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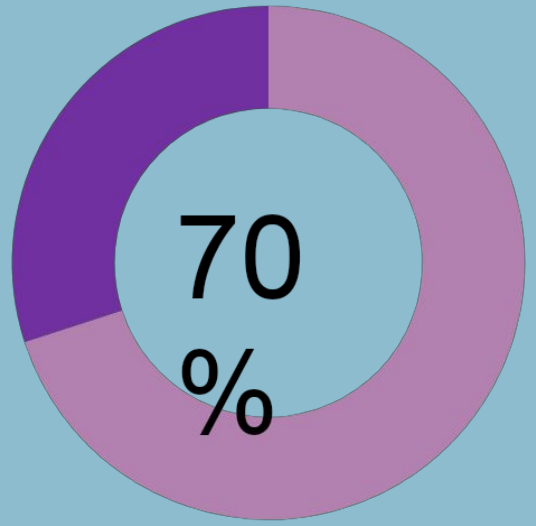
1957


Ecological
Renaissance
How planning a new urban and built environment can help Kazakhstan achieve a successful transition to sustainable and low-carbon energy systems

The reason is that we burn coal



According to official data, approximately 70% of electricity in Kazakhstan and more than half of all greenhouse gas emissions affecting the climate come from coal burning

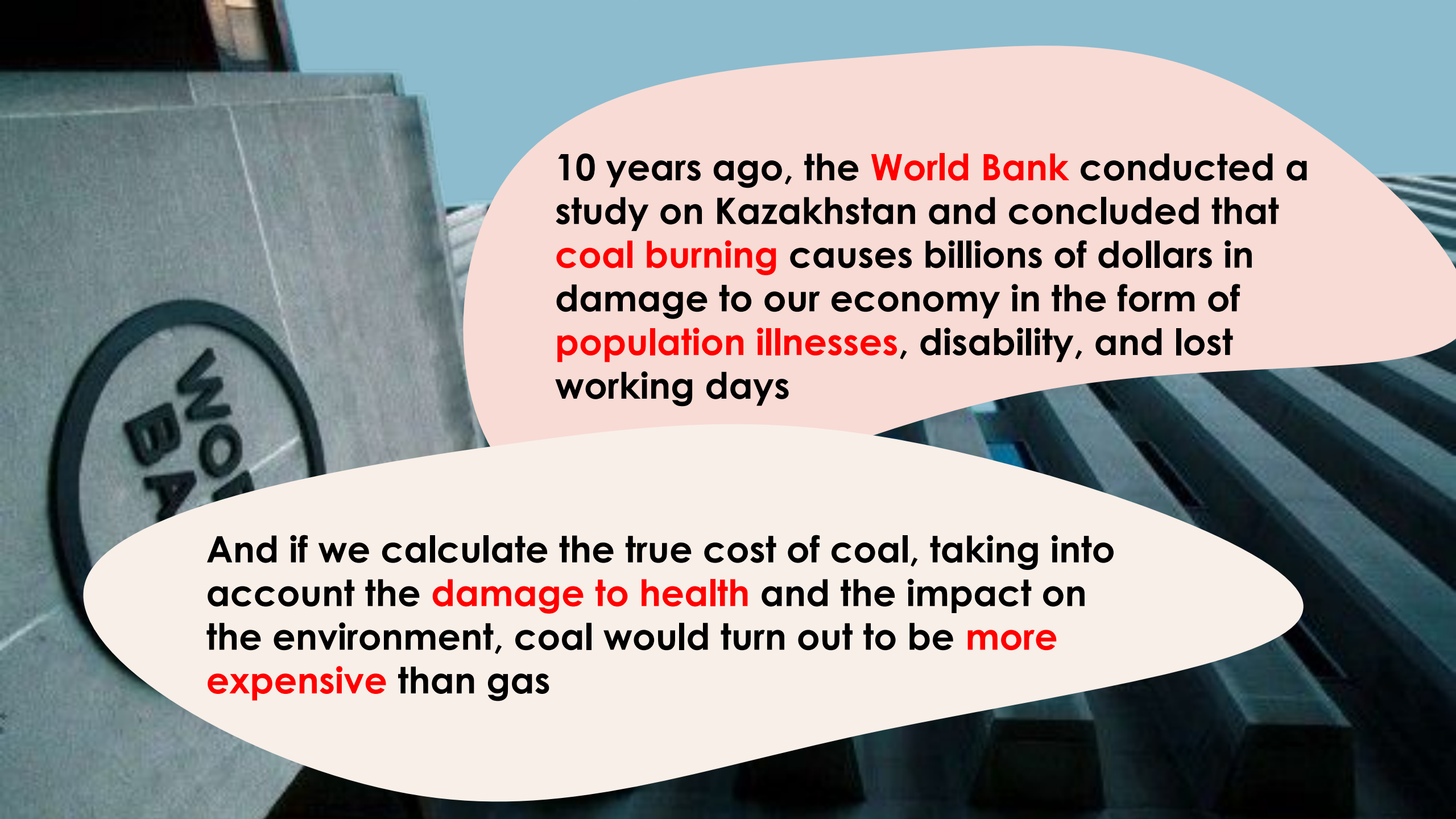
In 2018, a decision was made to gasify Astana. The city administration has a plan for gasification, but they are slightly behind schedule

