# Dushanbe Green Taxi - Promoting E-mobility in the Tajikistan Capital City

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**Is the project a case of…:**

☐ State-initiated co-creation
☒ Entrepreneur-driven co-creation
☐ Grassroots-based co-creation*

**For an elaboration of the typology, please consult the GOGREEN theoretical framework p. 25.*

**Integrated case analysis**

Before proceeding to the scoring of the GFs, please provide a *3–5 page case analysis* in which you describe the background, history, and national, regional, and local contexts of the case, the problems and goals addressed by the local collaboration, the participating actors and their relationships, the unfolding of the co-creation process, the most important governance factors (this may include factors other than those in focus in this project), and the generated outputs and outcomes. The conclusion may specify a few lessons learned from the case study.

**1) Background, history, and national, regional, and local contexts of the case**

The Republic of Tajikistan is a landlocked country in Central Asia with a rapidly urbanizing population and an economy strongly dependent on remittances, hydropower, and agriculture. Dushanbe, the capital, concentrates more than 20% of the national population and has experienced rapid urban growth, accompanied by rising transport demand, congestion, and environmental stress. Road transport, particularly private vehicles and taxis, is one of the main sources of local air pollution and greenhouse gas (GHG) emissions, contributing significantly to urban air quality challenges and public health risks. PM2.5 concentrations in Dushanbe are among the highest in the region, with some measurements exceeding WHO guidelines by multiple times, highlighting the urgency of reducing transport emissions. Transport-related air pollution has major health and economic consequences, with pollution linked to thousands of premature deaths annually.

Tajikistan ratified the UNFCC in 1998 and the Paris Agreement in 2017. Since then, the country has gradually strengthened its climate governance framework, including the adoption of an updated Nationally Determined Contribution (NDC) and the State Program for the Development of Electric Transport (2023–2028), approved by government decree in 2022. The program explicitly promotes electric vehicle (EV) adoption, charging infrastructure, local production capacity, battery recycling technologies, and fiscal incentives, reflecting a national commitment to decarbonizing transport while leveraging abundant low-cost renewable hydropower. In 2024, Tajikistan developed an NDC Financing Plan to support implementation of the Paris Agreement, identifying priority investments to promote the uptake of zero-emission (ZE) and low-emission (LE) vehicles across markets and to scale supporting infrastructure, including charging stations. A key political constraint remains the absence of a formal carbon tax on fossil-

fuel vehicles; in practice, tax and customs exemptions have been used as the main instrument for market transformation, while additional regulatory incentives continue to be explored.

At the local level, Dushanbe faces acute environmental and mobility challenges. Road transport remains the dominant mode, moving the vast majority of passengers and freight, and contributing to emissions that adversely affect air quality. $CO_2$ emissions from vehicles are estimated at 340,000–540,000 tons annually, and PM2.5 and other pollutants impose severe health and economic costs. These pressures, together with rapid population growth and rising transport demand, have created a strong local imperative for sustainable mobility solutions.

The Green Taxi initiative emerged as a response to these challenges and evolved incrementally rather than through a single top-down decree. Before the electrification push, the city's taxi sector was dominated by ageing internal-combustion vehicles with high emissions and relatively poor service quality. Initial activity started around 2021–2022, when a small number of electric vehicles (EVs) were introduced by private operators, such as Yak Taxi, as early experiments. These early EVs, often distinctively painted green, demonstrated lower operational costs and improved passenger comfort, helping to build acceptance among drivers and urban authorities. In parallel, Dushanbe launched a pilot project for the operation of electric buses in 2021, marking one of the city's earliest practical steps toward electrifying public transport and generating operational lessons relevant for scaling up.

From 2022 to 2023, the initiative scaled up through cooperation between the Dushanbe City Administration, private taxi companies (Yak Taxi, Rakhsh Taxi, Atlas Taxi), domestic banks, and international partners such as EBRD and UNESCAP, linked to projects supporting electric mobility frameworks and pilots. During this period, a 10-year exemption on taxes and customs duties for electric vehicle imports was enacted by presidential decree, substantially lowering the cost barrier for EV adoption nationwide. The city's "Concept for the Transition to an Electric Passenger Transport System (2023–2026)" was approved, committing to a complete taxi transition. (Tajikistan News in English)

By 2024, substantial progress had been achieved in the electrification of Dushanbe's taxi fleet. More than 4,350 taxi vehicles were in operation, of which approximately 2,450 were fully electric, accounting for about 56% of the total fleet. The share of electric taxis increased markedly, from around 18% at the beginning of 2023 to over half of the fleet by mid-2024. This rapid growth has been accompanied by the expansion of supporting infrastructure, with approximately 136 charging stations reported in Dushanbe by mid-2024.

By 2024–2025, the initiative reached a deeper phase of implementation with large-scale procurement of electric taxi fleets, including Chinese-manufactured EVs under preferential tax and customs regimes, rapid deployment of charging infrastructure, and expansion of supporting policies under the national electric transport program. Official reports in 2025 noted that Dushanbe aimed to have all registered taxi services fully electrified by late 2025, aligning with national electric transport goals and reinforcing the city's role as a national frontrunner for transport decarbonisation.

At the national level, Tajikistan's NDC Financing Plan (2024) identified priority investments in ZE and LE vehicles and the necessary charging infrastructure. To accelerate the adoption of electric vehicles, the Government has implemented fiscal incentives for EV imports, notably tax and customs duty exemptions valid until 2032. While a formal carbon tax on fossil-fuel vehicles has not been established, fiscal incentives—particularly tax and customs exemptions—have been central to accelerating market uptake, with additional regulatory measures under consideration. According to the Customs Service under the

Government of the Republic, 17,695 electric vehicles were imported into the country in 2024, and more than 12,820 new electric vehicles were imported in the first five months of 2025 alone (Khovar, 2025).

As of June 2024, Dushanbe has 136 operational electric vehicle (EV) charging stations. In addition, within the framework of Smart City initiatives, 70 new charging stations have been commissioned, with a combined capacity to simultaneously serve approximately 140 vehicles. Plans to install more than 500 charging stations citywide are currently under implementation. These developments indicate measurable progress in the electrification of the capital's taxi fleet. Nevertheless, the existing infrastructure remains insufficient to fully support the entire fleet, particularly in relation to long-distance and high-demand travel patterns.

Despite recent investments, the spatial distribution of charging infrastructure across the urban network remains uneven. There is a pronounced need for additional fast-charging stations in residential areas and along major transport corridors to ensure operational efficiency and reduce range anxiety. Moreover, access to preferential financial instruments for taxi operators transitioning to electric vehicles remains limited. Bank lending and leasing mechanisms with affordable terms are only beginning to emerge, constraining the pace of fleet conversion. The sector also faces a shortage of qualified technical personnel for the maintenance and servicing of electric vehicles and charging infrastructure, which poses a further barrier to sustainable system expansion.

According to the Ministry of Finance of the Republic of Tajikistan, approximately 230 million somoni (around USD 21 million) are planned for investment in the development of electric transport nationwide over the next five years. The projected financing structure includes:

a) approximately 1.4 million somoni from the state budget,
b) around 6.2 million somoni from international partners, and
c) about 221 million somoni from the private sector.

The planned investment framework is therefore heavily reliant on private capital and international support, while direct government financing remains comparatively limited. This financing structure may restrict the speed and coherence of infrastructure development, workforce capacity building, and service provision, underscoring the need for a more balanced public–private investment approach and targeted policy support.

Looking ahead, by 2030 Dushanbe plans to dramatically expand sustainable mobility by increasing the share of electric transport from approximately 25% to 60%. This will be supported by the purchase of 300 electric buses for eco-friendly public transport, the construction of 120 km of bicycle lanes and pedestrian zones to improve mobility and public health, and the adaptation of 60% of roads to better withstand climate and disaster risks. Projected impacts include a 20% reduction in traffic congestion, a 15–20 minute reduction in average travel times, a 40% increase in public transport ridership due to improved service quality, a 20–25% decrease in transport-related PM2.5 and $CO_2$ emissions, and a 50% reduction in weather-related accidents. These forward-looking targets illustrate the alignment of local action with national and international climate and sustainable development commitments.

**2) The aims of the project and the sustainability problems that it seeks to address**

The Green Taxi initiative aims to reduce GHG and pollutant emissions in urban transport, modernize public and commercial vehicle fleets, utilize Tajikistan's renewable hydropower capacity to power electric vehicles, improve public health by reducing exposure to air pollution, and align urban transport transformation with SDGs 7, 11, 12, and 13. The sustainability problems addressed include severe urban

air pollution and associated health risks, high GHG emissions from gasoline and diesel vehicles, energy insecurity driven by dependence on oil imports, and inadequate public transport infrastructure.

**3) The participants and their interaction and communication in and between meetings**

Key participants include public-sector actors such as the Dushanbe City Administration and relevant ministries responsible for transport, environment, and industry; private-sector actors such as Yak Taxi, Rakhsh Taxi, Atlas Taxi, Alif Bank, Eskhata Bank, and Barqi Tojik as the national electricity utility; international actors such as the EBRD, UNESCAP, BAIC (China), and the Korea National Railway; and development partners including GEF and FINTECC. Participants interact through city-level coordination meetings, national steering groups supporting electric transport strategy, donor workshops, and public–private partnership forums. Communication is regular and structured and is often facilitated by the Dushanbe City Administration or international partners.

**4) How often do they meet, and do they communicate between meetings?**

Project actors meet regularly through formal city planning sessions and multi-stakeholder workshops, including GCAP forums and donor coordination events. These meetings provide structured spaces for strategic planning, alignment of priorities, and joint decision-making among public authorities, development partners, and private-sector stakeholders. International partners also engage through periodic technical missions and monitoring visits to support implementation, provide expertise, and assess progress. Between formal meetings, communication continues through institutional working groups, bilateral coordination, and dedicated implementation teams, particularly for charging infrastructure rollout and vehicle delivery. Coordination takes place at two levels: donor and partner coordination with the Government and relevant ministries and committees, including tax, customs, environmental, and electricity bodies; and city-level coordination led by the Dushanbe Mayor's Office with key local institutions such as banks, taxi companies, electricity suppliers, and other businesses involved in implementation.

**5) The role and forms of knowledge sharing, coordination and joint problem-solving**

Knowledge sharing has been an enabling feature of the initiative and includes technical expertise from the EBRD, UNESCAP, and Korean partners, operational insights from taxi companies, and financial modelling by local banks and fintech actors. The Korea National Railway (KNR) contributed technical expertise and advisory support related to electric transport systems, capacity building, and integrated mobility planning, drawing on Korea's experience in large-scale transport electrification. KNR does not operate taxis or urban rail in Dushanbe directly; its role is technical, advisory, and capacity-building, linked to Korea's international cooperation in sustainable transport, and it is currently involved in the construction of the Dushanbe Metro. KNR's engagement has included sharing experience on electric mobility systems, electrification planning, and operations and maintenance models for electric fleets through feasibility studies, technical consultations, and pilot support, particularly where electric buses, trolleybuses, and supporting infrastructure intersect with broader urban transport systems. Its involvement has also supported integrated transport planning by helping the city align EV taxis, electric buses, and trolleybuses into a coherent urban mobility system and match fleet electrification with power supply reliability and charging logistics, consistent with GCAP's emphasis on systems thinking. Capacity building has been supported through participation in training activities and study visits coordinated with UNESCAP or Korean development cooperation programs, focused on institutional learning rather than ownership or financing.

