

TERMS OF REFERENCE

Preparation of the Road Transport Climate Strategy and Action Plan (RTCSAP)

A. Background

1. Kyrgyz Republic is a mountainous, landlocked country and although there are 35,000 kilometers (km) of roads, the country has only 420 km of railway tracks. None of Kyrgyz Republic's rivers are navigable, and the country has no canals. Inland waterways are minimal apart from tourist boating on Lake Issyk Kul.¹ Regional commerce depends heavily on road transport; approximately 95% of passenger traffic and more than 50% of freight traffic is carried by road. The road infrastructure has been routinely affected by climate change-induced extreme weather events, including high temperatures, landslides, and mudslides. Roads and railways are increasingly exposed to climate and disaster risks, highlighting the need to strengthen the resilience of transport infrastructure to safeguard connectivity and regional trade.²

2. The Ministry of Transport and Communications (MOTC) is responsible for transport and communications policy, regulation, planning, and development. The MOTC is also mandated to maintain 3,903 kms of international roads, 6,242 km of national roads, and 8,816 km of local roads. Local government is responsible for secondary, rural, and urban roads.

3. Kyrgyz Republic is a signatory to the United Nations Framework Convention on Climate Change (UNFCCC) 2015 Paris Agreement that aims to hold the increase in global average temperature to well below 2°C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5°C. Kyrgyz Republic's greenhouse gas (GHG) emissions are relatively low compared with other countries. About 90% of the total electricity generation is supplied by hydroelectric power plants. However, Kyrgyz Republic imports fossil fuels for vehicles and for electricity generation during winter. Despite this, the long-term vision of Kyrgyz Republic is to achieve carbon neutrality by 2050. Reducing GHG emissions requires decarbonizing the transport sector, with recorded emissions at 3.60 Mt CO₂e.³

4. The transport sector relies on fossil fuels (e.g., gasoline and diesel) for 92% of its energy and emits around 23% of the CO₂ that drives global warming. In 2025, Kyrgyz Republic has submitted to the UNFCCC its Nationally Determined Contributions (NDC 3.0) which states the aim of reducing GHG emissions by 39% by 2035 (with conditional support). Electric vehicles (EVs) play a large part in achieving this goal.⁴ As most of the transport in Kyrgyz Republic is by road, EVs is a positive step to reducing GHG emissions. Moreover, a comprehensive understanding of the development pathway in the transport sector should be considered including modal shift, fuel switch, vehicle efficiency improvements, and traffic management and urban planning to promote efficient mobility. A Road Transport Climate Strategy and Action Plan (RTCSAP) will be prepared to offer options to operationalize the country's NDC 3.0 and net zero ambition for the transport sector (i.e., road), whilst recognizing the limitations under which MOTC operates and the practical realities they face.

B. Implementation Arrangements

5. Under the project, MOTC will engage a consulting firm composed of 5 international and 3 national consultants to provide a total input of 27 person-months until Q4 2027 (intermittent). MOTC will supervise the consulting firm and is expected to lead the updating

¹ Transport and infrastructure in Kyrgyzstan, 2023 worlddata.info/asia/kyrgyzstan/transport.php

² ADB. 2023. Country Partnership Strategy: Kyrgyz Republic, 2023–2027.

³ Kyrgyz Republic. 2025. Nationally Determined Contribution (NDC 3.0). Bishkek

⁴ The government's future plans for electric vehicles are described in the "Action Plan for the Implementation of the National Development Strategy of the Kyrgyz Republic until 2026" under Section I "Anti-crisis measures", item 44; and Section IV "Economic priorities", green transport, items 441-445.

and preparation of RTCSAP which was prepared during the project preparation in 2023 (Annex 1). The RTCSAP will be developed in coordination with ADB and other relevant government ministries including:

- a. Ministry of Natural Resources, Ecology and Technical Supervision (commitments under Paris Agreement / NDC 3.0)
- b. Ministry of Economy and Commerce (Green Economy Development Programme [GEDP])
- c. Power Generation Agencies (charging station connections)
- d. Ministry of Finance (exemptions on VAT, import duty, registration)
- e. Ministry of Foreign Affairs (Quotas for importing EVs, foreign exchange)
- f. Private sector investors (Operating charging stations)
- g. Vehicle retailers (selling EVs)
- h. Local authorities (land for charging stations)
- i. Communities (acceptance of switch to public transport)
- j. Other relevant ministries and stakeholders.

C. Objective, Scope, Outputs, and Activities for the Firm

6. This assignment aims to update and prepare the RTCSAP that will provide a comprehensive transport sector decarbonization strategies for the road sector in the short, medium, and long terms (including capacity building needs), up to 2050. The RTCSAP demonstrates and fulfils Kyrgyz Republic's commitment under the Paris Agreement and Kyrgyz Republic's ambition to achieve net zero by 2050. Table 1 lists the indicative inputs and tasks of each international expert in the consulting firm team as well as the respective minimum qualification requirements. Key deliverables or outputs include:

- 6.1. Inception report and work plan. Following the discussion with MOTC and ADB submit an inception report outlining the methodology including prioritization tools for strategies/activities, detailed work plan, data request list, and stakeholder map for the consultation and training.
- 6.2. Road Transport Climate Strategy (the Strategy) and Action Plan. It will consider the following activities:
 - a. Review of successful road transport decarbonization examples in the region and globally.
 - b. Assess critical barriers and potential solutions / measures to promote effective road sector decarbonization. It will also cover analysis of transport policies, guidelines, plans, and studies in the Kyrgyz Republic, including but not limited to:
 - i. Review of the NDC 3.0, GEDP, Transport Sector Plan (i.e., road), and other relevant long-term development strategies
 - ii. Assess regional and international standards for EVs and low-carbon road transport (e.g., Central Asia and Eurasian transport eco-system)
 - iii. Identify and review energy (e.g., electricity grid considerations to support EVs), transport, and construction sector policies, standards, and regulations affecting road sector decarbonization including tailpipe emissions, O&M-related emissions (e.g., lighting), and embodied carbon in road infrastructure (based on international best practices/guidelines)
 - iv. Assess status and trends in road sector decarbonization including, but not limited to, passenger-miles and carbon intensity, electrification, biofuel blending, EV charging infrastructure, low- and zero-emission vehicle ownership, etc.
 - v. Review the *Road Maintenance Financing and Cost Recovery Options* study (November 2024) and available from the following link <https://www.adb.org/sites/default/files/publication/1012746/sdwp-100-road->

[maintenance-financing.pdf](#). With a desired transition to EVs, the fuel tax that plays a major role in funding the maintenance and renewal of the road network will be reduced. This loss of revenue needs to be recovered from EVs to ensure the long-term sustainability of the road network.