Previously, some officials argued that the capital did not need gasification because of the consistently strong winds. However, now we cannot rely on it, as there is intensive urban development within the city.

The measures should be comprehensive. We proposed to the city administration to expand the number of socially vulnerable categories of citizens eligible for benefits in gasification

It is also necessary to review the cost of the service itself. Owners of private houses complain that installing gas is **expensive**

10 years ago, the World Bank conducted a study on Kazakhstan and concluded that coal burning causes billions of dollars in damage to our economy in the form of population illnesses, disability, and lost working days



10 years ago, the World Bank conducted a study on Kazakhstan and concluded that coal burning causes billions of dollars in damage to our economy in the form of population illnesses, disability, and lost working days

And if we calculate the true cost of coal, taking into account the damage to health and the impact on the environment, coal would turn out to be more expensive than gas

MAIN CAUSES OF HIGH AIR POLLUTION LEVELS:

Climatic conditions (calm, fog) that lead to
in the city, exacerbated by
ana redu

Astana has 325,939 cars, not including the fact that
5,000 vehicles enter and exit the city through ou
ckpoints daily. About 2/3 of the vehicl
of operation (over 6 years)

Use of coal by private homeowners, numbering 29,000

Limited use of renewable
energy

Use of thermal power plants (TPPs)
urning high-ash Ekibastuz coal
which is not even purchased in
ring countries.

High prices for connecting to gas

The Solution

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1. Use of public transportation. Despite its seeming simplicity, as demonstrated by the experiences of other cities such as London, Beijing, Zurich, Curitiba, Bangalore, Helsinki, and Freiburg, this is the most effective method

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2. In addition to public transport, a shift to energy-efficient vehicles, electric scooters, and bicycles. Cities like Chicago, Shanghai, Barcelona, Montreal, Malmo, Strasbourg, Munich, Amsterdam, and Copenhagen serve as bright examples of bicycle use

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3. Launching gas-powered thermal power plants (TPPs) and installing filters on existing ones