A key private-sector role in the taxi electrification effort has been played by BAIC Group, a major Chinese automaker. In July 2024, BAIC delivered an initial batch of EU5 electric vehicles to Dushanbe as part of an approximately 1,000-unit order for use as city taxis. The handover, conducted in coordination with Dushanbe authorities and local taxi operators, brought modern, energy-efficient EVs into the taxi fleet and

demonstrated commercial supply chain support for the city's electrification goals, aligning with broader Belt and Road Initiative green transport cooperation. AIC's role has included serving as a manufacturer and major supplier of electric taxis, with the first batch ceremonially handed over in July 2024 as a substantive milestone in the city's taxi electrification effort. The collaboration is embedded in wider Tajikistan–China cooperation under the Belt and Road Initiative, including support for sustainable transport infrastructure and technology transfer, and BAIC leadership publicly emphasized the company's commitment to advancing green mobility and contributing to Tajikistan's sustainable development goals. (baicglobal.com) The BAIC EU5 vehicles are positioned as eco-friendly and energy-efficient electric taxis for urban operations and have been associated with intelligent driving and battery technologies, including demonstrations of battery swapping technologies that may offer operational advantages for taxi use. (baicglobal.com) The vehicles were integrated into the taxi ecosystem through direct handover to local taxi company management, supporting fleet modernization and the municipal goal of reducing emissions from taxis. (Automotive Leaders N)

Coordination is facilitated by public authorities and strengthened through joint action plans, including the city's 2023–2026 EV roadmap and the national 2023–2028 transport strategy. Joint problem-solving has occurred through collaborative policy design, including tax incentives; coordinated infrastructure deployment, particularly charging station rollout; and the development of loan products tailored to affordability constraints faced by drivers and fleet operators.

**6) The relation between consensus and conflict and the handling of the latter**

There is a strong orientation toward consensus, fostered by shared interests in cleaner air, public health, and modern infrastructure. At the same time, tensions have emerged, especially around affordability and financing for taxi drivers, given the high upfront cost of electric vehicles. These challenges have been handled constructively through policy adaptation and negotiation: the Government introduced tax exemptions and encouraged cheaper EV imports, banks developed tailored car loan products, and stakeholders coordinated to reduce purchase and ownership costs. The prevailing approach has emphasized problem-solving and adjustment rather than confrontation.

**7) The role and form of leadership: lead actor, steering group and/or collective leadership**

Leadership is distributed but facilitative, with authority and responsibility shared across multiple actors rather than centralized in a single institution. The Dushanbe City Administration serves as the lead public actor at the local level, providing governance and planning, convening stakeholders, integrating the Green Taxi initiative into urban mobility strategies, and enabling implementation through permitting, infrastructure facilitation, and alignment across transport, energy, and environmental policies. National steering is provided by the Ministries of Transport, Industry and Innovation, and Environment, together with Barqi Tojik, through the development of national strategies, the embedding of local initiatives within Tajikistan's NDC and climate commitments, and the design and coordination of fiscal and regulatory incentives, including tax and customs exemptions, while monitoring progress toward national targets. International coordination is provided by the EBRD, notably through the Green Cities Action Plan, and by UNESCAP through pilot activities and capacity building, with both institutions mobilising finance, technical expertise, and international best practices without leading implementation directly. Overall, leadership is characterised by collective ownership of goals, with the city acting as a convener and broker of knowledge, finance, and infrastructure support, enabling rapid scaling while maintaining alignment with national and international climate objectives. There is collective ownership over goals, with the city acting as a convener and broker of knowledge, finance, and infrastructure support.

**8) The temporal unfolding of the co-creation process: major shifts and ups and downs**

The co-creation process unfolded through an iterative sequence of pilots, policy strengthening, and rapid scaling. In 2021, Dushanbe launched a pilot project for the operation of electric buses, allowing stakeholders to test vehicle performance, charging requirements, and operational routines and to generate early lessons for broader electrification. In 2022, Yak Taxi introduced EVs, and the EBRD initiated financing support, building momentum by demonstrating economic and environmental benefits while signalling international confidence in the city's green transport ambitions. In 2023, national and city-wide electrification strategies were launched, and a 10-year tax exemption law for electric vehicles was passed, reducing barriers and marking a turning point from experimentation to coordinated, policy-backed implementation. In 2024, deployment accelerated with over 2,450 EVs and 136 chargers installed, the delivery of 1,000 BAIC EVs for taxi operations, and the launch of UNESCAP-supported pilot activities focused on electric bus integration and operational management. In 2025, full electrification of the registered taxi fleet was completed, positioning Dushanbe as one of the first capitals in Central Asia to operate 100% electric taxis. From 2025 onward, Tajikistan introduced incentives for entrepreneurs importing electric vehicles through 2032, including exemptions from customs duties, taxes, and excise duties, to sustain uptake and support replication beyond the capital.

**9) The most important governance factors (may include factors other than those in focus in this project)**
Key governance enablers include facilitative leadership from public and private sectors, blended financing that reduced risk and enabled investment, institutional platforms such as GCAP and national programmes that created continuity and strategic coherence, policy alignment with national and international climate goals that strengthened legitimacy and unlocked finance, and narratives of co-benefits including health, energy security, and modernization that supported acceptance and momentum. Facilitative leadership enabled cooperation among actors with different mandates by focusing on coordination, problem-solving, and barrier removal rather than direct control, accelerating implementation during the scaling-up phase. Blended financing mechanisms addressed high upfront costs of vehicles and charging infrastructure, improved loan affordability, expanded access to credit, and enabled rapid fleet turnover, making full electrification of taxis feasible within a short timeframe. Institutional platforms provided structured spaces for coordination, learning, and investment prioritisation, embedding the initiative within longer-term policy frameworks and reducing fragmentation. Alignment with Tajikistan's NDC, the Paris Agreement, and national electrification strategies reduced policy uncertainty for private actors, increased political support, and facilitated access to international finance and technical assistance. Co-benefit narratives broadened support among drivers, passengers, policymakers, and the public by emphasising near-term, tangible gains beyond climate mitigation alone.

Mapping these factors to results shows that facilitative leadership directly supported rapid coordination and the achievement of full electrification of the registered taxi fleet by 2025; blended financing supported affordability and accelerated vehicle replacement, enabling the deployment of thousands of EVs; institutional platforms strengthened strategic coherence and scalability from pilots to full-sector transformation; policy alignment increased legitimacy and helped mobilise long-term investment in fleets and infrastructure; and co-benefit narratives supported public acceptance and sustained momentum, reinforcing improvements in service quality and perceptions of the taxi sector.

**10) The generated outputs and outcomes**
Outputs include the deployment of over 4,350 EV taxis, which now constitute 100 percent of the rental transport fleet; the installation of 353 public charging stations; the creation of multiple new loan products; and the development of EV policy and infrastructure plans. The number of electric buses in the city has reached 60 and electric trolleybuses 120, bus and trolleybus routes have expanded to 32, and 39 traffic control points have been upgraded with new technology. Dushanbe also plans to replace 500 diesel buses with electric buses by 2028. Outcomes include an estimated annual $CO_2$ reduction of 1,240 tons,

reductions in air pollutants such as $NO_2$ and $SO_2$, improved public image and service quality of the taxi sector, and strengthened public–private coordination mechanisms.

**11) Lessons learned about the conditions for co-creating green solutions**

The case demonstrates that blended financing and clear government support, including tax incentives, are critical enablers of rapid transition, especially where upfront costs would otherwise exclude key implementers such as drivers and small operators. It shows that leadership must be facilitative and multi-scalar, spanning local, national, and international actors, because no single institution can resolve the combined regulatory, financial, technical, and operational challenges alone. It confirms that shared framing around public benefits—particularly health, energy security, and modernization—boosts motivation and commitment and helps maintain momentum during periods of adjustment. It also highlights that driver inclusion in financing mechanisms is vital and that affordability must be addressed early to prevent resistance and ensure equitable uptake. Finally, the experience underlines the importance of institutional continuity and trust for scaling and replication, as well as the value of incremental implementation and visible quick wins, such as early EV rollouts, to build confidence, attract partners, and create positive feedback loops that sustain further expansion.

a) **Early implementation functioned as informal real-world testing.** The initial deployment of electric taxis by Yak Taxi and the gradual expansion of the fleet operated as de facto prototyping. Technical performance, driver acceptance, and passenger response were observed through everyday operations rather than through formally designed pilot evaluation frameworks.
b) **Adaptation occurred primarily through operational learning, and not design iteration.** Adjustments to charging infrastructure rollout, financing terms, and vehicle procurement were made in response to observed operational constraints and market uptake. These adaptations reflect learning-by-doing, but they were not organised as iterative design cycles with predefined feedback loops or alternative design options.
c) **Driver experience influenced policy adjustments indirectly.** Challenges faced by taxi drivers—particularly affordability, access to credit, and operational costs—were gradually reflected in policy and financial responses, such as tax exemptions and tailored loan products. However, this influence occurred indirectly through market behaviour and stakeholder mediation rather than direct engagement with driver groups.
d) **System-level decisions limited scope for experimentation.** The city-wide mandate for full taxi electrification by 2025 prioritised speed and scale over experimentation. Once this decision was taken, opportunities for parallel testing of alternative models, service designs, or user-tailored solutions were limited.

**Scoring and analysis of governance factors**

**1. Perceived importance of biosphere conditions**

| QCA score: | Scoring confidence: | Data sources: |
|---|---|---|
| ☐ 0 | ☐ Low confidence | ☒ Interviews |
| ☐ 0.33 | ☐ Medium confidence | ☒ Documents |
| ☐ 0.66 | ☒ High confidence | ☒ Observations |
| ☒ 1 | | |

Please elaborate on the reasoning behind your scoring for this governance factor:

Actors involved in the Dushanbe Green Taxi initiative drew heavily on shared perceptions of deteriorating biosphere conditions to justify, prioritise, and initiate the collaborative problem-solving process. A set of well-documented environmental and public-health indicators served as powerful motivational drivers**,** shaping both political commitment and stakeholder alignment.

**Key environmental indicators motivating action include:**

a) **High levels of air pollution and health impacts:** Average annual PM2.5 concentrations in Tajikistan reach approximately 35.9 µg/m³**,** placing the country among the most polluted in Central Asia and far exceeding the World Health Organization guideline value of 5 µg/m³**.** In 2019 alone, air pollution was linked to over 4,000 premature deaths**,** with vehicle exhaust identified as a major contributor in urban areas such as Dushanbe. These health impacts provided a compelling public-interest rationale for targeting the taxi fleet as a priority intervention point

b) **GHG emissions from the transport sector:** Road transport accounts for roughly 23% of fuel-combustion-related GHG emissions in Tajikistan. In Dushanbe, commercial vehicles—including taxis—are projected to contribute more than 50% of transport-related emissions by 2030, with annual emissions expected to reach approximately 850,000 $tCO_2$. These projections underscored the urgency of addressing high-usage vehicle segments through electrification.

c) **Rapid growth in vehicle emissions:** $CO_2$ emissions from road vehicles have more than doubled over the past decade**,** currently estimated at 340,000–540,000 tonnes per year. This sharp upward trend reinforced perceptions that incremental efficiency improvements would be insufficient, strengthening the case for systemic change through e-mobility.

d) **Policy commitments and national climate vulnerability:** Tajikistan has consistently framed itself as highly vulnerable to climate change impacts, including glacier retreat, water stress, and extreme weather events. This narrative is reinforced through ratification of major international climate agreements and through multiple National Communications and an updated Nationally Determined Contribution. The NDC includes explicit targets to reduce per capita emissions to approximately 1.9–2.2 $tCO_2eq$ by 2030 under the unconditional scenario, lending policy legitimacy to mitigation efforts in the transport sector.

e) **Hydropower capacity as an enabling factor:** With around 95% of electricity generation derived from hydropower, Tajikistan has a uniquely low-carbon power mix. Stakeholders consistently highlighted that electrifying transport—particularly high-mileage taxis—would deliver immediate emissions reductions while capitalising on abundant, domestically available clean energy. This strengthened the environmental credibility and economic logic of the Green Taxi initiative.