- vi. Assess the extent of implementation of transport policies, programs, and guidelines, including gaps and budgetary requirements
 - vii. Review available studies, assessments, and programs supported by ADB and other development partners in Kyrgyz Republic (e.g., e-mobility)
- c. Assess the cost-effectiveness of decarbonization measures across avoid–shift–improve pathways, including EVs, fuel switching, and demand management.
 - d. Conduct scenario modelling: e.g., (i) Business-as-usual (BAU), (ii) Moderate policy, and (iii) High-ambition Paris-aligned pathway.

6.3. Action Plan (AP) to Implement the Strategy

- a. Based on the long list of decarbonization options for the road sector, identify/map-out key strategies/interventions, using appropriate prioritization tools, for short, medium, and long-term horizons including, but not limited to, passenger-miles and carbon intensity, electrification, biofuel blending, EV charging infrastructure, low- and zero-emission vehicle ownership. The consulting firm shall identify (through consultations and workshops) confirm or modify the draft AP prepared during the project preparation and suggest additional actions and/or adjust the speed of implementation of actions to close the gaps. Details should include implementation timeline of each action, appropriate agency to deliver the intervention, associated budgetary requirement, and monitoring and reporting arrangement.

6.4. Undertake engagement, consultation, and workshop on RCTSAP

- a. Prepare and conduct training needs assessment (TNA) to identify the gaps in understanding and delivering decarbonization objectives in road transport
- b. Deliver at least 2 in-country training sessions with key government ministries to increase understanding of low carbon measures in the road sector
- c. Design, organize, and conduct at least 3 in-country consultations and/or workshops to present and secure stakeholder buy-in for the RCTSAP

Table 1: Indicative Inputs and Tasks and Minimum Qualification Requirements of the Consulting Firm Team

Consultant Position (Source, Inputs)	Indicative Outline Tasks	Minimum Qualifications Required
Team Leader and Institution Development Expert / Climate Change Expert / Embedded Carbon Expert / Transport Planner (International, 6 person-months)	In close coordination with the other members of the consulting firm team: a. Define the decarbonization vision for scope, and targets of the road transport climate strategy (decarbonization) in Kyrgyz Republic aligned with national strategies and NDCs, and coordinate inter-agency stakeholders across transport, energy, environment, and finance.	a. Advance degree in engineering, climate change, or comparable field of expertise. b. At least 10 years of experience in sustainable road engineering design and construction. c. Experience in designing and/or selecting

Consultant Position (Source, Inputs)	Indicative Outline Tasks	Minimum Qualifications Required
	<ul style="list-style-type: none"> b. Lead the development of the road-sector GHG baseline and system diagnostics, ensuring robust data, assumptions, and coverage of demand, fleet, fuels, and operations, among others. c. Lead identification and simulation of decarbonization scenarios and prioritize measures using appropriate tools (e.g., multi-criteria analysis across avoid–shift–improve pathways). d. Lead the finalization of the RTCSAP with phased implementation, including investment needs, financing options, and required policy and regulatory reforms. 	<ul style="list-style-type: none"> sustainability metrics for infrastructure projects. d. Experience in designing policies and actions for decarbonizing road transport as well as familiarity with avoid, shift, and improve approach. e. As Team Leader, the candidate shall have demonstrable project leadership experience on similar assignments. Knowledge of ADB procurement and reporting procedures is beneficial. f. Excellent and demonstrable analytical skills. g. Fluent in English with strong communication skills. h. At least 5 years of experience in Asia is preferred.
<p>Energy/Electricity Power Generation Expert (International, 1 person-month)</p>	<ul style="list-style-type: none"> a. Assess whether the power system can support increased use of electric vehicles, considering generation mix, seasonal hydropower variability, and grid reliability. b. Align road sector electrification plans with national power generation and renewable energy expansion pathways. c. Estimate electricity demand from EV charging and assess impacts on peak load and distribution networks. d. Evaluate the net emissions reduction potential of EVs based on current and future grid emission intensity. e. Identify priority power-sector investments and policy actions needed to enable low-carbon road transport. 	<ul style="list-style-type: none"> a. Degree in engineering, or other relevant field of expertise. b. At least 10 years' experience in power generation and distribution analysis or design. c. Previous experience in understanding power grid demand from EVs is preferred. d. Strong technical and analytical skills and fluent in English.
<p>Electric Vehicles / Charging Stations / Fuel Switching Expert (International, 2 person-months)</p>	<ul style="list-style-type: none"> a. Assess the road transport fleet and usage patterns to identify priority segments for electrification and alternative fuel switching (public transport, freight, private vehicles). b. Define EV and alternative fuel pathways, including technology options, rollout scenarios, and 	<ul style="list-style-type: none"> a. Degree in engineering or other relevant field of expertise. b. At least 5 years' experience in developing policies related to EV vehicles, charging