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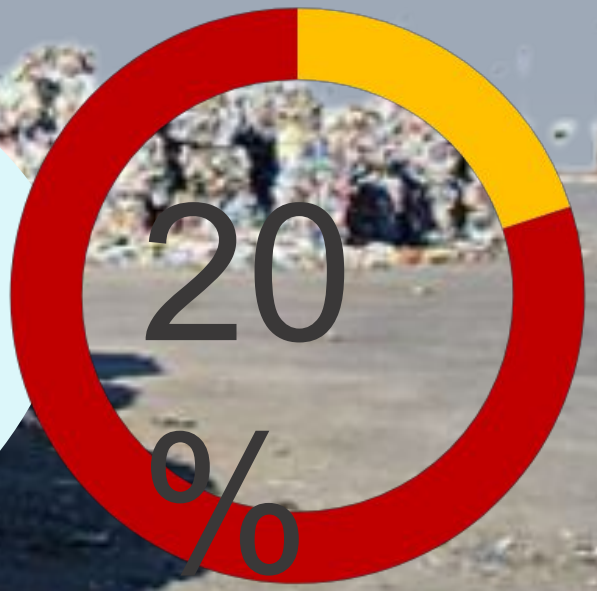
4. Population control in the city (1.5 million)

Annually, the republic generates an average of 4.5-5 million tons of municipal solid waste (MSW), of which only 20% is sorted and recycled, while the remaining volume is disposed of in landfills



According to calculations, in just 3 years, the volume of solid household waste, currently at 4.5 million tons, will reach 8 million tons per year.

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Will the country's waste management industry cope with such a load?

Calls for Kazakhstan to transition to waste sorting and recycling have been raised repeatedly, but in practice, state-owned facilities that sort and process municipal solid waste (MSW) exist only in Astana, Shymkent, and Zhangozen

The Solution

1. Expansion of the sorting and processing plant network:

Developing infrastructure for waste disposal in other regions of Kazakhstan will help increase the overall recycling capacity.

2. Increasing awareness and education:

It is crucial to conduct informational campaigns among the population about the importance of waste sorting and its impact on the environment. Educating the public can contribute to more active support and involvement in waste collection and recycling efforts.

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3.Support for private enterprises:

The government can provide financial and infrastructural support to private enterprises engaged in waste processing to stimulate their growth and increase the overall recycling rate.

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4. Implementation of modern technologies:

Utilizing advanced technologies in waste sorting and processing can enhance process efficiency and reduce the negative impact on the environment.

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5. Development and implementation of strict standards:

Strengthening regulations and standards in waste management, along with their more rigorous enforcement, can contribute to an improvement in the situation.

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"Everything is water"

