact assessments and use tools such as GACMO.
- Limited legal obligations to provide climate information between agencies.

Thus, even where data are available, their use to assess progress within the NEI is not institutionalised.

5.3. Tracking practices within projects

During 2020–2025, the implementation of elements of the tracking system took place mainly through international initiatives:

- **The ICAT/UNOPS project** supported the development and testing of indicators for the transport sector and provided training on the GACMO tool.
- **The development of a set of NDC tracking indicators**, agreed upon by national experts and agencies, is an important step forward, but they are **still at an early stage and are not formally enshrined in law**.
- The data used in the calculations (number of EVs, buses, intersections, bike paths, etc.) were collected manually, partly upon request or based on fragmented open sources.

Thus, the current tracking system is temporary, project-oriented, and requires sustainable institutional integration.

5.4. The need to create a permanent MRV system

To ensure systematic monitoring and long-term reporting, it is proposed:

- Establish a coordinating body or unit responsible for monitoring the implementation of mitigation measures in transport within the framework of the NDC.
- Integrate a set of indicators into the state monitoring system, with the participation of the Ministry of Transport and Communications, the National Statistical Committee and the Ministry of Energy and Natural Resources.
- Develop protocols for data collection, processing and verification (including QA/QC), with a clear distribution of responsibilities for indicators.
- Implement a digital tracking platform that would allow data aggregation in real time.
- Provide ongoing training to staff in relevant ministries on climate monitoring and the use of tools such as GACMO.

Thus, the creation of a sustainable tracking system requires not only methodological and technical solutions, but also political will for institutionalization, so that the transition from design solutions to state practice becomes a reality.

6. Progress tracking and indicator system

Tracking the implementation of mitigation measures in the transport sector is only possible with a robust monitoring, reporting and verification (MRV) system built on verifiable data, clearly defined indicators and institutional interaction between responsible structures. As part of the development of the NDC tracking framework (ICAT project output 3), a set of practical indicators applicable to key climate measures was proposed for the transport sector in Kyrgyzstan.

6.1 Description of the MRV system

The MRV system in the transport sector in its current configuration is of a limited initiative nature and functions through individual projects and voluntary participation of government agencies. There is no full integration into public administration.
A typical MRV chain includes:

- monitoring: collection of data on quantitative indicators (vehicles, fuel, buses, traffic lights, etc.);
- Reporting: preparing regular progress tables, for example under NDCs;
- Verification: checking the accuracy of data, comparing it with calculations (e.g. in GACMO), cross-checking with other sources.

6.2. Data sources

Currently, data for calculations is collected from the following sources:

Source	Data content
National Statistical Committee (NSC)	Fuel and energy balance worksheets.
Ministry of Transport and Communications (MTiC)	Programs, NPA
Customs Service	Data on imported vehicles (age, type, emission class)
Municipal authorities (Bishkek, Osh)	Number of buses, validators, bike paths, smart traffic lights, Public transport, buses, bike infrastructure,
MREETN KR and UNDP, ICAT projects	GHG emission calculations under their supervision, BAU/CM/SDM models, reduction estimates - coordination.
Agency for the Registration of Vehicles and Drivers	Data on the number of registered vehicles

However, the regularity, format and comparability of these data are not yet standardized, and are often collected manually within projects.

6.3. Key indicators for each mitigation measure

For each measure**, practical, quantitatively measurable indicators have been defined** to enable the degree of implementation to be monitored and the climate effect to be assessed.

6.4. Progress: comparison of planned and actual values (2025)

Below is **a table comparing the planned and actual values of the indicators** (as of 2025), as well as an indicative assessment of **the percentage of completion**:

No.	Indicator	Plan (2025)	Fact (2025)	% completion	Comment
1	Number of electric vehicles (EV)	10 800	~7,000	~63.5%	The main barrier is price and charging infrastructure

2	Number of intersections with automated traffic control systems	Previously, the indicator was tons of emissions reduced - 103.7 thousand tons	Estimate of 56 thousand tons by the new approach through the number of intersection s	54%	Only in Bishkek, the project is not scaled
3	Length of bike paths (km)	50	~50	~100%	Further plans are unknown. Progress will likely be modest.
4	Number of CNG/EV buses	1048 gas-power ed and 135 electric buses	1337 gas-powere d and 135 electric buses	100%	Implemented
5	Number of installed validators	1,460	~1460	~100%	If we calculate according to the new approach, then a recalculation is necessary. Most likely, there is an overestimation.
6	Number of drivers trained in ECO-driving	1,600	0	%	No permanent program. No training. The result was expected in 2030.
7	Number of new cars instead of old ones	there was no clear indicator before the G ASMO tool	~ 20,000	~ 24.5 %	Limited effect of fiscal measures
8	Estimated cumulative GHG reduction (thousand t CO_2	455 thousand tons of CO2 eq.	~211 thousand tons of CO2 eq.	~47%	according to GACMO and other new approaches to

	eq) (The comparison is conditional)				methodology and failure to implement according to SDM and SM.