Consultant Position (Source, Inputs)	Indicative Outline Tasks	Minimum Qualifications Required
	<p>timelines consistent with national transport needs.</p> <p>c. Plan charging and refueling infrastructure, including location planning, coverage standards, and interoperability for urban, rural, and state road networks.</p> <p>d. Evaluate costs, affordability, and user uptake barriers, including vehicle costs, charging access, and operational considerations.</p> <p>e. Recommend transport-sector policies and incentives (standards, procurement, subsidies, regulations) to accelerate adoption of EVs and low-carbon fuels.</p>	<p>infrastructure, and related activities.</p> <p>c. Professional experience of at least 10 years in activities relating to the transport sector.</p> <p>d. Strong technical and analytical skills and fluent in English.</p> <p>e. Work experience in multiple countries is desirable.</p>
<p>Transport Economist (International, 3 person-months)</p>	<p>a. Develop the economic baseline for the road sector, including travel demand, vehicle operating costs, fuel use, and externalities.</p> <p>b. Assess the cost-effectiveness of decarbonization measures across avoid–shift–improve pathways, including EVs, fuel switching, and demand management.</p> <p>c. Conduct economic and financial analysis of priority measures, including lifecycle costs, affordability, and distributional impacts (e.g., labor and employment impacts/Just Transition).</p> <p>d. Evaluate macroeconomic and fiscal implications, including impacts on public budgets, fuel tax revenues, subsidies, and households.</p> <p>e. Support investment prioritization and policy design using appropriate prioritization tools to inform a phased, economically viable roadmap (e.g., cost–benefit and multi-criteria analysis)</p>	<p>a. Degree in economics and finance or other relevant fields of expertise.</p> <p>b. At least 10 years' experience in developing policies related to road funding.</p> <p>c. Experience in Scenario Analysis for Mitigation Potential.</p> <p>d. Experience in road funds preferred</p> <p>e. Strong technical and analytical skills and fluent in English.</p> <p>f. Work experience in multiple countries is desirable.</p>
<p>Civil Engineer / Climate Change Mitigation (Transport) Specialist (International, 2 person-months)</p>	<p>a. Assess road infrastructure design, construction, and maintenance practices to identify embodied and operational carbon reduction opportunities.</p> <p>b. Identify and evaluate low-carbon engineering solutions (materials, pavement technologies, asset management, and maintenance optimization).</p>	<p>a. Civil engineering or other relevant field of expertise (with specialization in transportation, highways, or structural engineering).</p> <p>b. At least 10 years' experience in developing policies related to road funding.</p> <p>c. Experience in road and transport infrastructure projects, including</p>

Consultant Position (Source, Inputs)	Indicative Outline Tasks	Minimum Qualifications Required
	<ul style="list-style-type: none"> c. Quantify infrastructure-related emissions and mitigation potential across the road asset lifecycle. d. Recommend integration of climate-smart standards and specifications into road design, procurement, and maintenance frameworks. e. Support prioritization of engineering interventions that deliver cost-effective emissions reductions while maintaining safety, durability, and resilience. 	<ul style="list-style-type: none"> pavement design, construction materials selection, and auxiliary works (e.g., drainage, bridges, slopes, road furniture). d. Expertise in construction materials engineering and familiarity with relevant international standards. e. Strong technical and analytical skills and fluent in English. f. Work experience in multiple countries is desirable.
Climate Change Mitigation (Transport) Specialist (National, 7 person-months)	<ul style="list-style-type: none"> a. Support assessment of national road design, construction, and maintenance practices to identify opportunities for reducing embodied and operational carbon within current standards and local industry capability. b. Assist in identifying feasible low-carbon engineering solutions applicable in the Kyrgyz context (materials availability, pavement technologies, local construction sector capacity). c. Compile local project data needed to quantify infrastructure-related emissions and contribute to lifecycle emissions assessments. d. Support integration of climate-smart design principles into national road standards, procurement procedures, and maintenance strategies. e. Provide local insights on prioritizing engineering interventions that balance emissions reductions with durability, safety, cost, and climate resilience. 	<ul style="list-style-type: none"> a. Degree in civil engineering, transport engineering, highway engineering, or related discipline. b. At least 7–10 years of experience in road design, construction, or maintenance within the Kyrgyz Republic. c. Experience with materials engineering, pavement design, construction practices, and auxiliary structures (drainage, slopes, bridges) is strongly preferred. d. Familiarity with national standards, construction regulations, and public procurement processes. e. Strong analytical abilities; fluency in Kyrgyz and/or Russian; working English proficiency preferred.
Energy/Electricity Power Generation Expert (National, 4 person-month)	<ul style="list-style-type: none"> a. Support the assessment of whether the national power system can accommodate increased EV penetration by providing local data on generation mix, seasonal hydropower variability, grid performance, outages, and reliability issues. b. Collaborate with the international expert to align road-sector 	<ul style="list-style-type: none"> a. Degree in electrical engineering, power systems engineering, energy engineering, or relevant field. b. At least 5 years of experience in power generation, transmission, distribution analysis, or

Consultant Position (Source, Inputs)	Indicative Outline Tasks	Minimum Qualifications Required
	<p>electrification pathways with national power system development plans, renewable energy targets, and ongoing energy-sector reforms.</p> <p>c. Assist in estimating EV-related electricity demand by compiling local consumption patterns, distribution network constraints, and peak-load dynamics.</p> <p>d. Provide national emissions-factor data and contribute to evaluating net emissions-reduction potential from EVs under present and expected grid conditions.</p> <p>e. Identify feasible, priority domestic energy-sector investments and policy improvements (based on local regulatory processes and political economy realities) needed to enable decarbonized road transport.</p>	<p>utility operations within the Kyrgyz Republic.</p> <p>c. Experience supporting assessments related to electricity demand, grid stability, or EV charging integration is preferred.</p> <p>d. Strong analytical skills; proficiency in national regulatory and institutional frameworks for the power sector.</p> <p>e. Fluency in Kyrgyz and/or Russian; functional English is an asset for coordination with international experts.</p>
Electric Vehicles / Charging Stations / Fuel Switching Expert (National, 2 person-months)	<p>a. Collect and analyze national data on vehicle fleet characteristics, travel profiles, public transport operations, and freight movement to help identify priority electrification and fuel-switching opportunities.</p> <p>b. Support the formulation of EV and alternative-fuel pathways by providing local technology cost information, market readiness, dealer/importer conditions, and national deployment constraints.</p> <p>c. Assist with charging and refueling infrastructure by mapping feasible locations, land availability, grid access, and municipal permitting requirements.</p> <p>d. Provide localized insights on consumer affordability, behavioral barriers, charging access constraints, and operational issues affecting EV uptake.</p> <p>e. Support development of national transport-sector policies and incentives by compiling local regulations, tax structures, import rules, procurement practices, and stakeholder perspectives.</p>	<p>a. Degree in engineering, transport engineering, renewable energy, or a related field.</p> <p>b. At least 5 years of relevant experience in EV policies, charging infrastructure planning, transport sector operations, or supporting low-carbon transport development.</p> <p>c. Demonstrated understanding of national vehicle markets, transport-sector institutional structures, and fuel-switching initiatives.</p> <p>d. Strong analytical and coordination skills; familiarity with Kyrgyz regulatory, fiscal, and permitting processes.</p> <p>e. Fluency in Kyrgyz and/or Russian; ability to communicate with international experts in English is an advantage.</p>

