



MOSCOW
ECONOMY



MOSCOW DEPARTMENT
FOR ECONOMIC POLICY
AND DEVELOPMENT



城市创新
Guangzhou Institute for
Urban Innovation

BRICS Urban Climate Agenda Report



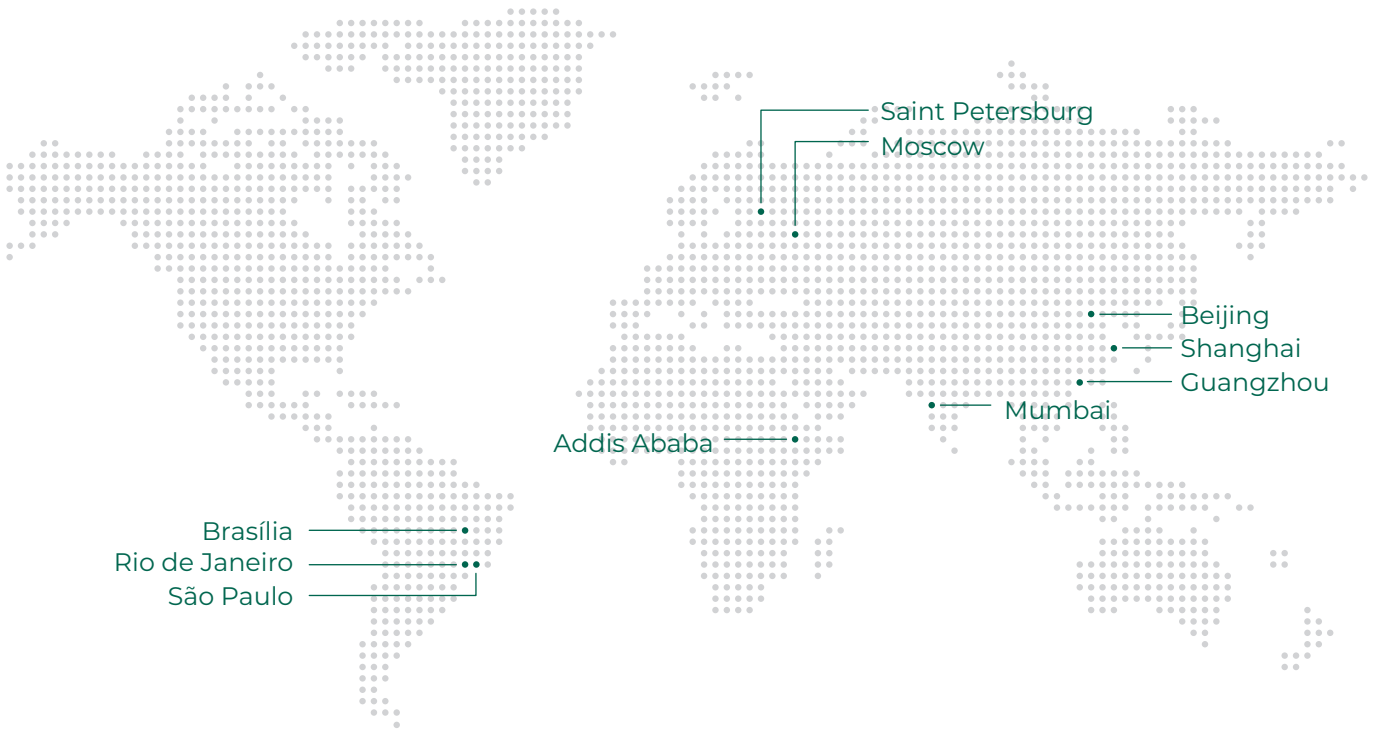
August 2024



Results

Results

Leaders



Balanced leaders

Guangzhou, Moscow, Mumbai, Beijing, Saint Petersburg, and Shanghai are the leading cities, having the most balanced approach to sustainable development in key areas of city operations in terms of their impact on climate. All of them **performed better** than the average for the 20 cities in the report on most of the quantitative indicators.



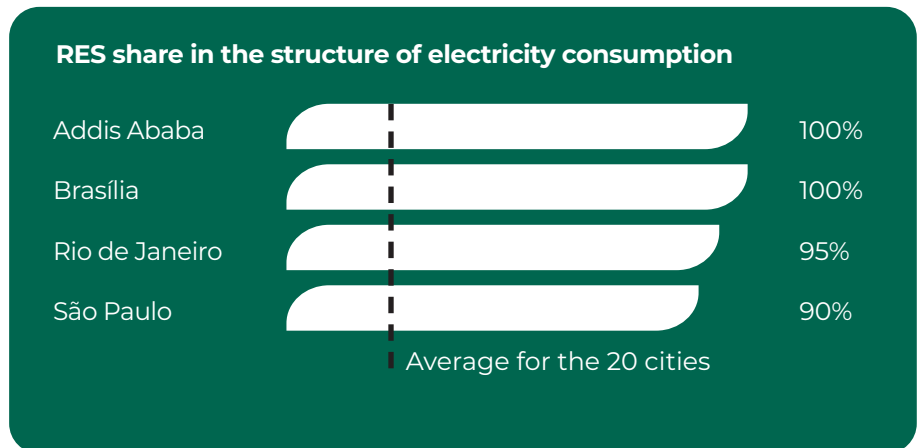
- Average points for Guangzhou, Moscow, Mumbai, Beijing, Saint Petersburg and Shanghai
- Average points for the 20 cities