These environmental concerns were explicitly linked to the initiation of the Dushanbe Green Taxi initiative and later used to justify its expansion into broader e-mobility programs. Public authorities, private taxi operators, utilities, and international institutions converged around a shared understanding that urban air pollution and climate-related risks required urgent, coordinated intervention**.** As a result, the project was framed not only as a transport modernisation effort, but as a multi-benefit solution aimed at reducing GHG emissions, lowering air-pollution-related health burdens, and promoting the strategic use of Tajikistan's clean energy potential.

**2. Legislation, programs, and formal goals**

| QCA score: | Scoring confidence: | Data sources: |
|---|---|---|
| ☐ 0 | ☐ Low confidence | ☒ Interviews |
| ☐ 0.33 | ☒ Medium confidence | ☒ Documents |
| ☐ 0.66 | ☐ High confidence | ☒ Observations |
| ☒ 1 | | |

Please elaborate on the reasoning behind your scoring for this governance factor:

National and international legislation, formal strategies, and policy programs have strongly supported and enabled the collaborative problem-solving process underpinning the Dushanbe Green Taxi initiative. Together, these frameworks created a clear, coherent, and enabling policy environment that motivated stakeholder engagement, reduced regulatory uncertainty, and guided coordinated action, while also setting ambitious and binding sustainability objectives at both national and municipal levels.

**Positive effects observed:**

**a) Formal climate commitments at the international level:** Tajikistan has ratified the United Nations Framework Convention on Climate Change (1998), the Kyoto Protocol (2008), and the Paris Agreement (2017), positioning itself as an active participant in international climate governance. These commitments established long-term decarbonisation expectations, strengthened international accountability, and created external pressure to address GHG emissions and urban air pollution—particularly from the transport sector, which is a major contributor in Dushanbe.

**b) Nationally Determined Contributions (NDCs):** Tajikistan submitted its first INDC in 2015 and an updated NDC in 2021, introducing clear unconditional and conditional emission-reduction targets for 2030. These include limiting national emissions to approximately 21.32–24.87 million $tCO_2eq$ under the unconditional scenario, with deeper reductions contingent on international support. Urban transport electrification, including taxis, is explicitly relevant to achieving these targets, providing a strong policy justification for the Dushanbe Green Taxi initiative.

**c) Electric Transport Development Program (2023–2028):** This national program provides a structured roadmap for scaling e-mobility across the country and directly underpins the Dushanbe Green Taxi initiative through:

**d) Legal and technical reforms to support EV deployment**

1) Development of battery reuse and recycling systems
2) Expansion of charging infrastructure (target: over 850 charging units nationwide)
3) Support for domestic assembly and production of electric vehicles
4) Preferential tax, customs, and land-use policies for EV-related investments

e) **Tax and customs exemptions for EVs:** Introduced by Presidential Decree in 2021 and formalised through legislative amendments in 2022, this incentive framework exempts electric cars, buses, and trolleybuses from import taxes and customs duties for up to 10 years. For the Dushanbe Green Taxi initiative, this significantly reduced upfront costs for operators, improved the business case for taxi electrification, and sent a strong signal of long-term government commitment to e-mobility.

f) **Local-level formal goals and municipal leadership:** The Dushanbe Mayor's Decree No. 308 (June 2023) approved the "Concept for Transition to Electric Transport (2023–2026)" alongside the city's "Electric Transport Development Plan (2022–2028)." These documents establish concrete and time-bound targets, including:

1) Replacement of approximately 500 diesel buses with electric alternatives
2) Full electrification of the taxi fleet by 1 September 2025
3) Priority deployment of charging infrastructure in high-demand urban zones This strong municipal mandate played a critical role in mobilising taxi companies, utilities, and development partners around a shared vision.

g) **Alignment with the EBRD Green Cities Action Plan (GCAP):** Dushanbe's participation in the EBRD Green Cities programme embedded the Green Taxi initiative within a broader, integrated urban sustainability framework. This alignment enabled access to concessional finance, international technical assistance, and peer learning from other Green Cities, strengthening both implementation capacity and institutional coordination.

No major negative effects were identified. However, despite the highly enabling policy environment, several implementation challenges remain:

a) Limited access to affordable financing and leasing mechanisms for individual taxi drivers and small operators
b) Remaining regulatory gaps related to end-of-life battery management and hazardous waste handling (currently under development)
c) Capacity constraints for domestic EV assembly and component supply chains
d) Need for continued skills development for EV maintenance and charging-infrastructure management

Despite these challenges, the overall legislative and policy framework has been strongly enabling, fostering collaboration between national and municipal authorities, private taxi operators, utilities, and international development partners. This policy coherence has been a key factor in advancing co-created green transitions under the Dushanbe Green Taxi initiative.

**3. Relative openness of public governance paradigms**

| QCA score: | Scoring confidence: | Data sources: |
|---|---|---|
| ☐ 0 | ☐ Low confidence | ☒ Interviews |
| ☐ 0.33 | ☐ Medium confidence | ☒ Documents |
| ☒ 0.66 | ☒ High confidence | ☒ Observations |
| ☐ 1 | | |

Please elaborate on the reasoning behind your scoring for this governance factor:

The bureaucratic apparatus in Tajikistan—particularly at the municipal level in Dushanbe—demonstrates a moderately high degree of openness to collaborative problem-solving. This openness is driven by a combination of national policy mandates and proactive local policy innovation. In the context of the Dushanbe Green Taxi initiative, municipal authorities have increasingly acted as facilitators, translating national priorities into concrete local action while engaging a broad range of public and private stakeholders.

**Enabling mechanisms at the local-government level include:**

a) **Decentralized initiative by Dushanbe authorities:** The Dushanbe City Administration issued a formal directive in June 2023 (Decree No. 308) mandating the full transition of taxi companies to electric vehicles by September 2025. This directive illustrates strong municipal-level leadership and the use of local legal authority to set, implement, and enforce sustainability targets at the city level.
b) **Local planning and policy formulation:** The city adopted a dedicated "Concept to Transition Public Transport to Electric (2023–2026)" alongside an Electric Mobility Action Plan (2022–2028)**.** These instruments define phased implementation steps, infrastructure priorities, and stakeholder responsibilities, demonstrating that Dushanbe has both institutional capacity and strategic planning capability to manage a complex, multi-actor transition in the urban transport sector.
c) **Public–private coordination mechanisms:** Municipal governance actors, including the mayor's office and public transport regulators, have actively cooperated with private taxi operators (such as Yak Taxi, Rakhsh, and Atlas), national utilities, foreign investors, and development banks. This willingness to coordinate across sectors signals a shift away from purely top-down governance and reflects an emerging culture of shared problem-solving and co-delivery.

d) **Infrastructure and permitting processes:** Local authorities have taken practical steps to streamline bureaucratic procedures related to land allocation, licensing, and construction permits for EV charging infrastructure. Consistent with provisions reflected in the Electric Transport Development Program, fast-tracked permitting processes for charging stations have reduced administrative bottlenecks and enabled more timely implementation of the Green Taxi initiative.

**However, some structural constraints remain:**

a) **Limited financial decentralization:** Despite increased municipal autonomy in planning and coordination, most capital-intensive investments still depend on central government budgets, international financial institutions, and development partners. This limits municipal fiscal independence and constrains the speed and scale at which locally initiated projects can be expanded or replicated.
b) **Need for stronger institutionalization of local participation:** While Dushanbe's municipal leadership has demonstrated openness to private-sector engagement, formal mechanisms for systematic involvement of citizens, civil society organisations, or taxi driver associations remain limited. This suggests that participatory governance exists in practice but is not yet fully embedded through predictable, institutionalized channels.
c) **Uneven capacity across cities:** Replication of the Dushanbe model in other urban centres, such as Khujand or Khorugh, remains heavily dependent on national-level facilitation and external support. This indicates that bureaucratic openness, institutional readiness, and administrative capacity vary significantly across localities and are not yet evenly institutionalised within the broader governance framework.

**Dependence on national-level facilitation for local success and inter-city system integration.** Although the Green Taxi initiative was implemented in Dushanbe, its success did not rest on municipal action alone. The transition depended heavily on national policies, tax incentives, and coordination with international partners, particularly in areas outside municipal control, such as vehicle import regulations and power-sector governance. Electric taxis in Dushanbe rely on the national power grid that also supplies other cities, meaning that reliable electricity generation and distribution are shared, countrywide concerns. The experience therefore demonstrates that even in the capital, local innovation requires sustained national support and coordination across transport and energy systems, and that similar initiatives elsewhere would require comparable multi-level cooperation over time.

Overall, Tajikistan's public governance paradigm is increasingly open at the urban level, particularly in Dushanbe, where municipal administrative actors appear both empowered and motivated to lead sustainability transitions. Furthermore, while central authorities continue to play a decisive role in strategic direction and financing, municipal actors have demonstrated growing capacity and willingness to orchestrate collaborative processes. Nonetheless, apart from creating the space for collaboration, the public governance paradigm has thus not actively enabled collaborative processes in any substantive ways.

**4. Formalized institutional channels for citizen participation and community mobilization**

| QCA score: | Scoring confidence: | Data sources: |
|---|---|---|
| ☐ 0 | ☐ Low confidence | ☒ Interviews |
| ☒ 0.33 | ☒ Medium confidence | ☒ Documents |
| ☐ 0.66 | ☐ High confidence | ☒ Observations |
| ☐ 1 | | |

Please elaborate on the reasoning behind your scoring for this governance factor:

The Dushanbe Green Taxi initiative reflects a predominantly top-down governance approach, characterised by strong governmental leadership and targeted engagement of private-sector actors, but limited formalised institutional structures for direct lay citizen participation in decision-making and governance.

**Evidence of partial availability of institutional channels for community involvement, including:**

a) **Public visibility and service integration:** Citizens are indirectly involved as service users, with more than 30 million passenger trips made by taxis in Dushanbe annually. The progressive rollout of electric taxis—approximately 2,450 out of 4,350 vehicles by mid-2024—alongside visible green branding (e.g. green-painted EVs) serves to normalise the transition, signal policy direction, and build passive public awareness and acceptance.
b) **Citizen benefits and co-benefits:** The transition to electric taxis has been framed primarily around public-interest outcomes, particularly improved urban air quality and reduced exposure to pollutants such as PM2.5, which are linked to cardiovascular and respiratory diseases. These health and environmental co-benefits contribute to public buy-in and social legitimacy, even though they are not generated through structured participatory processes.
c) **Digital interaction and consumer choice:** Taxi companies such as Yak Taxi introduced digital application features that allow passengers to select electric vehicles when booking rides. This creates a limited channel for individual agency and preference expression, using market-based mechanisms to influence behaviour, rather than institutionalised civic participation or deliberative forums.

**However, the case also highlights several structural gaps:**

a) There is no evidence of codified or legally mandated mechanisms for direct citizen participation—such as public consultations, participatory budgeting, or citizen advisory councils—in the design, implementation, or governance of the initiative.
b) The policy formulation process, including the city's 2023–2026 electrification concept and national electric transport programs, appears to have been conducted primarily at the governmental and institutional level, with input from ministries, municipal authorities, financial institutions, and international partners, rather than from grassroots organisations or lay actors.
c) The role of civil society organisations, community groups, or citizen networks is not documented in the available case material, suggesting that organised civic engagement and community mobilisation have not yet played a significant formalised role in shaping the initiative.

While the Dushanbe Green Taxi initiative delivers clear and tangible benefits for citizens and builds public support through service visibility, health improvements, and improved air quality, the absence of formal, institutionalised channels for citizen involvement in problem definition, decision-making, and solution design points to a limited degree of participatory governance. This assessment indicates the limited presence of indirect and outcome-based support for citizen involvement, but patchy and incosnsistent formal structures or guarantees for lay actor participation.