D. Reporting Requirements for the Consulting Firm

Deliverables	Timeline
a. Inception Report – containing the methodology to be used during the assignment and the work plan	4 weeks upon contract signing
b. Inception Workshop and Consultation	8 weeks upon contract signing
c. 1 st draft Strategy	20 weeks upon contract signing
d. 1 st draft of the Action Plan	30 weeks upon contract signing
e. 2 nd Workshop and Consultation to present and solicit buy-in on final draft RTCSAP	36 weeks upon contract signing
f. TNA for the conduct of Capacity Building	40 weeks upon contract signing
g. 1 st Training on low carbon measures in the road sector	44 weeks upon contract signing
h. 2 nd draft of the Action Plan	50 weeks upon contract signing
i. 3 rd Consultation to present and solicit buy-in on final draft RTCSAP	51 weeks upon contract signing
j. 2 nd Training on low carbon measures in the road sector	54 weeks upon contract signing
k. Draft Final Report including RTCSAP training, TNA, and workshop proceedings with Q&As, list of participants, and so forth	58 weeks upon contract signing
l. ADB and MOTC to review the draft final RTCSAP	2 weeks upon contract signing
m. Final Report that incorporates the government agencies and ADB's comments given on the draft final report	3 weeks after the receipt of the comments from ADB and MOTC on the Draft Final Report

E. Counterpart Support

7. MOTC will provide the following support and amenities to the consultants for the whole duration of the assignment at zero cost, including reasonable extensions:
 - a. Communication with relevant government agencies to supply the consultant with any necessary information
 - b. Office accommodation with four (4) chairs and desks and internet access

Road Sector Climate Strategy and Action Plan

A. Background

A.1. Climate Change and Need for Transport Decarbonisation Strategy

1. Climate change and global warming is a world-wide concern and the main driver of increasing temperatures is the use of fossil fuels; coal, oil, and gas. Globally, transport emits around 23% of the CO₂ that feeds global warming and this could reach 40% by 2030. Transport emissions have grown faster than those of any other sector (e.g., energy and agriculture) over the past 50 years. Demand for transport will continue to grow in the coming decades, leading to CO₂ emissions possibly increasing by 60% by 2050. Mitigating climate change requires decarbonizing transport which relies on fossil fuel (i.e., gasoline and diesel) for 92% of its energy.⁵

A.2. Kyrgyz Republic's Road Transport Sector

2. The Kyrgyz Republic is a mountainous, landlocked country bordering the People's Republic of China (PRC) in the east, Kazakhstan in the north, Tajikistan in the south, and Uzbekistan in the west. Although there are over 35,000 km of roads, the country has only 420 km of railway tracks in two separate networks, one in the north and one in the south, and these are not connected. None of Kyrgyz Republic's rivers are navigable, and the country has no canals. Inland waterways are minimal apart from tourist boating on Lake Issyk Kul.⁶ Regional commerce depends heavily on road transport, which dominates the Kyrgyz Republic's transport system. Approximately 95% of passenger traffic and more than 50% of freight traffic and carried by road. The road infrastructure has been routinely affected by climate-induced extreme weather events, including high temperatures, landslides, and mudslides. This is expected to worsen in the future.⁷

A.3. Ministry of Transport and Communications (MOTC)

3. The MOTC is responsible for transport and communications policy, regulation, planning, and development. MOTC is also mandated to maintain 4,163km of international roads, 5,678km of national roads, and 8,969km of provincial roads. Local government agencies are responsible for developing and maintaining secondary, rural, and urban road networks.

A.4. Government of Kyrgyz Republic Position on Climate Change Mitigation

4. Kyrgyz Republic is a signatory to the UNFCCC 2015 Paris Agreement that aims to keep the global temperature increases to 1.5°C. Kyrgyz Republic's greenhouse gas emissions (GHGs) are relatively low compared with other countries. About 90% of the total electricity generation is supplied by hydroelectric power plants. However, Kyrgyzstan imports fossil fuels to generate electricity during the winter. Despite this, the long-term vision of Kyrgyz Republic is to limit the per capita GHG emissions to a very low level of 1.58tCO₂ in line with <1.5°C objective.

5. In 2021, Kyrgyz Republic updated its Nationally Determined Contribution (NDC) with the aim of reducing GHG emissions by 44% by 2030, if international support is provided. The NDC advocates a low-carbon transformation up to 2030 through adoption of the Low-Carbon Development Strategy and electric vehicles (EVs) play a large part to achieve this goal.⁸ As most of the transport in Kyrgyz Republic is by road, encouraging EVs is a positive step to reducing GHG emissions. However, there are many more aspects to decarbonisation of the road transport sector than just EVs and an overall strategy and action plan is required to give

⁵ OECD International Transport Forum, 2023, <https://www.itf-oecd.org/decarbonising-transport>

⁶ Transport and infrastructure in Kyrgyzstan, 2023 worlddata.info/asia/kyrgyzstan/transport.php

⁷ Country Partnership Strategy: Kyrgyz Republic, 2013–2017

⁸ The government's future plans for electric vehicles are described in the "Action Plan for the Implementation of the National Development Strategy of the Kyrgyz Republic until 2026" under Section I "Anti-crisis measures", item 44; and Section IV "Economic priorities", green transport, items 441-445.

a holistic approach whilst recognising the limitations under which MOTC operates and the practical realities they face.

