

# Bishkek's electric trolleybuses under threat from ADB-funded transport overhaul



A Bishkek trolleybus powered by electricity from dual overhead wires. Photo: [Save Bishkek's Trolleybuses initiative](#)

In recent years, public concern has grown over rising levels of air pollution in Bishkek. According to IQAir, an air quality information platform, Bishkek often ranks among the world's most polluted cities. In an effort to address this issue, Bishkek City Hall plans to purchase 120 electric buses as well as a fleet of compressed natural gas buses.

It also seems increasingly likely that these new buses will replace the city's most environmentally friendly mode of transportation – the trolleybus. Bishkek's iconic trolleybus system, operated by a municipal enterprise called Bishkek Trolleybus Department, is currently Kyrgyzstan's only form of electric public transport.

To finance the transition, the Asian Development Bank (ADB) has approved<sup>1</sup> a USD 50.65 million package for Kyrgyzstan's Urban Transport Electrification Project (UTEP). This includes a USD 25 million loan, a USD 25 million grant, and an

<sup>1</sup> Asian Development Bank, [ADB Approves \\$51 Million Battery-Electric Bus Project in the Kyrgyz Republic](#), *Asian Development Bank*, 1 December 2021.

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additional USD 650 000 in co-financing from the High-Level Technology Fund, a financial mechanism operated by the ADB.<sup>2</sup>

According to the ADB, the aim of the project is to develop Bishkek's transport infrastructure, reduce carbon emissions, and improve air quality. Their three-step plan involves:

- purchasing 120 modern battery-electric buses to replace the city's outdated diesel buses and trolleybuses;
- upgrading the infrastructure at two trolleybus depots; and
- establishing a 3.5-kilometre green mobility pilot corridor to increase bus speed and improve the public transport service.

## Environmental impact of traffic in Bishkek

The transport sector is a major contributor to air pollution in Bishkek. Bishkek's urban transport network is also under severe strain. According to the mayor's office, the city's road and transportation system is designed for 40,000 cars, yet over 400,000 are registered in the city.<sup>3</sup> The Organisation for Economic Co-operation and Development (OECD) has calculated that the transport sector in Kyrgyzstan accounts for 28 per cent of nationally determined greenhouse gas emissions.

Therefore, a sound public transportation strategy is critical if the city is to successfully tackle the effects of the climate crisis and air pollution. Combining mass electrified public transport with non-motorised vehicles offers the greatest potential to reduce air pollution in the city.

## Trolleybuses are an efficient form of electric public transport

Trolleybuses, which first appeared in Bishkek (formerly Frunze) in 1951, remain one of the city's calling cards. Since then, the trolleybus network has grown every year, connecting areas with the highest demand.

Today, Bishkek Trolleybus Department operates 144 trolleybuses (running on 11 routes in Bishkek), three training vehicles, and one cargo trolleybus. Based on a single-track calculation, the total length of the network spans an estimated 400 kilometres. Comfortable, spacious and cost-effective, the trolleybus is the most environmentally friendly and cheapest mode of transport in the city. With several categories of residents enjoying free travel, it also plays an important role in supporting disadvantaged citizens.

In 2011, the European Bank for Reconstruction and Development approved a public transport loan to modernise the city's ageing trolleybus fleet and infrastructure,<sup>4</sup> which led to Bishkek Trolleybus Department purchasing 50 low-floor and 81 medium-floor trolleybuses: a loan of EUR 15 million and a grant of EUR 8.4 million. This upgrade has helped save up to 3 million kilowatt-hours (kWh) per year and reduce

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<sup>2</sup> Asian Development Bank, [Kyrgyz Republic: Urban Transport Electrification Project](#), Asian Development Bank, accessed 25 April 2024.

<sup>3</sup> Azamat Aitbaev, [Бишкек рассчитан на 40 тысяч машин. По факту их больше 400 тысяч. – мэрия](#), *Economist.kg*, 21 October 2019.

<sup>4</sup> European Bank for Reconstruction and Development, [Bishkek Public Transport Project](#), European Bank for Reconstruction and Development, accessed 25 April 2024.

carbon dioxide emissions by up to 5,650 tonnes annually. However, since then, no new trolleybuses have been purchased.

In 2019, the deputy mayor of Bishkek, Maxim Sitnikov, announced that Bishkek City Hall was planning to purchase hybrid trolleybuses, which would use battery power to run on some route sections.<sup>5</sup> However, since the political upheaval of 2020, the plan seems to have been abandoned in favour of investing in electric buses.

## Bishkek's public transport at a crossroads

The ADB's public transport electrification project will see a fleet of electric buses partly replacing the city's iconic trolleybuses,<sup>6</sup> a move likely to determine the efficiency of public transport, air quality, and the health of Bishkek's citizens for decades to come. The value of the project amounts to 20 per cent of the city's annual budget of USD 257 million for 2023. Other than that, there is very little information on the proposed plan or how it will impact the city.