**5. Mechanism for ensuring top-down government and bottom-up social accountability**

| QCA score: | Scoring confidence: | Data sources: |
|---|---|---|
| ☐ 0 | ☐ Low confidence | ☒ Interviews |
| ☐ 0.33 | ☒ Medium confidence | ☒ Documents |
| ☒ 0.66 | ☐ High confidence | ☒ Observations |
| ☐ 1 | | |

Please elaborate on the reasoning behind your scoring for this governance factor:

The Dushanbe Green Taxi initiative exhibits strong top-down (upward) accountability mechanisms, complemented by moderate but gradually strengthening forms of downward accountability toward citizens and service users.

**Top-down (upward) accountability mechanisms:**

a) **Formal government oversight and policy mandates:** The initiative is firmly anchored in national legislation, presidential decrees, and municipal policy instruments, including the 2023–2026 Dushanbe electrification concept and the Electric Transport Development Program (2023–2028). These frameworks clearly define institutional responsibilities across ministries, municipal authorities, regulators, and private taxi operators, creating well-established vertical lines of accountability.

b) **Donor and investment accountability:** With financial support from international development finance institutions, notably through investments linked to the Green Cities framework, the initiative is subject to stringent financial, environmental, and performance monitoring requirements. For example, investments supporting fleet electrification and charging infrastructure deployment are accompanied by reporting obligations aligned with green finance and results-based monitoring criteria.

c) **Inter-ministerial coordination and public–private agreements:** Formal coordination mechanisms between national ministries, municipal authorities, utilities, and private operators reinforce compliance with national climate targets, including those embedded in Nationally Determined Contributions and broader international climate commitments. These arrangements further strengthen upward accountability by linking local implementation to national and international obligations.

**Bottom-up (downward) accountability mechanisms:**

a) **User experience feedback (informal):** While no formal civic oversight bodies exist, customer-oriented service innovations—such as mobile applications allowing passengers to select electric vehicles—provide indirect channels for user feedback and preference expression. These mechanisms enable limited responsiveness to user expectations without constituting institutionalised accountability.

b) **Market-based accountability:** Taxi operators operate in a competitive environment and are therefore accountable to users through service quality, pricing, and reliability, while simultaneously responding to regulatory deadlines such as the mandated transition to fully electric fleets by 2025. This dual pressure creates a form of downward accountability mediated through market dynamics rather than public deliberation.

c) **Public health and air-quality framing as accountability drivers:** Government actors consistently justify the initiative through expected public benefits, including reductions in greenhouse gas emissions and improvements in urban air quality. Public communication of anticipated outcomes—such as significant annual $CO_2$ reductions and health co-benefits—creates informal downward accountability, as failure to deliver these outcomes would risk reputational and political credibility.

**Interplay between upward and downward accountability:**

National and municipal authorities function simultaneously as enablers and enforcers of the transition, holding taxi operators accountable through binding mandates, deadlines, and compliance requirements. In turn, private operators are accountable to both:

a) **Authorities (upward):** to meet fleet electrification targets, infrastructure deployment obligations, and reporting requirements; and
b) **Consumers (downward):** to provide affordable, reliable, and clean transport services that meet user expectations.

There is no evidence of institutionalised participatory oversight mechanisms, such as citizen audits, public monitoring committees, or user advisory boards, which constrains the depth of downward accountability. Due to the lack of concrete mechanisms linking the project to the broader political systems, these accountability mechanisms do not discernibly affect the collaborative processes in any consistent manner. Overall, the Dushanbe Green Taxi initiative demonstrates robust upward accountability driven by government mandates and donor conditionalities, alongside moderate but evolving downward accountability that is largely informal and market-based rather than institutionalised. The interaction between these accountability dimensions is dynamic and mutually reinforcing, particularly where regulatory compliance, reputational incentives, and service performance align. However, the lack of institutionalization makes its effect patchy and thus does not consistently enable collaboration. The feedback mechanisms of accountability also do not always translate effectively to improved collaboration due to their inconsistency.This assessment reflects significant features of institutionalised upward accountability and moderate, developing forms of downward accountability.

**6. Strategic agenda-setting by means of translation**

| QCA score: | Scoring confidence: | Data sources: |
|---|---|---|
| ☐ 0 | ☐ Low confidence | ☒ Interviews |
| ☐ 0.33 | ☒ Medium confidence | ☒ Documents |
| ☒ 0.66 | ☒ High confidence | ☐ Observations |
| ☐ 1 | | |

Please elaborate on the reasoning behind your scoring for this governance factor:

The Dushanbe Green Taxi initiative provides a clear and compelling example of effective translation of global sustainability goals—particularly SDGs 7, 11, 12, and 14—into locally relevant narratives, policy choices, and implementation practices. Actors across government and the private sector have actively reframed international green objectives in ways that resonate with Tajikistan's specific environmental challenges, energy endowments, and economic development priorities. Translation of SDGs to fit the local context as as a concious/ deliberate effort:

a) **Clean air and public health framing (SDG 11 – Sustainable Cities):** The documented health impacts of urban air pollution, including the link between PM2.5 exposure and more than 4,000 premature deaths in 2019, have been central to the justification for transport electrification. Rather than emphasising abstract emissions targets, policymakers and implementing actors consistently frame the initiative in terms of reduced respiratory and cardiovascular disease, safer urban living conditions, and improved quality of life—outcomes that are immediately tangible and meaningful to citizens.
b) **Energy independence through hydropower (SDG 7 – Affordable and Clean Energy):** Electrification has been framed not only as a climate mitigation measure, but as a strategy for strengthening national energy independence. With approximately 95% of electricity generated from renewable hydropower, the transition to electric vehicles is presented as a way to reduce reliance on imported fossil fuels, enhance energy security, and maximise the productive use of domestic renewable resources. This narrative aligns sustainability objectives with national pride and long-term strategic planning.

c) **Green growth and investment opportunities (SDG 12 – Responsible Consumption and Production):** Government and business actors have translated sustainability goals into an economic modernisation agenda, emphasising investment attraction, private-sector development, and domestic vehicle assembly and production. Policy instruments such as long-term tax exemptions, preferential treatment for EV-related investments, and support for local manufacturing frame the green transition as a driver of economic opportunity rather than a regulatory burden.
d) **Green public transport and smart urban development (SDGs 11 and 14):** The translation of SDGs extends beyond taxis to encompass a broader vision of green and smart urban mobility. This includes electric buses, feasibility assessments for metro systems, and pilot e-bus corridors supported through international cooperation. These initiatives reinforce a narrative of Dushanbe as a modern, forward-looking capital aligned with global trends in sustainable urban development.

**Strategic use of global sustainability discourse:**

a) Project stakeholders strategically reference international climate commitments, national climate targets, and global sustainability frameworks as both obligations and opportunities, using them to legitimise ambitious local action and unlock political and financial support.
b) International goals are not adopted verbatim; instead, they are actively reshaped into locally salient themes—public health, cost savings, energy security, and urban modernisation. This reframing has increased buy-in among local companies, financial institutions, and government agencies.

**This process of translation has enabled effective agenda-setting and mobilisation by**:

a) Driving policy reforms, including long-term tax and customs exemptions for electric vehicles
b) Accelerating infrastructure deployment, with rapid growth in charging stations
c) Mobilising private taxi operators to align with electrification targets
d) Attracting domestic and international investment into vehicles, charging infrastructure, and related services
e) Catalysing national programmes (2023–2028) supporting electric vehicle production, deployment, and recycling

The strong alignment between global sustainability discourse and local realities has made the green agenda both actionable and attractive, transforming SDGs from abstract international commitments into concrete, locally co-owned priorities. Nonetheless, while the SDGs are actively translated on the national to subnational policy level, there are no discernible mechanisms through which they have enabled collaboration. This partly reflects how the SDGs are used as agenda-setter, but not as catalysts for collaborative processes as such. The assessment thereby reflect a proactive effort to translate global sustainability goals into the local policy agenda, but significant gaps and limitations in terms of their linkage to concrete collaborative processes.

**7. Construction of narratives about successful multi-actor collaboration**

| QCA score: | Scoring confidence: | Data sources: |
|---|---|---|
| ☐ 0 | ☐ Low confidence | ☒ Interviews |
| ☐ 0.33 | ☐ Medium confidence | ☒ Documents |
| ☐ 0.66 | ☒ High confidence | ☒ Observations |
| ☒ 1 | | |

Please elaborate on the reasoning behind your scoring for this governance factor:

In the Dushanbe Green Taxi initiative, positive local narratives built around early successes in multi-actor collaboration have played a critical role in scaling the project, sustaining engagement, and legitimising collaborative problem-solving as both feasible and effective. These narratives have helped build confidence among stakeholders, attracted new participants, and reinforced the perception of the initiative as a credible and impactful model of green transition.

Key elements of the positive narrative:

a) **Yak Taxi as a local pioneer:** The story of Yak Taxi launching green taxis in 2022 and introducing an electric-vehicle booking option within its mobile application has become a foundational success narrative. High visibility, operational reliability, and positive user experience associated with this innovation provided early proof of concept and gave the broader initiative strong local credibility.
b) **Government and business working together:** Collaboration between the Dushanbe Mayor's Office, national ministries, private taxi operators, financial institutions, and international partners is consistently presented as a model of effective cross-sector partnership. The narrative emphasises mutual benefits—cleaner air, modernised transport services, investment opportunities, and regulatory innovation—reinforcing trust in collaborative governance.
c) **Tangible outcomes strengthening credibility:** Concrete, measurable results have been central to sustaining the narrative of success, including:
    1) Approximately 2,450 electric taxis in operation by mid-2024, with projections indicating more than 4,350 electric taxis by 2025
    2) 353 charging stations constructed across the city
    3) An estimated annual reduction of 1,240 tonnes of $CO_2$ emissions
    4) Highly visible green branding, improved service quality, and strong public-health framing, which together make the benefits understandable and relatable to citizens
d) **Leadership endorsement and reputational signalling:** Public statements from taxi company leaders emphasise not only environmental gains, but also improvements in service quality, operational efficiency, and corporate image. This framing positions participation in the initiative as a source of reputational value and modern business identity, reinforcing incentives for continued engagement.
e) **Media moments and symbolic events:** Highly visible events—such as large-scale electric vehicle handover ceremonies attended by senior government officials and company executives—serve as symbolic milestones. These moments reinforce shared ownership of the transition, sustain momentum, and transform collaboration into a source of civic pride and public recognition.

**How narratives have attracted and retained participants:**

a) Success stories have encouraged additional taxi companies to commit to full fleet electrification, resulting in participation from 12 taxi operators in Dushanbe.
b) he model has been adopted by other cities, including Khorugh and Khujand, demonstrating the perceived transferability and credibility of the approach.
c) Financial institutions have responded by developing tailored loan products for electric vehicles, indicating that the narrative has influenced financial decision-making and risk perceptions.
d) International partners have joined subsequent phases of the initiative, drawn by visible results, institutional alignment, and demonstrated implementation capacity.

**Limitations and risks:**

a) The dominant narrative focuses on success stories, with limited public discussion of challenges or setbacks. Persistent barriers—particularly limited access to affordable finance for individual

drivers—pose a reputational risk if not adequately addressed, as they may give rise to perceptions of inequality or exclusion from the green transition.

b) Narrative construction remains largely institution-driven, with limited evidence of grassroots storytelling or active amplification by civil society or community-based actors.

Overall, the Dushanbe Green Taxi initiative has effectively leveraged early wins, leadership endorsement, and public milestones to construct a positive local narrative around collaboration and green transition. These narratives have attracted new actors, expanded the coalition of support, and embedded the initiative in public discourse as a symbol of modernity, innovation, and progress. The assessment reflects the strong narrative construction anchored in tangible outcomes, though still primarily driven by institutional actors.