B. Transport Decarbonization Strategy

B.1. Transport Mode Options

A Road Sector Climate Strategy and Action Plan must consider if a modal shift is possible from road vehicles to pedestrians, bicycles, railways, aircraft, or inland water ways. All play a part but in Kyrgyz Republic due to the unfavorable terrain such options are limited. Therefore, as part of the decarbonization strategy one must revert to basics and consider alternatives from the ground upwards. This approach is based on:

- AVOID
- SHIFT
- IMPROVE

Which can be related to all modes of transport as follows:

- Avoid
 - Walk, ride bicycle (micro-mobility)
 - Work from home
 - Teleconference (ZOOM, TEAMS)
 - Spatial Planning – reduce commuting distances
- Shift
 - Modal Shift from road to rail
 - Move from Private to Public Transport
 - Share Rides
 - Carpools
- Improve
 - Better EVs (Reliable vehicle design, Lighter batteries)
 - No VAT or Import Duty on EVs
 - Comprehensive Network of charging stations
 - Financial Incentives for Share Rides
 - Traffic Lanes for Carpools
 - Construction techniques (reduce embedded carbon)

B.2. Kyrgyz Republic “Green Transport” Plan

6. The Government Green Transport policy places emphasis on EVs but electrification is not limited to only road transport. Trains have an advantage over other modes in that they run on fixed rails allowing scope to provide energy to them via an extra rail or overhead lines. This means they do not have to carry their fuel source which leaves more room for passengers or haulage capacity for freight. The proposals by GoK to electrify two sections of rail links places a demand for electricity on the grid which must be considered together with the demand for charging stations for EVs. There are also plans for construction of a new railway line "Russia-Kazakhstan-Kyrgyzstan-Tajikistan" running north-south and a China-Kyrgyzstan-Uzbekistan railway running east-west. Both roads and railways come under departments within MOTC so there is a need to cooperate on plans which may increase future demand on the power generation network. Electric boats are an alternative and one is planned for Lake Issyk Kul. Passenger ferries need a fast turn-around time so rapid charging is essential for e-boats. Aircraft play such a small part in passenger and goods transport but will not be considered further in this strategy. Their only realistic fuel alternative is biofuel.

7. The government's plans for EVs are described in the “Action Plan for the Implementation of the National Development Strategy of the Kyrgyz Republic until 2026.”⁹ These actions are described in Table B-1 below.

⁹ Section I “Anti-crisis measures”, item 44; and Section IV “Economic priorities”, green transport, items 441-445.

Table B-1: Actions related to EVs in the NDS Action Plan

No.	Tasks	Measures	Indicator expected result	Responsible agency	Deadline	Financing source
I. Anti-crisis measures						
1.2 Recovery of economic activity						
44	Support for backbone enterprises, small and medium-sized businesses	Launch of commercial e-cars production at the base of OJSC "Kami-Motors"	Development and production of the first e-cars in the Kyrgyz Republic. Job creation (from 40 to 100 jobs), increase in state budget revenues	Ministry of Economy and Commerce (MEC), Agency for Innovation and Development (AID)	III–IV quarter 2022	Private investment
IV. Economic priorities of the Government of the Kyrgyz Republic						
4.1 Green economy development						
Green transport						
441	Switching to environmentally friendly fuels and combating harmful exhaust gases	Working with the EEC on the extension until 2025 of the import of new EVs without import customs duties	Increase in the number of EVs and e-charging stations	MEC	II quarter. 2022	Within the state budget
442		VAT exemption for imported e-charging stations and their spare parts (components)			III quarter	
443	Transfer of the existing state vehicle fleet to electric transport	Development of a draft program for the transfer of the state vehicle fleet to EVs (pilot project)	Implementation of electric transport in the state vehicle fleet	MEC	I-III quarter 2022	Within the state budget
444		Development of a draft Program for the creation of a network of high-speed e-charging stations (charging infrastructure) in the territory of the Kyrgyz Republic	Creation of charging infrastructure in the Kyrgyz Republic, taking into account mountainous terrain and access to electric lines	MEC	I quarter 2023	Within the state budget

Waste management						
445	Reducing the generation of waste through the application of economic regulation measures in the field of handling goods subject to recycling, disposal	Elaboration of a mechanism for recycling batteries of EVs	Launch of the EV battery recycling mechanism	Ministry on Natural resources and technical supervision	I quarter 2023	Within the state budget and donor's funds

C. Road Transport Decarbonization Strategy

C.1. Liaison with stakeholders

8. Countries who have successfully implemented a Road Transport Decarbonization Strategy (e.g. UK, EU, Australia, New Zealand, India, China) have adopted a multi-sectoral/inter-governmental approach. For Kyrgyz Republic, these include:

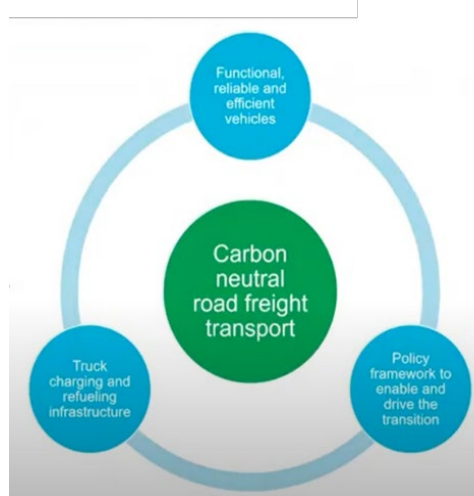
- Ministry of Environment (Commitments under Paris Agreement / NDC)
- Power Generation Agencies (for charging station connections)
- Ministry of Finance (Exemptions on VAT, Import Duty, Registration)
- Ministry of Foreign Affairs (Quotas for importing EVs, Foreign exchange)
- Private sector investors (Operating charging stations)
- Vehicle retailers (selling EVs)
- Local authorities (Land for charging stations)
- Communities (Acceptance of switch to public transport)

MOTC-Decarbonization Office will act as the Focal Point for this liaison.