According to an official statement from Bishkek City Hall, the plan to replace the trolleybuses with electric buses stems from the belief that the current fleet is outdated and that, bizarrely, the network **negatively affects the appearance of the capital.**<sup>7</sup>

## Fossil gas-powered buses set to increase

Controversially, despite the ADB electrification project, Bishkek City Hall plans to maintain and increase the number of buses powered by fossil gas. With 744 buses on the books as of December 2023, the plan, according to the mayor of Bishkek, is to increase the fleet to 1,500 by the end of 2024, which would lead to a dramatic increase in the use of compressed natural gas.<sup>8</sup> There's a real likelihood that the electric trolleybus system will be partly replaced with a new fleet running on planet-heating fossil fuels.

## Limitations of electric buses

Unlike trolleybuses, which rely on a constant supply from the electricity grid, electric buses run on rechargeable batteries. But this need to recharge the batteries increases downtime, which in turn requires more vehicles to meet demand. Moreover, batteries are highly sensitive to the dramatic changes in outdoor temperature that characterise the region. In other words, their efficiency and reliability can be drastically reduced. Additionally, the city's fire brigade is not equipped to deal with potential fires from these batteries, which can only be extinguished with special equipment. Compounding matters, Kyrgyzstan lacks a system that ensures the responsible disposal of batteries.

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<sup>5</sup> Maria Orlova, '[Bishkek plans to purchase hybrid trolleybuses](#)', *24.kg*, 19 January 2019.

<sup>6</sup> Asian Development Bank, '[ADB Approves \\$51 Million Battery-Electric Bus Project in the Kyrgyz Republic](#)', *Asian Development Bank*, 1 December 2021

<sup>7</sup> Mayor's Office of Bishkek City, Development of Public Passenger Transport and Road Transport Infrastructure in Bishkek No. 9-166, *Bishkek City Hall*, 27 March 2024.

<sup>8</sup> Kaktus.media, '[За счет автобусов на газе мэрия сэкономила 500 млн сомов](#)', *Kaktus.media*, 15 March 2024.

## Moving the trolleybus system to another city?

In another twist, City Hall recently revealed they are now considering transferring the entire trolleybus network, including vehicles and substations, to the cities of Osh, Kara-Balta and Tokmok.

This idea is deeply problematic for a number of reasons. Firstly, transferring the existing trolleybus infrastructure elsewhere will require the construction of a new network at enormous cost. Secondly, building a trolleybus network from scratch involves the installation of numerous poles and wires as well as the construction of depots, administrative buildings, medical stations, workshops with garages, dispatch centres and electrical substations. Thirdly, the network must be maintained by highly qualified specialists, and training requires additional investments.

## Public participation in decision-making and gender equality

Public interests must be prioritised when implementing any urban transport policy, and Bishkek is no different. This principle not only applies to public transport users and the 700 employees of Bishkek Trolleybus Department; it extends to everyone who breathes the city's air.

Regrettably, public interests are not high on the agenda when it comes to accessing information in Bishkek. Not only is there a general lack of access to information, the information that is publicly disseminated is often contradictory. For instance, an ADB press release from December 2021 on the approval of the project loan announced that the purchase of 120 battery-electric buses would replace outdated diesel and trolleybuses.<sup>9</sup> But during a public consultation held in May 2023, officials informed key stakeholders that the existing trolleybuses would be kept in service.<sup>10</sup>

While the ADB's gender equality assessments contain information on gender-based violence and harassment on public transport, gender balance issues in the workplace are overlooked. For instance, although many highly qualified women work for Bishkek Trolleybus Department as technical specialists and engineers, women bus drivers remain in the minority. That's why it's crucially important that the ADB does everything it can to ensure women are provided with an equal opportunity to secure employment within Bishkek's electric public transport sector.

## Recommendations for the ADB

- Help Bishkek City Hall replace diesel buses with electric vehicles rather than supporting the phasing out of trolleybuses.
- Require that electric buses purchased under the project support dynamic charging technology, eliminating the need to build new infrastructure.
- Include more indicators for gender equality assessment and focus more on women working with electric transport in addition to technical and management positions.

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<sup>9</sup> Asian Development Bank, [ADB Approves \\$51 Million Battery-Electric Bus Project in the Kyrgyz Republic](#), *Asian Development Bank*, 1 December 2021.

<sup>10</sup> Mayor's Office of Bishkek City, [Initial Environmental Examination, Kyrgyz Republic: Urban Transport Electrification Project](#), *Asian Development Bank*, 157, October 2023.

- Develop a public electrification plan based on local needs and resources. For example, one positive step would be to extend the electrified lines to the district of Maevka and the airport.

## Recommendations for Bishkek City Hall

- Maintain and develop Bishkek's trolleybus infrastructure and fleet.
- Introduce electric buses with dynamic charging in areas with no access to the trolleybus network.
- Develop the capacity of local professionals and workers.
- Involve more public groups and citizens in the decision-making process.
- Conduct special assessments and research when planning new routes for electric transport.
- Do not introduce electric buses with station charging that will destroy all the current infrastructure of the unique and efficient trolleybus infrastructure.
- Preserve and develop the cultural and historical heritage of electric transport in Kyrgyzstan.