Guangzhou, Moscow, Mumbai, Beijing, Saint Petersburg and Shanghai have the most balanced approach to sustainable development in key areas of city operations in terms of their impact on climate change



Renewable energy leaders

Addis Ababa, Brasília, Rio de Janeiro, and São Paulo received high final scores due to a significant lead over other cities in one or two categories. All four cities have **the highest share of renewable energy sources (RES)** in the structure of electricity consumption among all the cities, but the **penetration of clean transport** in their transport systems **is comparatively low**. Thus, these cities have considerable **untapped decarbonization potential** in some sectors of their economy.



Global leaders

Moscow, Beijing, and São Paulo also made it into the top 10 of the last year's edition of the study, which assessed 20 major cities from various regions of the world. As **leaders of the climate agenda both at the BRICS and global level**, these cities can share valuable experience of combating climate change for city governments around the world.

Climate planning in BRICS cities

More than half of the cities in the study have adopted city-level climate strategies, including a comprehensive action plan to reduce greenhouse gas emissions in the key emitting sectors and corresponding medium- and long-term targets that are an important factor showing the commitment of BRICS cities to the climate agenda.

Level of economic development does not determine the cities' final results

The results of the research show that there is **no direct connection between the final scores of the cities and the level of their economic development**: the correlation coefficient between the final scores and the per capita city's GDP at PPP is practically zero.

The results indicate **the dual nature of the impact the economic growth** has on the progress of BRICS cities in combating climate change. On the one hand, as a result of socio-economic development, city administrations have **more opportunities to implement measures aimed at decarbonization**. However, at the same time,

economic growth is directly related to rising consumption of the resources necessary to ensure it, which can cause an increase in the carbon footprint of cities.

The identified feature indicates **the importance of implementing a comprehensive climate policy at the city level** in order to compensate for the negative impact of the growth in consumption of energy resources and goods on the climate by switching to a low-carbon development trajectory.

Energy Sources: development of renewable energy sources is one of the priorities

Own power generating capacity of most cities in the study is insufficient to cover their electricity needs, with some cities almost entirely dependent on external energy supplies. In this regard, **the structure of power generation at the national or regional level defines how much clean energy is consumed by individual cities.** For example, in the Brazilian cities and Addis Ababa, a high proportion of electricity is from renewable energy, where generation comes from large hydroelectric power plants located in other regions that supply electricity to the unified grid.

Importantly, climate plans and energy strategies of most cities have goals to increase the share of renewable energy in their energy consumption structure. In 11 cities, one of the priority areas is stimulating the development of distributed energy generation based on solar power. This approach involves installing solar panels in close proximity to places where electricity is consumed, in particular on the roofs of houses.

Also, in their strategy documents, a number of cities have declared their intention to boost cooperation with neighboring regions to create large generating capacities based on renewable energy sources.

Number of cities that have established clean energy targets, by target category

Development of distributed solar energy solutions	11
Increasing imports of clean energy from outside city boundaries	5
Investment in large-scale renewable energy projects	1



11 out of 20

cities stimulate the development of distributed energy generation based on solar power



14 out of 20
cities aim to reduce
the use of private
cars

13 out of 20
cities aim to increase
the share of electric
buses and buses
using clean fuels



Number of cities that have established energy efficiency targets, by target category



Energy Consumption: focus on improving the energy efficiency of buildings

Unlike power generation, where city governments may have limited influence, **improving the energy efficiency of the urban economy is under their control.**

The analysis of city plans and strategies shows that **many cities focus on increasing the energy efficiency of buildings:** 12 cities have goals to ensure that newly constructed buildings have high energy efficiency. The main tool to achieve this in most cases is the introduction of **«green» standards in construction and mandatory requirements for the use of energy-saving technologies.** Goals for increasing energy efficiency in existing buildings, also set in most cities, include measures to stimulate the use of energy-saving equipment and implement comprehensive programs for the energy-efficient modernization of residential, commercial and municipal buildings.

Transport: expanding the city’s clean vehicle fleet and encouraging people to stop using private cars with internal combustion engines

Today, the transport systems of the BRICS cities in the study differ significantly from each other in terms of both what kinds of transport residents use and what makes up the public transport fleet.