C.2. Three Pillars Strategy for Road EVs

Although other forms of decarbonization may be considered, as most transport of goods and passengers in Kyrgyz Republic is by road, the strategy mainly focusses on travel by road and EVs although there are other aspects related to items such as construction and embedded carbon. The implementation of this approach will be based on “Three Pillars”:

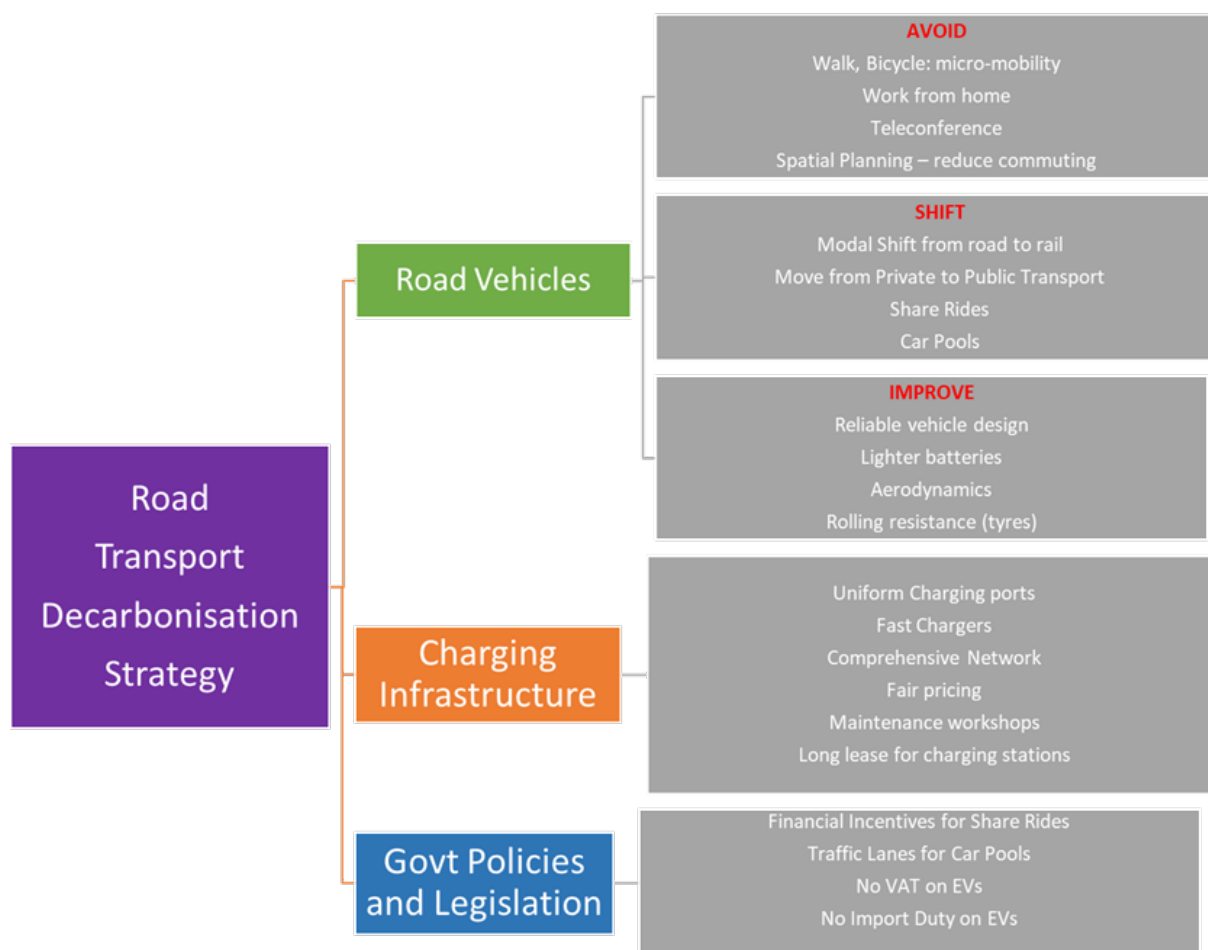
1. Functional reliable and efficient vehicles;
2. Extensive and reliable recharging infrastructure; and
3. Policy framework to enable and drive the transition to “green transport”.



Such an approach must be “**Place Based**” as it varies with location. Rural road transport may be more dominant than urban trips as rural trips are much longer than in a city, the vehicles

may emit more GHGs as they are heavy goods vehicles (HGV) and it may be harder to switch to other transport modes as there are less alternatives.

The technique of “avoid, shift, improve” can be applied to the three pillars of EV’s strategy.



C.3. Kyrgyz Republic Vehicle Fleet

9. At present the road transport fleet of Kyrgyz Republic is around 1.3 million vehicles. The composition is 1,103,445 light vehicles, about 170,000 goods vehicles and 50,000 buses. This includes 4,000 e-cars. New and second hand EVs can be imported from the EU under a quota system (i.e., 5,000 a year). These vehicles are exempt for import customs duty, VAT and registration fee. There are currently 50 EV charging stations, mainly in Bishkek, operated by private companies.