Conclusion on the section

Planned measures to reduce emissions in the transport sector by 2025 will be partially implemented, with an average level of implementation of about 42–50% for key indicators. The main reasons for failure to achieve the targets include:

- inflated expectations without taking into account real institutional potential;
- lack of a regular monitoring mechanism;
- lack of research for methodologies and approved techniques;
- insufficient coordination between authorities and lack of sustainable funding.
- Overestimated expectations of international support under SDM scenarios;

Nevertheless, the developed tools (indicators, GACMO calculations) create a good basis for institutionalizing monitoring and revising climate strategies based on real data.

7. Using GACMO to calculate and forecasemissions

GACMO (Greenhouse Gas Abatement Cost Model) is a tool developed by the UNEP Copenhagen Climate Centre to assess potential GHG emission reductions associated with the implementation of various mitigation measures, as well as to analyze their costs and effectiveness. In the context of the Kyrgyz Republic, GACMO will be proposed for use in analyzing the transport sector, taking into account national realities and constraints.

7.1 What is GACMO and how is it used?

GACMO is **an interactive Excel model** that allows countries to:

- calculate the potential for reducing GHG emissions for individual mitigation measures;
- analyze the cost and economic efficiency of measures (US dollars per 1 t of CO_2-eq);
- compare different development scenarios (BAU, with measures, with additional measures);
- to rank measures based on the ratio of climate and economic efficiency.

Advantages of GACMO:

- Simplicity and clarity - built in Excel, does not require special (Geographic Information System, GIS) or statistical platforms because not tied to geographic visualization.
- Flexibility – can be adapted to the national context.
- Transparency - calculations are based on open formulas and accessible data.
- Possibility of integration into MRV and NDC reporting.

Model structure:

GACMO contains over **119 generic mitigation measures** grouped by sector, including:

- energy,
- **transport** (about 20 measures),
- industry,
- households
- agriculture,
- waste, etc.

Each measure has standard input parameters: volume (pcs., km, GWh, etc.), baseline and improved emissions, investment and duration. This allows for a quick assessment of the climate impact and relative costs.

7.2 Emissions forecast: BAU scenarios and reductions

To assess the long-term emission trajectory, GACMO allows two baseline scenarios to be constructed:

- **BAU (Business-as-usual)** is an inertial scenario without introducing additional mitigation measures, based on historical data on emissions, fuel consumption, economic growth (GDP, PPP), population, etc.
- **With Measures scenario –** includes the implementation of a package of policies and programmes, including those from the NDC.

Historical data:

The following data were used to build the model:

- on emissions in the transport sector (2005–2023),
- by fuel (according to NSC, ONUV, GHG inventories),
- by GDP and PPP (IEA, World Bank).

Forecast to 2050:

- The BAU forecast shows a steady increase in emissions from transport while maintaining current trends.
- The transport sector in the BAU scenario continues to contribute over a quarter of the country's total emissions growth.

- In the scenario with the introduction of a set of mitigation measures, a reversal of the trend is possible after 2030.

7.3. Calculation of the effectiveness of mitigation measures

Using GACMO, an analysis was conducted of the typical measures included in the NDCs and their alignment with the available templates in the model.

Relevant measures from Kyrgyzstan's NDCs that are fully implemented in GACMO:

Measure from NOUV	The corresponding measure in GACMO	Comment
Electric cars	Electric vehicles	Fully supported, hybrids are not supported
CNG (methane) buses	Vehicles using compressed methane (CH_4)	There is a similar measure, buses can be directly compared
Bicycle infrastructure	Increase in bicycle infrastructure (km)	Direct measure, calculated based on the length of bike paths
Restrictions on the import of old cars	Restriction on import of used cars	Direct template, possible to specify the proportion of substitution

Measures that could be added to NDC-3 and supported by GACMO:

A promising measure	Is it in GACMO?	Comment
Bus Rapid Transit (BRT)	**Yes**	**Can be used for Bishkek if there are projects**
Electric two-wheelers (electric scooters)	**Yes**	**Suitable for southern cities, an affordable alternative to cars**

Measures that are not relevant for the near future:

Irrelevant measures	Why are they not applicable in the CR?

