

**Submission by the Russian Federation on matters relating to holding global dialogues in 2023 under the Sharm el-Sheikh Mitigation Ambition and Implementation Work Programme referred to decision 4/CMA.4.**

*September 2023*

The Russian Federation pursuant to paragraph 14 of decision 4/CMA.4 of the Conference of the Parties serving as the meeting of the Parties to the Paris Agreement provides suggested topics for the 2nd global dialogue and the 2nd investment-focused event taking place in 2023 under the Sharm el-Sheikh Mitigation Ambition and Implementation Work Programme.

**Just energy transition in transport systems**

In the Russian Federation, in order to ensure transition to a low-carbon economy and reduce the adverse environmental impacts of the transport sector, measures are being implemented to upgrade the fleet of vehicles and expand the use of liquefied natural gas (LNG), hydrogen and biofuel, electric vehicles (EVs), as well as to create the necessary refueling and service infrastructure.

The Russian Federation welcomes the topic of accelerating just energy transition in transport systems for the 2nd global dialogue. We are ready to share our views and expertise on the discussion subtopics.

**Resource-saving and energy efficiency in transport sector**

Resource-saving is an important element of transport sector decarbonization, as it contributes to the reduction of pollutants, as well as greenhouse gases into the atmosphere. This ensures clean and sustainable development.

Implementation of resource-saving measures in the transport sector, including the use of secondary sources in the construction and reconstruction of transportation infrastructure facilities contributes to significant reduction of GHG emissions. This is done by cutting the costs of extraction, processing and transportation of primary sources and materials, as well as reducing disposed production and consumption waste.

In terms of resource-saving in road transport, we consider the existing technology of reclaimed asphalt pavement (RAP) the most promising. This technology enables its recycling and laying out as a part of new road pavement in 24 hours. Up to 100% of milled and recycled asphalt concrete can be returned to the paving site. The ecological efficiency of this technology stems from substituting mineral and organic resources by materials, contained in recycled asphalt concrete. This approach contributes to the reduction of GHG emissions from extraction, processing and transportation of primary sources, as well as preservation of non-renewable resources.

In railroad transport, we believe that replacing of worn-out locomotives by more advanced and environmentally friendly models leads to a significant reduction of GHG

emissions. For example, the previous generations of locomotives emit up to 100 grams of carbon dioxide per ton of freight, while new models are able to reduce this figure up to 10 grams per ton. Moreover, new models of locomotives tend to use less fuel and have a more efficient waste management system, which also contributes to pollutants and greenhouse gases emissions reduction.

The Russian Federation is implementing a comprehensive project to improve energy- and resource efficiency in the transport sector. It is aimed at the creation of a unique system for monitoring, liquidation, utilization and recycling of oily liquids, as well as measurement of CO<sub>2</sub> and other GHG emissions at transport infrastructure facilities. This complex is being tested at railroad infrastructure facilities.

### **Electrification of transport**

According to IEA, in 2022 electric vehicles (EVs) enabled a net reduction of about 80 Mt of GHG emissions. It is estimated, that the use of EVs will help to avoid nearly 770 Mt of net GHG emissions of CO<sub>2</sub>-eq in 2030.

Electrification is a priority for the development of **railroad transport** in the Russian Federation, as it contributes to significant decarbonization of the whole transport sector. Rail electric passenger transport is the cleanest mode of passenger transport in terms of emissions, as there are almost no direct CO<sub>2</sub> emissions. Already, 85% of all passengers and cargoes on Russian railways are transported by using electric traction. Programs for further electrification of railway, as well as other modes of transport have been developed.

Electrification of **water transport** is actively developing. Electric powered passenger ships are being developed and built, workboats with hybrid engine are in operation. Ice class boats have been developed using modern technical solutions in the field of electric propulsion. Deployment of propulsion electric engines enables optimizing operation costs, expanding service life of shipboard equipment, reducing fuel consumption and adverse environmental impacts.

The renewal of public transport fleet with more environmentally friendly and energy efficiency vehicles and deployment of models on alternative fuels (gas, hydrogen, biofuels), as well as hybrid and electric vehicles are among the main measures of decarbonization in **road transport**.

A set of measures of public support for production and usage of electric vehicles (EVs) has been created in the Russia Federation to promote the development of electric vehicle segment and charging infrastructure. It includes subsidies for preferential car loans and leasing, the creation of “fast” charging stations in pilot regions and parking lots with electric charging stations for EVs. The growth rate of EVs and battery segment indicates that in the long-term it may become the main source of demand for high-grade nickel.

From the beginning of 2022 to August 2023 with the help of the implementation of the abovementioned measures the growth of electric vehicle fleet (cars) in the Russian Federation amounted to 102% (from 17 100 to 34 500 units). The production volume of

electric vehicles (cars) amounted to more than 5 000 units, more than 500 units of subsidized fast charging stations were created in Russia and more than 15 billion rubles of private investments have been attracted to the motor transport industry.

Electrification of the **aviation sector** is facing challenges because of the physical characteristics of batteries. The weight of batteries makes electrification as a viable option only in the short-haul flights. Only hybrid-electric solutions are suitable for medium- and long-term hauls flights

### **Shifting to low- or zero-carbon fuels**

We believe that the use of **natural gas** in transport sector has a high potential. For example, shifting to liquefied natural gas (LNG) enables carbon dioxide emissions reduction by 20-25% compared to the use of conventional fuels.

The Russian Federation is one of the biggest producers of natural gas in the world. According to the Russian energy strategy, by 2035 the consumption of gas-engine fuel is expected to increase 15-19 times compared to 2018.

Low-tonnage LNG plants are being built and retail network for the use of LNG as gas-engine fuel and for autonomous gasification is developing in the Russian Federation.

In the field of developing low-carbon means of public transport in Russia, cars and buses using LNG and CNG are produced. In railroad transport a LNG-powered locomotive has been developed. It consumes 60% less fuel in comparison to diesel locomotives. In water transport Russia operates dual-fuel automobile-railroad ferries with the main electric engine enabling usage of low-sulfur diesel fuel as well as LNG. An LNG-powered river passenger vessel has been built.

The Russian Federation works on the development of **hydrogen transport**. A city Hydrobus is being developed and modernized to bring it to serial production. Construction of a pleasure-excursion vessel with a power plant running on hydrogen fuel is underway. We are implementing a project on passenger trains powered by hydrogen fuel cells (B-train) for Sakhalin Island. It is planned to create an integrated hydrogen technology, which includes the production and transportation of hydrogen, as well as refueling equipment.

In conclusion, we note that transport sector is one of the key areas of the Russian economy. Transport infrastructure is developing in accordance with national and regional development goals and priorities and with the use of best technologies. The Russian Federation has considerable experience in building transportation facilities and supporting infrastructure in different natural and climate zones. We are ready to share this expertise with our partners.