C.4. EVs Alignment with EU and Neighboring Countries

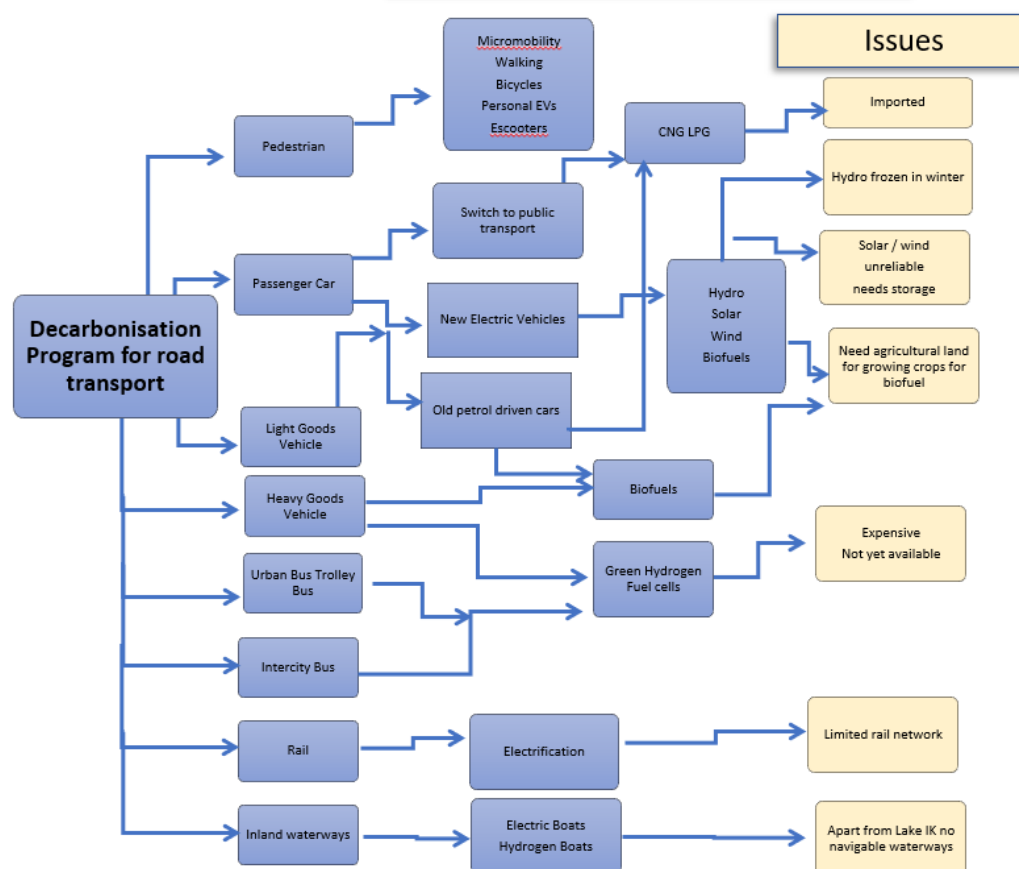
10. In June 2022 Council of the EU agreed to introduce a regulation stipulating that all cars sold from 2035 onwards must meet zero tailpipe emissions. As Kyrgyzstan imports EVs from the EU and China, any strategy must be aligned with this EU regulation and the global Net Zero scenario by 2050. Several neighboring countries in Central Asia have taken steps towards transport sector decarbonization. Initiatives in Kyrgyzstan should take cognizance of these.

C.5. Private Sector Involvement in EVs

11. The Ministry of Economy and Commerce together with Eurasia Industry (Liaoning) signed a Memorandum of Understanding and Cooperation in May 2023 to establish an assembly line of e-cars, open service centres for replacing batteries, and set-up charging stations. Eurasia Industry (Liaoning) will invest \$150 M in an EV production plant in Bishkek with an annual production capacity of 5,000 e-cars.

C.6. Fuel Alternatives

There are alternative fuel sources which can be considered in the future when hydroelectricity is limited in winter. These include solar, wind, LPG, LNG, biofuels, hydrogen, and ammonia. These can be evaluated using a decision tree analysis as shown below.



C.7. Road Ancillaries

The strategy must consider road transport ancillaries such as street lighting and road furniture such as traffic signs and traffic lights. Replacement with solar powered lights, LED bulbs and similar low carbon substitutions should be considered.

C.8. Embedded carbon in construction, operation and imported goods

12. Transport decarbonization is about far more than vehicle choice and modal mix. System-wide decarbonization is also about the carbon implications of transport infrastructure design, construction and operation. Minimizing embodied carbon in both infrastructure and vehicles must be tackled to achieve credible, comprehensive transport decarbonization, as is operational emission reduction across supply chains.

Imported materials produced by intensive use of fossil fuels such as coal burning power stations may contain high levels of “embedded carbon.” These must be accounted for in any carbon auditing procedure. Construction contracts for new road construction must be examined for the carbon footprint of transport vehicles and efforts made to minimize this. Embedded carbon in materials such as steel for reinforcing bars must be considered.

C.9. Paris Agreement

Any actions taken under this strategy must be demonstrated to be not inconsistent with the targets and objectives stated in the NDC as submitted under the Paris Agreement 2015.

D. Action Plans

The action plans for implementation of a road sector decarbonization strategy involves vehicles, infrastructure, policy and institutions. Details are given below.

Table 2: Draft Action Plan

Note: All figures and targets are indicative until formally reviewed and adopted by MOTC. Items with tbc or xxx are to be confirmed following further analysis.

No.	Tasks	Performance Measure	Baseline	Responsible agency	Target (tbc)	Estimate Cost (for physical works) & Financing source
Policy and Institutions						
P1	MOTC to establish interdepartmental Working Group on EVs.	Working group meeting at least quarterly	Baseline: no working group	MOTC	Established: Q1 2024 Meeting: Min 4 times per year	MOTC
P2	Develop new policies in relation to decarbonisation of the transport sector. Ensure all policies are consistent with National Dev Strategy 2018-40), and NDCs under Paris Agreement etc. Policies are developed and implemented in a considered timeline.	Percent of new transport policies reviewed by Working Group for consistency with decarbonisation policies.	Baseline: 0%	Working Group	2025: 100%	MOTC
P3	Acknowledge Target of Net Zero 2050. Lead by example. All government vehicles are to be EVs. Start with MOTC vehicles.	Proportion of MOTC vkt undertaken in EVs	Baseline: 0%	MOTC	2030: 30% 2040: 80% 2050: 100%	MOTC
P4	Reduce carbon emission from MOTC staff commute to work?	Proportion of staff travelling by private ICE vehicles to work	Baseline: tbc	MOTC	2030: 60% 2040: 5% 2050: 0%	
P5	Ensure power generators and distribution lines are able to support the power requirements for EVs	Percent of population without sufficient home power to enable transition to EVs	Baseline: tbc	MOTC	2030: 0%	