**8. Building or harnessing institutional platforms and arenas**

| QCA score: | Scoring confidence: | Data sources: |
|---|---|---|
| ☐ 0 | ☐ Low confidence | ☒ Interviews |
| ☐ 0.33 | ☐ Medium confidence | ☒ Documents |
| ☐ 0.66 | ☒ High confidence | ☒ Observations |
| ☒ 1 | | |

Please elaborate on the reasoning behind your scoring for this governance factor:

The Dushanbe Green Taxi initiative is supported by multiple institutional platforms and arenas that have played a critical role in enabling collaboration, coordinating action, and scaling innovation. These platforms—both organisational and physical—function as scaffolding structures that sustain multi-actor engagement, reduce coordination costs, and support co-creation over time rather than through isolated pilot efforts.

Examples of platforms and arenas supporting collaboration:

a) **International platform – Green Cities framework:** Dushanbe's participation in an international green cities framework provides a formalised platform that anchors the city's environmental ambitions within a structured diagnostic, planning, and investment process. This platform offers:
   1) Technical assistance and policy guidance
   2) Access to infrastructure financing (including support for electric vehicles and charging infrastructure)
   3) A neutral coordination space where municipal authorities, national institutions, private operators, and international partners can align priorities and sequencing

b) **National policy platform – Electric Transport Development Program (2023–2028):** This programme serves as a nationwide regulatory and operational platform for transport electrification. It establishes:
   1) Strategic objectives, including battery recycling systems and domestic EV production
   2) National infrastructure targets, such as large-scale deployment of charging stations
   3) Clearly defined institutional roles and responsibilities
   4) Formal mechanisms for public–private coordination and investment mobilization

c) **City-level institutional platforms (Dushanbe Municipality):** The Dushanbe Mayor's Office functions as a central local organising hub through the adoption of key planning instruments, including the 2023–2026 electrification concept and the 2022–2028 green transport action plan. These frameworks institutionalise engagement between municipal authorities, taxi operators, utilities, and public service departments, enabling sustained coordination rather than ad hoc interaction.
d) **Charging infrastructure as a physical collaboration platform:** The deployment of EV charging stations across Dushanbe functions not only as technical infrastructure but also as a shared physical platform that enables collaboration. It supports:
    1) Interoperability among different taxi companies
    2) Expansion of electric mobility service coverage
    3) A visible and tangible signal of long-term commitment to clean transport
e) **Digital platforms and user-facing arenas:** The integration of electric vehicle options into ride-hailing applications serves as a digital arena linking city-level goals, private service provision, and consumer choice. These platforms reinforce behavioural change, facilitate data generation on usage patterns, and feed operational insights back into planning and innovation cycles.

**Platform effects on collaborative innovation:**

a) The platforms provide continuity and stability, allowing coordination beyond pilot projects or short-term initiatives.
b) They help institutionalise collaboration, reducing reliance on informal relationships or individual champions.
c) Clear regulatory, technical, and procedural frameworks align diverse actors—ministries, utilities, financial institutions, and private operators—around shared expectations and timelines.
d) The platforms create protected spaces for experimentation, enabling pilots such as electric bus routes, charging interoperability tests, and phased fleet conversion without undermining overall system stability.

**Limitations:**

a) There is limited evidence of citizen-led or community-based platforms, indicating that platform creation is largely government- or donor-driven rather than bottom-up.
b) Platform maturity and availability outside Dushanbe—particularly in secondary cities—remain uneven, although interest in replication is increasing.

Overall, institutional platforms at international, national, and municipal levels have substantially strengthened collaborative green innovation in Dushanbe. By providing coordination mechanisms, financing channels, and shared arenas for interaction, these platforms have supported the stable evolution of the Green Taxi initiative from a city-level intervention toward a broader national transition. The assessment reflects a large multi-level platform infrastructure that is well-functioning among institutional actors, although with remaining gaps in citizen-led and bottom-up platform development that inhibits consistent stakeholder inclusion to collaborative processes.

**9. Provision of access to blended financing**

| QCA score: | Scoring confidence: | Data sources: |
|---|---|---|
| ☐ 0 | ☐ Low confidence | ☒ Interviews |
| ☐ 0.33 | ☐ Medium confidence | ☒ Documents |
| ☐ 0.66 | ☒ High confidence | ☒ Observations |
| ☒ 1 | | |

Please elaborate on the reasoning behind your scoring for this governance factor:

The Dushanbe Green Taxi initiative is a model example of effective use of blended financing to stimulate green innovation and enable multi-actor collaboration. The financing structure strategically combines development assistance, public funding, and private capital, directly reducing risk for early adopters and unlocking new market participation.

Key components of blended financing in the project:

a) **EBRD investment and grant support**: The European Bank for Reconstruction and Development provided a **$**4.5 million financing package to Rakhsh Taxi for:
    1) Acquisition of up to 100 electric vehicles
    2) Construction of 40 EV charging stations
    This package also included a grant from the FINTECC program, backed by the Global Environment Facility (GEF) — a textbook case of combining concessional financing and climate-related grants.

b) **National budget contributions**: As part of the Electric Transport Development Program, the Government of Tajikistan committed:
    1) 1.4 million somonis from the national budget
    2) 6.2 million somonis from development partners
    3) Over 221 million somonis (~$20.5M) from the private sector
    This shows strong public commitment, while signaling confidence to private investors.

c) **Private sector participation**: Taxi companies like Yak, Rakhsh, Atlas, and others have co-invested in fleet upgrades, while banks (Alif, Eskhata) have offered car loans tailored to EV buyers, albeit with high interest rates (15–28%). These private actors benefit from a de-risked environment created by public and development finance.

d) **Customs and tax exemptions as indirect financial instruments**: The 10-year exemption on import duties and taxes for EVs, introduced by presidential decree and enacted through national law, acts as a non-monetary but highly impactful incentive, reducing upfront capital needs.

Impact on collaborative problem-solving:

a) Blended finance enabled early movers like Yak Taxi to take risks and demonstrate proof-of-concept, encouraging others to follow.

b) It lowered barriers to entry for smaller or risk-averse actors, facilitating a more inclusive collaborative process involving multiple companies, municipalities, and even regional governments.

c) Financing tools created interdependencies between government, development banks, and the private sector, institutionalizing long-term coordination.

d) Access to international financing mechanisms enhanced policy coherence, aligning Dushanbe's initiative with global climate finance architecture.

Blended financing has been critical to the success of the Dushanbe Green Taxi initiative. It enabled early implementation, de-risked private participation, and established a replicable financing model for other cities. The smart mix of grants, loans, tax incentives, and private co-financing has helped embed collaboration and innovation within a structured and sustainable financial framework. The case scores 1 because of its exemplary use of blended finance to support green collaboration.

**10. The capacity to leverage support from authorities to enable local collaboration**

| QCA score: | Scoring confidence: | Data sources: |
|---|---|---|
| ☐ 0 | ☐ Low confidence | ☒ Interviews |
| ☐ 0.33 | ☐ Medium confidence | ☒ Documents |
| ☐ 0.66 | ☒ High confidence | ☒ Observations |
| ☒ 1 | | |

Please elaborate on the reasoning behind your scoring for this governance factor:

The Dushanbe Green Taxi initiative demonstrates a very high capacity to leverage governmental support across multiple governance levels—municipal, national, and international. Interaction between public authorities and private and local actors has been sustained, responsive, and strongly enabling of collaborative problem-solving, with government institutions acting not only as regulators, but as active partners and co-creators in the transition.

Forms of support leveraged from public authorities:

a) **Policy and regulatory support:**
   1) The Dushanbe Mayor's Directive (Decree No. 308, 2023), mandating the full transition of taxi fleets to electric vehicles by September 2025, provides binding timelines, regulatory certainty, and strong political backing. This mandate reduced uncertainty for taxi companies and enabled long-term investment planning.
   2) The Electric Transport Development Program (2023–2028) establishes a national policy backbone for transport electrification, including provisions on charging infrastructure, battery recycling, domestic EV production, and public–private coordination.
   3) The 10-year exemption from import duties and taxes for electric vehicles, introduced by presidential decree and enacted through national legislation, directly responds to private-sector concerns regarding high upfront costs and long payback periods, significantly improving the financial viability of fleet electrification.

b) **Infrastructure facilitation:**
   1) Municipal authorities have actively coordinated with taxi operators, utilities, and private developers to support the rollout of charging infrastructure. By mid-2024, 136 EV charging stations were operational in Dushanbe. Government facilitation of land allocation, permitting, and grid connection reduced implementation delays and enabled reliable daily operations for electric taxi fleets, as well as future regional expansion.

c) **Engagement with central government:**
   1) National ministries responsible for transport, environment, energy, and industry have been directly involved in project design and implementation, ensuring vertical policy coherence and alignment between municipal actions and national priorities.
   2) Repeated public statements by the President emphasising the strategic use of clean domestic electricity for transport electrification and calling for local EV production have further legitimised municipal action and reinforced private-sector investment decisions.

d) **International support channelled through government relationships:**
   1) EBRD support has been central to the initiative. The EBRD financed the electrification of taxi fleets—most notably through its financing package for Rakhsh Taxi, which included funding for electric vehicles and charging infrastructure. This support, aligned with the Green Cities Action Plan framework, combined investment capital with performance and reporting requirements, strengthening both financial viability and accountability.

2) Bilateral cooperation—such as electric vehicle deliveries from China (BAIC) and cooperation with South Korea on metro feasibility studies—was enabled through government-led diplomatic engagement, allowing local actors to access advanced technologies and expertise.
3) Collaboration with UNESCAP on a nationwide electric bus network demonstrates how national authorities have enabled local and municipal actors to tap into global technical assistance platforms, policy advisory services, and international financing channels.

e) **Responsive adjustments based on local needs:** Public authorities demonstrated adaptive governance by responding to operational and financial constraints raised by taxi companies and financiers, including:
1) Expansion and clarification of duty-free import privileges for electric vehicles
2) Active encouragement of commercial banks to develop electric-vehicle-specific loan products
3) Support for cost-reduction strategies**,** such as local assembly and manufacturing initiatives (including the Akia Avesto electric bus plant)
These measures reflect continuous dialogue and iterative policy adjustment rather than one-off, top-down regulation.

**Effect on collaborative problem-solving:**

a) Enabled private operators such as Yak, Rakhsh, and Atlas to expand electric fleets with confidence under predictable regulatory and financial conditions.
b) Created a stable and supportive policy environment essential for investment, fleet planning, and infrastructure deployment.
c) Strengthened trust and long-term commitment across sectors by positioning government institutions as enablers and partners, rather than solely as regulators.
d) Facilitated replication and scaling, including pilot implementations in other cities such as Khujand and Khorugh.

Overall, the Dushanbe Green Taxi case shows clear, consistent, and proactive leverage of public authority support by local and private actors. Through binding mandates, infrastructure facilitation, EBRD-backed financing, UNESCAP-supported technical cooperation, and responsive policy adaptation, government institutions have dismantled key financial, infrastructural, and regulatory barriers—allowing collaborative green innovation to emerge, scale, and stabilize. The assessment reflects a strong, continuous, and comprehensive leverage of government support at strategic, operational, and international levels, which has been integral to the collaborative success.

**11. Inclusion and empowerment of relevant and affected actors**

| QCA score: | Scoring confidence: | Data sources: |
|---|---|---|
| ☐ 0 | ☐ Low confidence | ☒ Interviews |
| ☐ 0.33 | ☒ Medium confidence | ☒ Documents |
| ☒ 0.66 | ☐ High confidence | ☒ Observations |
| ☐ 1 | | |

Please elaborate on the reasoning behind your scoring for this governance factor:

The Dushanbe Green Taxi initiative demonstrates a high level of inclusion and empowerment of relevant institutional and market actors, particularly from the public and private sectors. These actors are well represented and actively engaged throughout planning and implementation. However, lay actors and potentially marginalised groups—especially individual taxi drivers and lower-income users—remain less directly included in formal collaboration and decision-making channels.