Use of biodiesel	There is no market, no supply, no standards
Light Rail Transport (LRT)	Very expensive, takes decades to implement

Conclusion to the section

The use of GACMO makes it possible to:

- quantify the real emission reduction potential of each measure;
- prioritize mitigation measures based on the cost-effectiveness ratio;
- match the ambitions of the NDC with the real possibilities;
- to obtain an evidence-based basis for revising future contributions (NDC-3), including adding new measures (e.g. BRT, e-scooters).

The tool is recommended for use as a basis for national climate instruments, including for reporting on NDC progress.

8. Data Gaps and Key Challenges

Despite the steps taken to improve monitoring and accounting in the transport sector, a number of serious challenges remain that hinder the full tracking of progress on NDCs and the implementation of climate measures.

8.1 Lack of a centralized and regular database

Data collection is carried out by various departments and projects, but there is no single centralized system where all relevant information (vehicle fleet, mileage, fuel consumption, measures, etc.) would be accumulated. Data formats are different, the update frequency is irregular.

8.2. Insufficient data on vehicle operation

National statistics lack reliable data on annual mileage, technical condition, actual fuel consumption and vehicle emissions. There is also no systematic accounting of new/used cars, the share of hybrids, CNG vehicles and electric vehicles in real traffic.

8.3. Application of the simplified methodology (Tier 1)

National calculations of GHG emissions from transport are mainly based on Tier 1 (average emission factors and aggregated data), which leads to a high degree of uncertainty and dependence on assumptions. The application of more accurate approaches (Tier 2/Tier 3) is not possible without expanding the data.

8.4. Lack of qualified personnel

Many authorities do not have stable personnel units responsible for climate calculations, modeling and monitoring. Monitoring is often carried out within the framework of projects, after which knowledge is lost. Low level of training makes it difficult to use tools (including GACMO), especially at the regional and municipal level.

9. Recommendations

Taking into account the identified problems and international practice, the following set of institutional, technical and political solutions is proposed:

9.1 Institutional measures

- Establish a permanent coordinating body for climate in the transport sector, responsible for collecting, processing and reporting on mitigation measures.
- To consolidate the functions of collecting and transmitting data between the Ministry of Transport, the National Security Council, Agencies, municipalities and customs on a permanent basis.

9.2. Data and digitalization

- Create a centralized digital database integrated with the MRV system for NDCs, with open access for authorized bodies.
- Standardize data formats (EV, buses, bike paths, mileage, CNG, etc.).

9.3. Methodology and calculations

- Update the calculation methodology, move from Tier 1 to Tier 2 and above - especially in terms of vehicle fleet, mileage and CH_4/N_2O emissions.
- Implement GACMO and similar tools into the regular analytical process, not only within projects but also as the main model for assessment and reporting.

9.4. Personnel development

- Develop a training and certification program in climate calculations and model use for government officials and technical specialists.
- Ensure the transfer of knowledge from projects (UNDP, ICAT, UNEP) to government agencies while maintaining competencies.

10. Conclusion

10.1 General assessment of progress

In the period 2017–2025, the Kyrgyz Republic demonstrated **partial progress** in implementing climate measures in the transport sector. Individual measures (e.g. bicycle infrastructure, introduction of ATMS, support for EVs) were launched, but their implementation remains fragmented. The average level of implementation for key indicators is about **42–50%** of the plans declared in the NDC-2021.

10.2 Realistic goals and the need for adaptation

The GACMO analysis showed that **the initial targets were too high**, particularly for electric vehicles, traffic management, cycling infrastructure, tolls and the overall volume of reductions. Updating the targets and implementing measures in the context of realistic assumptions and available resources is a priority in preparing the next version of the NDC.

10.3. The Role of ICAT and GACMO

Through participation in the ICAT project and the application of GACMO, Kyrgyzstan has received:

- a set of visual indicators and methods for calculating the mitigation effect;
- the first attempt at institutional systematization of monitoring;
- a prepared basis for the implementation of MRV and climate analytics in public administration.

10.4. Outlook to 2030 and Beyond

By 2030, the main focus should be on:

- scaling up of implemented and effective measures (gas buses, EVs, automated traffic control systems, bicycle infrastructure);
- creation of a stable monitoring and coordination system;
- institutionalization of climate models and digital tools;
- preparation for NDC-3, including the addition of advanced measures (BRT, e-scooters, sustainable forms of urban mobility).

10.5. Annex

The annex contains materials that ensure methodological transparency of the calculations performed and allow the results to be reproduced.

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