-Thales of Miletus

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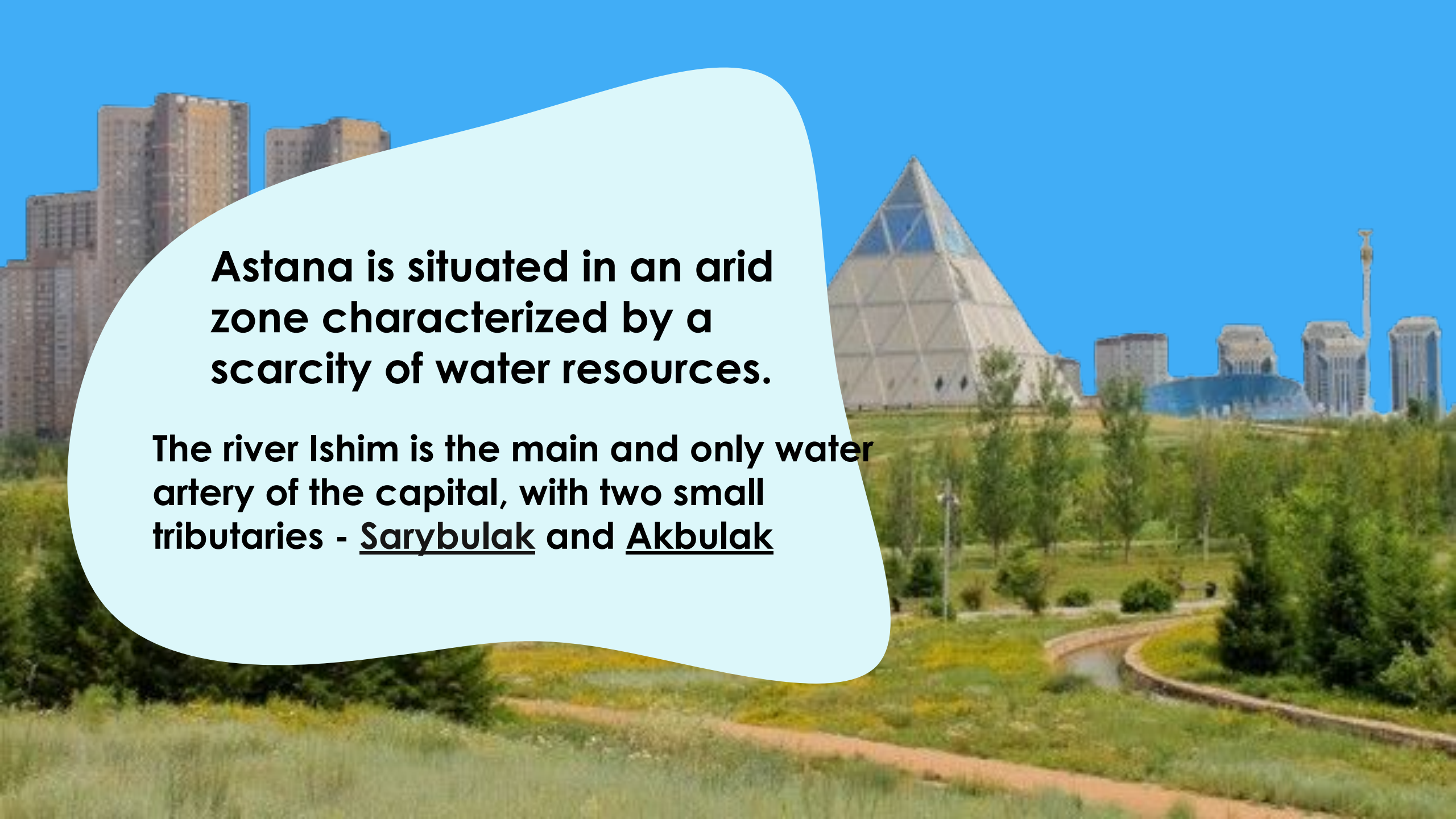
-Thales of Miletus

Water consumption has increased by ⬆15.6%

Five years ago, Astana became a city with a population of one million, and today, according to official data, the city is home to 1.3 million people



Astana is situated in an arid zone characterized by a scarcity of water resources.

The river Ishim is the main and only water artery of the capital, with two small tributaries - Sarybulak and Akbulak

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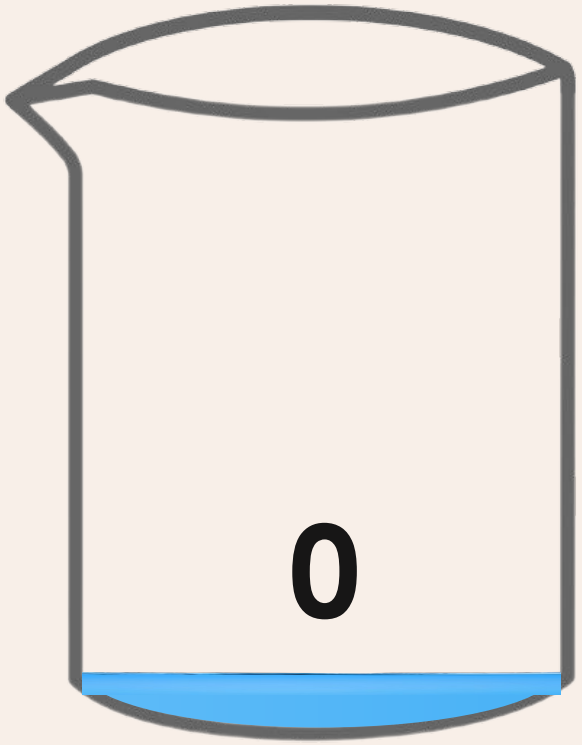
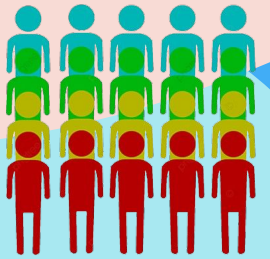
Of these, 46 million cubic meters have been used