Inclusion and empowerment of relevant actors:

a) Private taxi companies (Yak, Rakhsh, Atlas) are central collaborators and were involved from early stages of project planning and rollout. Their operational experience directly informed fleet transition strategies, charging infrastructure placement, service models, and pricing decisions. These companies act not only as implementers, but as co-designers of the transition.
b) Banks and fintech companies (Alif Bank, Eskhata Bank) are empowered as financial solution providers by developing EV-specific loan products for taxi operators and drivers. Through these products, financial institutions contribute market-based tools to address affordability constraints, even though interest rates remain relatively high.
c) Local government (Dushanbe City Administration) is a strongly empowered actor, exercising formal authority through binding mandates, city-level plans, and implementation oversight. By issuing clear deadlines and policy instruments, the municipality has established ownership of the transition and created an enabling environment for collaboration.
d) Utility companies (Barqi Tojik), national ministries (Transport, Environment, Industry), and customs authorities are actively involved in cross-sectoral coordination. These actors provide regulatory approvals, grid access, technical standards, and customs facilitation, ensuring operational feasibility and policy coherence across sectors.
e) International actors—including EBRD, BAIC, UNESCAP, and Korea National Railway—play roles that go beyond financing. They act as technical enablers by supplying vehicles, providing feasibility studies, supporting charging and mass transit planning, and embedding international standards and expertise into local implementation.
f) Taxi drivers, the group most directly affected by the transition, are only partially empowered. While drivers benefit from cleaner vehicles, lower operating costs over time, and employment within green taxi companies, they face significant constraints:
    1) Difficulty accessing loans due to existing debt burdens
    2) Concerns over the resale value of older internal combustion vehicles
    3) High interest rates and limited access to concessional or tailored credit instruments These factors indicate that although drivers are the backbone of implementation, they remain limited in financial agency and have minimal influence over strategic decisions.
g) Citizens and service users are indirectly included through improved service quality, cleaner vehicles, and digital access to electric taxis (e.g. EV selection via ride-hailing applications). However, there are no documented mechanisms for formal public participation, consultation, or feedback in project design, monitoring, or evaluation.

Capacity-building and empowerment measures:

a) EV affordability support:
    1) Introduction of 10-year tax and customs exemptions for electric vehicles
    2) Declining EV prices (from approximately USD 20–30,000 to USD 16–17,000)
    3) Plans for domestic EV production and local assembly, aimed at reducing long-term costs and dependency on imports
b) Infrastructure empowerment: Deployment of 136 EV charging stations across Dushanbe, enabling reliable operation for taxi fleets and creating future opportunities for individual EV users
c) Policy clarity and stability: Clearly defined city-level electrification deadlines and national programmes provide a predictable roadmap, allowing companies, financiers, and infrastructure providers to invest and innovate with greater confidence

Limitations:

a) Civil society organisations and citizen collectives are largely absent from formal decision-making and governance processes.
b) While relevant institutional and market actors are clearly empowered, affected actors—particularly individual drivers and lower-income users—are not yet systematically supported through targeted instruments such as subsidies, cooperative ownership schemes, income-sensitive financing, or participatory platforms.

Overall, the Dushanbe Green Taxi initiative demonstrates strong inclusion and empowerment of institutional and private-sector actors**,** whose expertise, capital, and networks are central to project success. Affected actors**,** especially drivers and end-users, are acknowledged and benefit indirectly, but are not yet structurally integrated into collaborative governance or decision-making processes. There is clear scope to deepen empowerment through enhanced financial inclusion, participatory mechanisms, and social equity-oriented policy tools. In conclusion, a broad range of relevant actors are included and empowered, but especially the relative lower influence of drivers and end-users through indirect participation (data from service consumption) remains a major barrier that requires further improvements to ensure consistent improvements to the collaborative processes.

**12. Clarification of interdependence vis-à-vis common problem and joint vision**

| QCA score: | Scoring confidence: | Data sources: |
|---|---|---|
| ☐ 0 | ☐ Low confidence | ☒ Interviews |
| ☐ 0.33 | ☐ Medium confidence | ☒ Documents |
| ☐ 0.66 | ☒ High confidence | ☒ Observations |
| ☒ 1 | | |

Please elaborate on the reasoning behind your scoring for this governance factor:

The Dushanbe Green Taxi initiative presents a strong and clearly articulated case of recognised and actively reinforced interdependence among actors involved in the transition to e-mobility. Political leaders at both national and municipal levels have explicitly framed climate change and urban air pollution as shared systemic challenges, using this framing to build a cohesive, multi-actor vision for a green, modernised transport system that no single actor could deliver independently.

Perceived interdependence among actors:

a) **Public authorities** depend on private actors—such as taxi operators, vehicle suppliers, and financial institutions—to deliver concrete emission reductions, improve air quality, and achieve commitments under the city's Green City Action Plan (GCAP). Policy goals cannot be realised without private-sector implementation capacity and investment.
b) **Private-sector actors** rely on government support to make electrification economically and operationally viable, particularly through:
    1) Tax and customs exemptions for electric vehicles
    2) Clear and binding policy directives, including the mandate for full fleet electrification by 2025
    3) Public facilitation of charging infrastructure deployment
c) **International financiers and development partners** (including EBRD, GEF, and UNESCAP) depend on credible local institutions, political commitment, and implementation capacity to justify investment, manage risk, and deliver measurable environmental and climate outcomes.

d) **Utility companies** depend on the expansion of electric mobility to increase electricity demand in a way that aligns with Tajikistan's 95% renewable energy mix, supporting national energy independence goals and improving the utilisation of domestic hydropower resources.

Across actors, the transition to electric vehicles is widely understood as too complex, capital-intensive, and system-dependent to be achieved by any one group acting alone. This shared recognition of mutual reliance forms the backbone of coordination and collaboration. So, although it is not actual structural interdependence, this mutual reliance is perceived and acknowledged as such by each group of actors.

How leaders clarify and reinforce interdependencies:

a) The Dushanbe Mayor's Office and national ministries (Transport, Environment, Industry) have issued strategic planning instruments—such as the 2023–2026 electrification concept and the Electric Transport Development Program (2023–2028)—that explicitly:
    1) Define and differentiate the roles of public institutions, private operators, utilities, financiers, and international partners
    2) Set joint milestones and timelines
    3) Link individual actor contributions to shared outcomes, including $CO_2$ reductions, improved air quality, and modern urban mobility
b) Public speeches and policy framing consistently reinforce shared responsibility:
    1) The President has publicly framed EV development as a national priority connected to clean domestic energy use, environmental protection, and long-term resilience.
    2) Statements from company leaders (e.g. Rakhsh Taxi, VECTOP Holding) emphasise that collaboration delivers benefits for Tajik citizens as a whole, not only for individual firms.
c) Cross-sector platforms—such as the EBRD Green Cities framework and UNESCAP's regional electric bus programmes—help institutionalise the shared vision through structured dialogue, feasibility studies, joint planning exercises, and co-investment strategies.
d) Joint pilot projects operationalise interdependence in practice. For example, the introduction of 1,000 BAIC electric vehicles through cooperation between Tajik authorities, Chinese manufacturers, and local taxi operators directly links government facilitation, international supply chains, and private fleet operations.

**Effect on collaborative processes:**

a) A shared vision of a cleaner, modern, and energy-independent transport system has motivated actors to pool resources, align incentives, and coordinate action.
b) Interdependence clarifies that success is mutually contingent: public climate and air-quality goals depend on private execution, while private investment depends on public policy stability, infrastructure provision, and regulatory support.
c) This mutual reliance reduces zero-sum competition, builds trust, and shifts attention from individual gains toward collective impact and long-term system transformation**.**

Overall, the Dushanbe Green Taxi initiative demonstrates a high degree of clarity, recognition, and institutional reinforcement of interdependence**.** Through strategic communication, shared policy roadmaps, co-financing mechanisms, international platforms, and high-visibility pilot projects, leaders have consistently articulated and operationalised a joint vision—motivating actors to collaborate deeply, predictably, and over time.

**13. Trust-building and conflict mediation**

| QCA score: | Scoring confidence: | Data sources: |
|---|---|---|
| ☐ 0 | ☐ Low confidence | ☒ Interviews |
| ☐ 0.33 | ☒ Medium confidence | ☒ Documents |
| ☐ 0.66 | ☐ High confidence | ☒ Observations |
| ☒ 1 | | |

Please elaborate on the reasoning behind your scoring for this governance factor:

The Dushanbe Green Taxi initiative demonstrates strong institutional trust and moderate but gradually strengthening interpersonal trust among participating stakeholders. Trust-building has been a critical factor in sustaining collaboration in a complex, multi-actor green transition—particularly in a context characterised by large capital investments, ambitious timelines, and the need for close cross-sector coordination.

**Institutional trust has been built by way of:**

a) **Government commitment and policy consistency** have fostered confidence in the direction and credibility of the initiative. National and municipal authorities have enacted:
   1) Long-term strategic programmes (e.g. the Electric Transport Development Program 2023–2028)
   2) Binding formal decrees (e.g. the mandate for full EV transition by 2025)
   3) Stable and predictable incentive structures (e.g. 10-year tax and customs exemptions for EVs.
   4) Together, these measures create a predictable institutional environment in which private companies, banks, and international partners feel sufficiently secure to invest, plan, and commit resources.

b) **Policy and planning transparency:** Clear targets, timelines, and role assignments embedded in official strategies—such as the 2023–2026 electrification concept—strengthen trust by signalling that rules are known, stable, and consistently applied across actors.

c) **Integration of public and private interests:** Government institutions, including ministries and municipal authorities, are widely perceived as partners rather than purely regulators. Public authorities actively supported infrastructure rollout, aligned implementation timelines with private operators' operational capacity, and adjusted policies in response to private-sector feedback, reinforcing confidence in collaborative governance.

d) **International institutional trust:** Financing provided by the EBRD, alongside technical partnerships with UNESCAP and Korea National Railway, reflects external confidence in Tajikistan's institutional capacity to manage complex projects transparently, coordinate multiple actors, and deliver measurable environmental and transport outcomes.

**Interpersonal trust has been built by way of:**

a) Although not always explicitly documented, there are clear indications of sustained interpersonal collaboration between:
   1) City officials and taxi company leadership
   2) National ministries and infrastructure developers
   3) Local businesses and international suppliers, as demonstrated during highly visible cooperation moments such as the BAIC vehicle handover ceremony

b) Public statements by actors such as Murod Nazarov (Rakhsh Taxi) and Tahmina Bakhronova (Atlas Taxi) suggest relationships characterised by mutual respect, aligned expectations, and a shared belief in the broader public value of the collaborative transition.

c) The absence of reported disputes or breakdowns in cooperation within the project narrative further suggests that informal coordination, trust-based communication, and problem-solving mechanisms are functioning effectively.

**Conflict handling and trust reinforcement:**

a) Financial barriers faced by taxi drivers—such as limited ability to afford EVs or secure loans—emerged as a significant challenge. However, these tensions did not lead to blame, resistance, or fragmentation of collaboration. Instead, they were addressed through structural and collective responses, including:
    1) Development of loan options through commercial banks
    2) Reductions in vehicle prices over time
    3) Expansion and clarification of financial and fiscal incentives
b) There is no evidence of open conflict among key stakeholders. On the contrary, challenges appear to be handled proactively and constructively through policy adjustment, incentive reinforcement, and transitional support measures.
c) The consistent emphasis on shared public goods—such as improved air quality, public health, and national energy independence—provides a unifying narrative that helps mitigate potential competition or distrust between actors with differing institutional or commercial interests.