No.	Tasks	Performance Measure	Baseline	Responsible agency	Target (tbc)	Estimate Cost (for physical works) & Financing source
P6	Ensure Minorities are not excluded from transition to EVs	Ratio of uptake of EVs by minority groups, to overall population uptake of EVs	Baseline: tbc		0.9-1.1	
Infrastructure						
I1	Commit to extensive network of FAST charging stations	Proportion of vkt on national and state highways more than 100km from a charging station	Baseline: tbc		2030: tbc 2050: 100%	KGS\$xxx tbc
I2	Universal charging stations	All vehicles are able to be charged at all charging stations.	Baseline: tbc	Government to develop regulations.	2030: 100%	KGS\$xxx
I3	Ensure long term land lease for charging stations on public land	Land for charging stations issued with xxx year leases.	Baseline: Max of xxx years		2025: 10 years 2035: 20 years	Government
I4	Agree amount of Embedded Carbon that can be accepted in imported EVs and charging station components	Rules developed and in place to limit embedded carbon for EVs and supporting infrastructure.	No rules in place.	MOTC	2025: Rules in place	MOTC
I5	Promote Public Private Partnerships on ownership and operation of charging stations.	Proportion of charging stations owned in full or in part by private sector	Baseline: tbc		2030: 10% 2040: 50%	MOTC
I6	Clarify legal situation on selling electricity to vehicles	Legal position clarified and laws amended as required.		Working Group	Review by 31 Dec 2024 Law amendments (if required) by 31 Dec 2025.	
I7	Clarify technical issues on cabling and connectors					

No.	Tasks	Performance Measure	Baseline	Responsible agency	Target (tbc)	Estimate Cost (for physical works) & Financing source
I8	Climate Change Risk Assessments (CRVA) completed on all major infrastructure projects	Percent of projects with capital costs > US\$10m with CRVA completed	Baseline: tbc	MOTC	100%	
I9	Support new technology on pilot projects of Green Road approaches	Percent of annual works program aligned with Green Roads concepts	Baseline: 0%	MOTC	2030: 10% 2040:	
I10	Establish "Twinning" with other "Green" cities	Number of 'twinning' cities	Baseline: 0	MOTC	2025: 2 2030: 5	MOTC
I11	Remove all manual toll plazas and replace with free-speed automated systems	Number of manual toll plazas in operation.	Baseline: tbc	MOTC	2030: 0	KGS\$xx
I12	Recycle road materials (i.e. in-situ, or reuse old basecourse as new subbase materials etc)	Percent of materials recycled within the road sector	Baseline: tbc	MOTC	2030: 30% 2040: 90%	
I13	Eliminate roads in poor condition	Percent of vkt on roads in poor condition	Baseline: tbc	MOTC	2030: tbc 2040: 2%	
I14	Set limits on embedded carbon permissible in road construction and maintenance activities.	Maximum tonnes of CO2e per unit of different work types (construction, rehabilitation, resurfacing etc).	Baseline: tbc	MOTC	2025: 5% reduction on baseline 2030: 20% reduction on baseline.	
Vehicles						
V1	Focus on Government plan that by 2040 all new car sales will be EVs	Proportion of new car sales that are LZEVs	Baseline: tbc		2030: tbc 2040: 100%	

No.	Tasks	Performance Measure	Baseline	Responsible agency	Target (tbc)	Estimate Cost (for physical works) & Financing source
V2	Promote increase in vehicle fuel efficiency (Power to weight ratio – lighter batteries; more aerodynamic cars); new regulations on imports and sales	Average fuel economy of ICE vehicle fleet	Baseline: Deisel vehicles xxx L/100 km Petrol vehicles xxx L/100km		Year-on-Year reduction of xxx %	
V3	Public awareness campaign to raise awareness on EVs. Popular misconceptions are that EVs cannot go above 50km/hr and can only travel short distances.	Proportion of random survey of 100 motorists who correctly estimate the driving range of common EV models in use in Kyrgyz. Undertake publicity awareness campaign based on results of survey.	Baseline: tbc	MOTC	2025: 90% 2030: 95%	
V4	Establish links with vehicles retailers and distributors to obtain realistic prices for EVs in the future. This information must be circulated to buying public	MOTC to make available lifecycle cost comparison tool on their website to enable for public to compare costs of EVs vs ICE vehicles (including purchase and running costs).	Not in place	MOTC	Tool in place by June 2024. Data updated at least annually until EVs make up over 70% of new vehicle sales.	
V5	Negotiate with EU on quota of new and second hand EVS imported from EU	Number of annual vehicles	Baseline: 5000 per annum	MOTC to lead	2025: tbc 2030: tbc 2050: tbc	

No.	Tasks	Performance Measure	Baseline	Responsible agency	Target (tbc)	Estimate Cost (for physical works) & Financing source
V6	Obtain commitments from Ministry of Economy and Finance that EVs will be exempt from Import Duty, VAT and Vehicle Registration Fee for foreseeable future	Exemption and/or rebate in place for EVs	Not in place	MOTC / MoE&F	Exemption and/or rebate in place for EVs by 31 Dec 2024	
V7	Develop long term sustainable funding model considering loss of tax on gasoline sales and prevent it being recouped on EV sales	Sustainable funding model (transition from fuel tax to road user charges (or similar)) is in place	Not in place	MOTC	Plan in place by 31 Dec 2025. Amended charges implemented as per the Plan.	
V8	Aim to electrify as much as possible but consider long term green hydrogen production for use in HGVs (which is based on electrolysis so needs renewable energy)	Install hydrogen refill stations if/when this technology becomes commercially viable.	Not in place	MOTC	Review potential demand annually and act accordingly.	