Number of cities that have established targets to decarbonize the transport system, by target category



Leading cities have a higher proportion of residents who prefer using alternative modes of transport to personal cars for regular travel. The differences in the level of electrification of public transport are even more pronounced: along with cities where electric buses make up the majority of the bus fleet (Guangzhou, Shanghai, Beijing), there are operating on cities where the first electric vehicles are only planned to start operating on regular routes (Dubai, Pretoria).

At the same time, in varying degrees **all climate plans and city strategies have goals to decarbonize the transport system.** Most commonly, municipal strategies aim to increase the share of electric buses and buses using clean fuels (13 cities), and reduce the use of private cars with internal combustion engines in favor of green vehicles and alternative modes of transportation by creating an appropriate infrastructure and introducing financial incentives (14 cities).

Green Spaces: a common adaptation and mitigation tool in BRICS cities

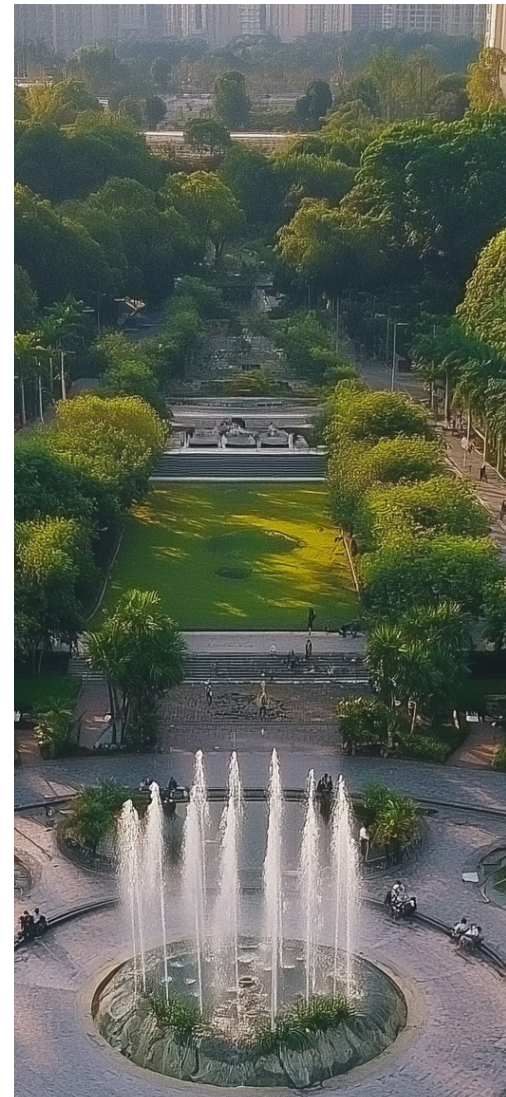
There are significant differences in terms of how much green spaces the cities have. This is caused by both climatic and territorial factors, in particular, some cities historically have large forested areas within their administrative boundaries. In this regard, **the ability of city governments to increase the area of green spaces is limited by the conditions that have developed over time in their area.**

However, climate plans of all the cities in the study contain provisions aimed at preserving existing green spaces and creating new ones. Among the goals set by the BRICS cities are increasing the ratio of green spaces to the city's territory (12 cities), planting trees and increasing the area of green spaces (10 cities), and creating and restoring protected natural areas (4 cities).

Number of cities that have established targets for urban green spaces, by target category



Not surprisingly, urban green spaces are considered as a mitigation tool mainly in cities that already have large forested areas within their administrative borders. In cities where such ecosystems are absent, greening is aimed primarily at increasing the resilience of the urban environment to climate change.



12 out of 20
cities increase the ratio of green spaces to the city's territory

10 out of 20
cities plant trees and increase the area of green spaces

4 out of 20
cities create and restore protected natural areas





18 out of 20

cities aim to improve the waste management systems

Waste: on the way from landfilling to recycling

In the BRICS cities, the per capita mass of municipal solid waste (MSW) is lower than that in the cities in the last year's study (424 kg per year versus 462 kg per year). In the area of waste management, the situation is opposite: the share of MSW disposed of in landfills is significantly higher in the BRICS cities than that in the cities from last year's study (61% versus 45%).

At the same time, **the differences in approaches to MSW management among the BRICS cities are quite significant** — while some cities have completely or almost abandoned waste disposal in landfills (Guangzhou, Beijing, Shanghai), in most other cities the overwhelming proportion of MSW is still sent to landfills.

The waste management policies of BRICS cities are largely focused on improving the MSW management system and transitioning from landfilling to recycling. Measurable targets in this area are set in the climate plans and sectoral strategies of 18 cities. The key mechanisms for achieving them are stimulating separate waste collection and increasing recycling capacity.

Number of cities that have established waste management targets, by target category

Improving the waste management system		18
Waste reduction		5