Overall, the Dushanbe Green Taxi initiative benefits from strong institutional trust grounded in clear, consistent, and inclusive governance frameworks, combined with moderate but growing interpersonal trust reinforced through regular public–private interaction, joint milestones, and symbolic collaboration events. Emerging challenges—particularly around affordability and access—are addressed through adaptive policy responses rather than conflict, preserving momentum and cohesion within the collaborative process. Overall, there is solid institutional trust and a constructive handling of tensions within a complex multi-actor collaboration context.

**14. Use of experimental tools for innovation**

| QCA score: | Scoring confidence: | Data sources: |
|---|---|---|
| ☐ 0 | ☐ Low confidence | ☒ Interviews |
| ☐ 0.33 | ☒ Medium confidence | ☐ Documents |
| ☒ 0.66 | ☐ High confidence | ☒ Observations |
| ☐ 1 | | |

Please elaborate on the reasoning behind your scoring for this governance factor:

While the Dushanbe Green Taxi initiative is grounded in a clear understanding of user needs—including cleaner air, improved ride quality, and affordable, accessible transport—there is limited evidence of a formal, structured application of user-centered design or prototyping methodologies within the collaborative process. That said, several practical elements of user responsiveness are evident, particularly through incremental rollout strategies and adaptive implementation choices that reflect learning-by-doing rather than explicit design frameworks.

**Elements of user-centered design present:**

a) **Digital service adaptation (Yak Taxi app):** The introduction of an electric vehicle booking option within the Yak Taxi mobile application reflects responsiveness to user behaviour and preferences.

By allowing passengers to actively choose electric vehicles, the platform acknowledges emerging user expectations for cleaner, quieter, and more modern transport services. Although this feature was not developed through formal co-design workshops, it represents a pragmatic, light-touch form of user-centered design embedded directly in service delivery.

b) **Focus on public health and ride quality:** The initiative's core narrative—emphasising reduced respiratory disease, quieter vehicles, and improved urban air quality—closely aligns with widely expressed citizen concerns. While these priorities were not articulated through structured participatory design processes, they clearly respond to lived user experiences with ageing diesel taxis and chronic urban pollution, suggesting that problem framing was informed by everyday user realities.
c) **Affordability as a user concern:** Stakeholders have responded to financial challenges faced by key user groups, particularly taxi drivers, with regard to vehicle affordability and access to finance. Measures such as declining EV prices, long-term tax and customs exemptions, and the introduction of EV-specific loan products indicate indirect feedback loops between users and decision-makers. Even though these adjustments were not generated through formal user design sessions, they reflect sensitivity to user constraints and economic viability at the individual level.

**Limited evidence of prototyping or iterative design:**

There is no documented use of formal pilot-testing frameworks, structured experimentation with multiple design alternatives, or systematic user feedback cycles. However, several elements can be interpreted as de facto prototyping:

a) The initial rollout of electric vehicles by Yak Taxi in 2022 functioned as an early-stage, real-world prototype, demonstrating technical feasibility, operational viability, and basic user acceptance.
b) The phased deployment of charging infrastructure—reaching 136 charging stations by mid-2024—and the gradual scaling of the electric taxi fleet to approximately 2,450 vehicles illustrate an iterative and scalable implementation approach, even if it was not explicitly framed as prototyping or experimentation.

Looking ahead, pilot electric bus projects supported through UNESCAP and ongoing metro feasibility studies may offer more formal opportunities for structured testing, systematic user feedback, and iterative refinement in future phases of Dushanbe's urban mobility development.

**Impact on collaborative problem-solving:**

a) The absence of structured user-centered design processes constrains deeper forms of citizen co-creation, particularly for marginalised or less vocal groups such as low-income drivers, passengers with disabilities, or non-digital users.
b) Nevertheless, the initiative has demonstrated pragmatic adaptability, relying on incremental rollout, real-time observation, and policy adjustment to respond to emerging operational, technical, and financial constraints.
c) Some strategic decisions—most notably the city-wide mandate for full taxi electrification by 2025—were taken largely through top-down planning processes, leaving limited space for prototyping or structured user testing at the system level.

Overall, while the Dushanbe Green Taxi initiative exhibits elements of user responsiveness and practical adaptation, it does not systematically apply formal user-centered design or prototyping methodologies. User feedback appears to influence implementation indirectly and pragmatically, rather than serving as a

central driver of innovation design. Accordingly, while tangible user-centered practices have been deployed as part of the data and feedback that is gathered through the taxi apps, they have primarily been used for operational improvements rather than improving collaborative processes in any discernibly ways.

**15. Ongoing critical self-reflection and learning (i.e., process and/or developmental evaluation):**

| QCA score: | Scoring confidence: | Data sources: |
|---|---|---|
| ☐ 0 | ☐ Low confidence | ☐ Interviews |
| ☒ 0.33 | ☒ Medium confidence | ☒ Documents |
| ☐ 0.66 | ☐ High confidence | ☒ Observations |
| ☐ 1 | | |

Please elaborate on the reasoning behind your scoring for this governance factor:

While the Dushanbe Green Taxi initiative is guided by clear targets, feedback-informed adaptation, and periodic monitoring, there is limited evidence of structured process or developmental evaluation mechanisms embedded within the collaborative problem-solving framework. Nonetheless, several actions and implementation strategies reflect a pragmatic, problem-solving culture that incorporates feedback and iterative adjustment, even if this learning remains informal and largely managerial.

**Examples of adaptive learning and informal evaluation:**

a) **Adjustment based on affordability constraints:** In response to persistent concerns from taxi drivers regarding the high cost of electric vehicles and limited access to credit, government institutions and project stakeholders introduced a series of adaptive measures, including:
   1) Development of new car loan products by commercial banks
   2) Expansion and clarification of tax and customs exemptions for electric vehicles
   3) Support for cost-reduction strategies, such as revised procurement approaches (including large-scale BAIC deliveries and plans for domestic vehicle assembly) These responses demonstrate a reactive feedback loop in which implementation challenges prompted policy and market adjustments, even though these actions were not framed within a formal process evaluation framework.

b) **Incremental rollout of EV infrastructure and fleets:** The staged deployment of charging infrastructure—136 charging stations by June 2024—alongside the gradual increase in electric taxi numbers—from zero to approximately 2,450 vehicles—illustrates a monitor-and-adjust implementation approach. Rollout decisions appear to have been informed by operational feedback related to uptake rates, infrastructure reliability, and demand patterns, rather than by fixed, pre-determined deployment schedules.

c) **Green City Action Plan (GCAP) monitoring:** As part of the Green Cities initiative supported by the EBRD, Dushanbe's GCAP is expected to include performance monitoring indicators related to environmental outcomes, transport efficiency, and investment progress. However, available case materials do not confirm whether these indicators are systematically used for iterative learning, periodic reassessment of assumptions, or formal adjustment of implementation strategies.

**Limited evidence of formal self-evaluation or reflective mechanisms**:

a) There is no documented evidence of:
    1) Structured process evaluations assessing the quality of collaboration, governance arrangements, or stakeholder engagement
    2) Developmental evaluation practices, such as facilitated reflection workshops aimed at revisiting project assumptions, risks, or shared objectives
    3) Systematic use of evaluation findings to redesign governance structures, collaboration mechanisms, or decision-making processes
b) Feedback mechanisms appear to operate in an informal, operational, and managerial manner, rather than being embedded as institutionalised learning routines within the project's governance design.

**Potential opportunities for strengthening learning:**

a) Ongoing partnerships with international organisations, including EBRD and UNESCAP, provide a potential foundation for introducing more formalised learning and evaluation frameworks, particularly as projects mature or are replicated in other cities.
b) Future phases of urban mobility development—such as electric bus pilot projects and metro system planning—offer opportunities to apply developmental evaluation approaches to test feasibility, manage uncertainty, and guide scale-up strategies in a more structured way.

Overall, the Dushanbe Green Taxi initiative demonstrates patchy patterns of adaptive, feedback-driven decision-making, particularly in response to financial, operational, and implementation challenges. However, learning occurs primarily through ad hoc practice rather than through codified reflection or evaluation frameworks. The absence of formal mechanisms for collaborative reflection and process evaluation limits opportunities for systematic or deeper learning and systematic improvement of the collaborative model. While there is some limited evidence of adaptive learning, it represents a very limited scope of institutionalisation of reflection, evaluation, and structured learning mechanisms that translates into any substantial improvements into collaboration.

**16. Exercise of facilitative leadership:**

| QCA score: | Scoring confidence: | Data sources: |
|---|---|---|
| ☐ 0 | ☐ Low confidence | ☒ Interviews |
| ☐ 0.33 | ☐ Medium confidence | ☒ Documents |
| ☐ 0.66 | ☒ High confidence | ☒ Observations |
| ☒ 1 | | |

Please elaborate on the reasoning behind your scoring for this governance factor:

The Dushanbe Green Taxi initiative is characterised by clear, visible, and sustained facilitative leadership, exercised across municipal and national government levels, the private sector, and international partnerships. Leadership in this case has been enabling rather than purely directive, focusing on convening diverse actors, aligning incentives, and sustaining collaboration around a shared vision for green transport transition.

Forms and examples of facilitative leadership:

a) **Municipal leadership (Dushanbe City Administration):**
    1) The Mayor's Office has played a central convening and coordinating role by issuing binding policy mandates—most notably the requirement for full taxi fleet electrification by September 2025—and by developing local strategic frameworks such as the 2023–2026 electrification concept**.**
    2) The municipality also enabled implementation by facilitating infrastructure deployment, including the installation of 136 EV charging stations, thereby reducing operational risk and allowing private companies to scale electric taxi services.
b) **National leadership (Presidency and ministries):**
    1) President Emomali Rahmon has exercised publicly visible leadership by framing the EV transition as integral to national energy independence, environmental protection, and international climate commitments.
    2) Key ministries—Transport, Environment, and Industry—have actively coordinated legislation, fiscal incentives, and technical policy instruments, ensuring vertical alignment and equipping local actors with the regulatory and institutional tools needed to deliver the transition.
c) **Private-sector leadership (Yak Taxi, Rakhsh, Atlas):**
    1) Private operators have demonstrated leadership by acting as early movers. Companies such as Yak Taxi pioneered green taxi fleets in 2022, providing proof of concept and demonstrating both operational feasibility and user demand.
    2) Company leaders, including Murod Nazarov (Rakhsh Taxi) and Tahmina Bakhronova (Atlas Taxi), have reinforced collaboration through public statements that explicitly align corporate strategies with public goals such as cleaner air, improved service quality, and modern urban mobility.
d) **International leadership (EBRD, UNESCAP, BAIC):**
    1) The EBRD Green Cities programme provided not only financing, but also strategic leadership through vision-setting, sequencing, and technical guidance embedded in the Green City Action Plan (GCAP).
    2) High-profile international cooperation moments—such as the July 2024 handover of 1,000 electric vehicles from BAIC to Tajik taxi companies—served as symbolic leadership acts, reinforcing global–local collaboration and signalling long-term international commitment.

How leadership supports collaboration:

a) **Bridging sectors:** Leadership actively connected municipal authorities, national ministries, taxi companies, banks, donors, and foreign manufacturers, enabling coordination across a diverse and interdependent actor network.
b) **Incentivising action:** Governments created enabling conditions through tax exemptions, infrastructure provision, and strategic planning, motivating private-sector investment and participation.
c) **Setting clear targets and timelines:** The September 2025 electrification deadline functions as a shared focal point, allowing actors to synchronise strategies, investments, and operational plans.
d) **Celebrating progress and reinforcing narratives:** Leaders have sustained momentum by publicly highlighting early successes, organising high-visibility events, and communicating progress through media and public statements—strengthening public trust and stakeholder confidence.