In the year 2030, the population is projected to reach 2 million, requiring 150 million cubic meters of water



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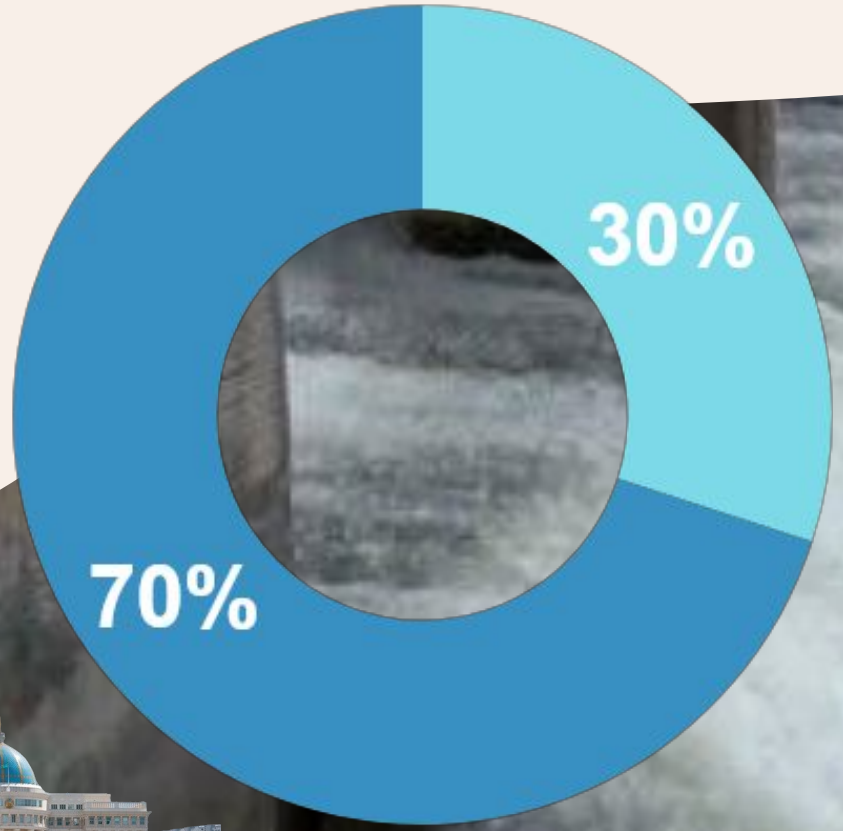
And there is a need for an additional volume of 51 million cubic meters by the end of the year

30% of the reservoir consists of sedimentation: silt and sand. Each year, approximately 1 million cubic meters of water are filled with sediment



The only source providing drinking water supply to the capital is the Astana Reservoir, constructed in 1970

Only now, after 50 years of the reservoir's existence, have efforts begun to clean it

As stated by the mayor, the new facilities will ensure the required volume of water until 2035

Astana Akim (Mayor) Zhenis Kasymbek announced the construction of a second water pipeline, measuring 44 km in length

Do you know that:

Flushing the toilet once uses 8-10 liters of water

Filling a bathtub consumes 150-200 liters of water

Taking a 5-minute shower uses 100 liters of water

An open tap can pour out approximately
1000 liters of water per hour

The Solution

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1. Construction of treatment facilities for industrial wastewater with a system for their transportation

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2. Reuse of treated wastewater in industrial water supply systems

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3. Implementation of closed-loop and zero-discharge water supply systems

4. Development of wastewater treatment methods and liquid waste recycling

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5. Implementation of an automatic monitoring system for the composition of water bodies and the volume of wastewater discharge

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