Overall, facilitative leadership in the Dushanbe Green Taxi initiative has been visible, strategic, and effective. Leaders at multiple levels have not only articulated direction, but have actively enabled others to act through coordination, signalling, planning, and shared accountability. This leadership approach has been central to sustaining collaboration and advancing complex problem-solving in the green transport

transition. In conclusion, there has been a multi-level facilitative leadership that strongly supports sustained collaboration and collective action.

**Outcome variable: Successfully co-created green transitions**

The outcome variable 'co-created green transitions' will be scored in two parts. First, 'co-creation' will be scored based on an assessment of whether the participants in the initiative, project or process engaged in collaborative problem-solving that fostered creative ideas and innovative solutions (data will consist of survey data combined with interviews and documents). Next, 'green transitions' will be scored based on an assessment of whether the initiative, project or process has fulfilled or is expected to fulfill its green goals, ambitions and aspirations (data will consist of survey data combined with interviews and internal and/or external evaluation reports, including scientific publications).

*The scoring of this variable is done in two parts:*

1. *Is the developed solution based on collaborative problem-solving spurring creativity and innovative solutions?*
2. *Does the developed solution engender a green transition?*

*This scoring should be conducted based on both the survey and complementary green outcome evaluations. Please consult Sections 4.4 and 6.10 in the Research Protocol for more details.*

**1. Is the developed solution co-created?**

| QCA score: | Scoring confidence: | Data sources: |
|---|---|---|
| ☐ 0 | ☐ Low confidence | ☐ Survey |
| ☐ 0.33 | ☐ Medium confidence | ☒ Interviews |
| ☒ 0.66 | ☒ High confidence | ☒ Documents |
| ☐ 1 | | ☒ Observations |

Please elaborate on the reasoning behind your scoring for this part of the governance factor, including the data sources used for the scoring.

The Dushanbe Green Taxi initiative demonstrates strong collaborative problem-solving among a broad group of public and private actors. It includes government ministries (Transport, Environment, Industry), the Dushanbe City Administration, international organizations (EBRD, UNESCAP), local taxi companies (Yak, Rakhsh, Atlas), utility companies, banks, and foreign manufacturers (e.g., BAIC). These actors have jointly contributed to problem-solving in the design and implementation of electric transport solutions.
The initiative has resulted in:

a) New service models (e.g., EV booking in taxi apps)
b) Coordinated infrastructure rollout (136 charging stations by June 2024)
c) Policy innovations (10-year EV tax exemption, EV transition deadline of Sept 2025)
d) Blended financing packages (e.g., $4.5M EBRD funding to Rakhsh Taxi)
e) Clear integration of multiple knowledge types: technical, financial, operational, and regulatory

However, while multi-actor collaboration is strong, the structured inclusion of lay actors or civil society in the problem-definition or design process is limited. User needs (e.g., affordability, service access) are considered, but not through formalized user-centered design or participatory co-creation platform, the finding supported also by the survey. According to the survey, the solutions have not led to any radical innovations, but has instead allowed the collaborative stakeholders to find joint solutions to collective

problems with great success. This has, in turn, resulted in considerable success in rolling out the co-creation initiative and sustaining its momentum.

If possible, please insert your survey responses in the table below (in % for each response), including the mean/average % for each survey item.

| | Strong. dis. | Dis. | Slight. dis. | Neither agr/dis | Slight. agree | Agree | Strong. agree | Mean |
|---|---|---|---|---|---|---|---|---|
| 1. Problem-solving mobilized different experiences, and/or ideas and/or forms of knowledge to develop new perspectives | | | | | | 20 (100%) | | 2 |
| 2. Through the collaborative problem-solving process, different experiences and/or ideas and/or forms of knowledge have been mobilized to search for unconventional solutions | | | | | 10 (50%) | 10 (50%) | | 1.5 |
| 3. The collaborative problem-solving process mobilized different experiences, and/or ideas and/or forms of knowledge to search for solutions that go beyond standard/text-book solutions | | | | | 10 (50%) | 10 (50%) | | 1.5 |
| 4. The co-created solution breaks with established practices | | | | | | 20 (100%) | | 2 |
| 5. The co-created solution disrupts conventional wisdom | | | | | 20 (100%) | | | 1 |
| 6. The co-created solution offers new ideas to address the green transition problem | | | | | | | 20 (100%) | 3 |
| 7. I'm supportive of the co-created solution | | | | | | 20 (100%) | | 2 |
| 8. I'm content with the overall collaborative process of the project | | | | | | 20 (100%) | | 2 |
| 9. I feel the multi-actor collaboration process was a prerequisite for the success of the project | | | | | | | 20 (100%) | 3 |
| 10. I'm satisfied by the results of the co-creation effort in terms of expected impact on the welfare of the community | | | | | | 20 (100%) | | 2 |
| 11. The collaborative interaction in the project has led to an innovative solution | | | | | | | 20 (100%) | 3 |
| 12. The actors involved in the project are engaged in | | | | | 10 (50%) | 10 (50%) | | 1.5 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| collaborative interaction that stimulated creative problem-solving | | | | | | | | |
| 13. The co-created solution meets the proposed goals of the project | | | | | 10 (50%) | 10 (50%) | | 1.5 |
| 14. The co-created solution will be durable and robust in the long run | | | | 10 (50%) | | 10 (50%) | | 1 |
| 15. The co-created solution is expected to significantly improve sustainability for the whole community | | | | | | | 20 (100%) | 3 |

**2. Does the developed solution engender a green transition[1]?**

| QCA score: | Scoring confidence: | Data sources: |
|---|---|---|
| ☐ 0 | ☐ Low confidence | ☐ Survey |
| ☐ 0.33 | ☐ Medium confidence | ☒ Interviews |
| ☐ 0.66 | ☒ High confidence | ☒ Documents |
| ☒ 1 | | ☒ Observations |

Please elaborate on the reasoning behind your scoring for this part of the governance factor, including the data sources used for the scoring:

The Dushanbe Green Taxi project has clearly produced and is expected to expand a green transition. Key outcomes include:

a) Deployment of 2,450+ electric taxis in Dushanbe as of June 2024
b) Establishment of 136 EV charging stations
c) Projected annual $CO_2$ emission reduction of 1,240 tons
d) Integration into Tajikistan's 95% renewable electricity grid, maximizing decarbonization
e) Ongoing expansion into e-bus projects, metro planning, and regional replication
f) Strong alignment with Tajikistan's updated NDC targets and SDGs 7, 11, 12, 13
g) Structural institutional support (e.g., 10-year tax exemptions, electric transport development program 2023–2028)

This transformation reflects a system-level green shift that is measurable, replicable, and embedded in long-term policy. Vast majority of respondents unanimously believe that the project is producing and will continue to generate a positive green outcome.

If possible, please insert your survey responses in the table below (in % for each response).

| 1. The project: | **Yes** | No | **Don't know** |
|---|---|---|---|
| …did not produce any green transition solution | | 99% | 1% |
| …is expected to produce/has produced a green transition | 100% | | |

[1] By "green transitions", we mean objectives and aspirations that correspond to at least one of the Green SDGs (SDG 6, 7, 11, 12, 13, 14, 15). The project does not have to refer explicitly to the green SDGs, but the project's green objectives

| | | | |
|---|---|---|---|
| solution aiming to avoid a worsening in the status quo | | | |
| …is expected to produce/has produced a green transition solution aiming to maintain the status quo | 100% | | |
| …is expected to produce/has produced a green transition solution aiming to improve the status quo | 100% | | |

**Please list all the informants you have interviewed for the case study (list project role + interview date):**

CIPI, Lawyer, December 12, 2025

CIPI Director, December 16, 2025

OSFTJ, Fianance Director, December 16, 2025

Head of Branch, Country Representative ICAP at Columbia University, December 11, 2025

Regional Director of SecDev Group, December 14, 2025

Green Taxi Driver, December 12, 2025

Professo, Department of Economics and Business, Tajik State University of Commerce, December 12, 2025

WB Consultant, December 15, 2025

WB Consultant, January 6, 2026

Director of KurushLLC, December 15, 2025

Lawyer, Center ofr Civil Rights, December 13, 2025

Director of Programs ACTED, December 17, 2025

Environmental Activist, Director of Youth Ecological Center, December 15, 2025

Executive Director, American Chamber of Commerce in Tajikistan, December 14, 2025

Commercial Director, Siyoma Production LLC, December 12, 2025

ADB Consultant, December 15, 2025

Education quality specialist of Department of Strategic Development and Quality Management System, Tajik State University of Commece, December 14,2025

Deputy Head of Department for Domestic Public Debt Analysis and Management, Head of the Division for Domestic Debt Analysis, Securities Issues, and Green Financing, *Ministry of Finance of the Republic of Tajikistan*. February 2, 2026

Director Dushanbe Smart City, January 7, 2026

UNDP, December 8, 2025

**Please list all the observations you have made during meetings and interviews:**

N/A

**Please list all the documents you have analyzed (document name + source + year):**

Dushanbe Electrification Concept 2023–2026 (City Gov, 2023)

A European Union project is supporting Tajikistan to promote electric mobility (Decca, 2025)

Tajikistan is betting on electric vehicles (Khovar, 2025)

EBRD Green City Action Plan: Dushanbe (2022–2024)

Asia-Plus coverage of EV rollout and infrastructure progress (2023–2024)

Presidential speeches and national adaptation strategy references (2021–2024)

***Strategy on Green Economy Development in Tajikistan in 2023-2037***
Dushanbe Green City Action Plan (GCAP), developed jointly with the EBRD (2025).
"Concept for the transition to an electric passenger transport system in the city of Dushanbe for 2023-2026"

**State Program for the Development of Electric Transport (2023–2028)** – approved by *Government Decree No. 532 (31 Oct 2022)*, outlining legal framework and goals for EV deployment, infrastructure, tax incentives, and industry development in Tajikistan. (Tajikistan News in English)

**Amendments to the Tax Code & Customs Regulations** – EVs (including electric cars, buses, etc.) are **exempt from customs duties and taxes (VAT, excise) for a fixed period** to promote green transport adoption. (ICNAST)

**Updated Transport Tax Rates (2025)** – includes reduced annual tax rates for electric vehicles (50 % of fossil-fuel vehicle rates) under changes in Article 360 of the Tax Code approved by the Majlisi Namoyandagon. (Tajikistan News in English)

**E-Mobility Country Profile (Asian Transport Observatory)** – summary of policy instruments including **tax exemptions, priority access measures, and regulatory support for EVs** embedded in the national development program. (Asian Transport Observatory)

**Dushanbe Mayor's Electric Taxi/Transport Decree (June 2024)** – official orders requiring **taxi companies in Dushanbe to fully transition to electric vehicles by September 1, 2025** (part of the city's "Electric Public Transport Transition" program).

**Concept & Action Plan for Electric Passenger Transport (2023-2026)** – local strategic document approved by city authorities for transitioning all passenger transport (including taxis) to electric vehicles (referenced in government and news coverage). (Tajikistan News in English)
**Implementation and Oversight of Taxi Licensing & EV Transition (2025)** – Dushanbe city administration limited the number of licensed taxi companies and enforced compliance with EV transition standards (including cameras, cashless payment, receipts).

**Dushanbe Progress Reports on Electric Transport Implementation** – coverage of partial implementation, charging infrastructure buildout, and official responses to the 2025 transition deadline.

**Press Briefings & Transport Ministry Releases (Ministry of Transport of Tajikistan)** – announcements of increasing EV imports, broader electrification strategy, and transport sector modernization supporting EV policy. (mintrans.tj)

**Local Government Publication (HAN "Khovar")** – details of city transport policies directing taxi fleets to convert to electric vehicles and associated enforcement roles of transport and regulatory bodies. (Khovar)

**Please note the response rate for the survey/measurement of outcome variable:**

The survey has been adjusted and similified to reflect the country and city context, the research team has recieved 20 responses out of 22 requests, with response rate close to 100%.