

AIR PURIFICATION FROM  
SMOG, DUST STORMS, ODORS  
OF SEWAGE TREATMENT  
PLANTS AND WASTEWATER

Offering a comprehensive solution for the MENA

# Problems with clean air in the MENA



In the MENA (Middle East and North Africa), it was found that air pollution in the Tehran is stronger than in Abu Dhabi and Dubai, probably due to increased industrial activity, high density of vehicles, and urbanization.

A large number of days a year have air quality indicators as bad and very bad for people's health due to the large number of suspended particles in the air.

With the Index pm25 norm, air pollution indicators are often in the range from pm70 to pm220 and often higher.

Air quality indicators in neighboring countries are also many times higher than the norm:

Iran: 80%: Qatar: 62%, Bahrain: 74%, Oman: 33%, Saudi Arabia: 64%, ..

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# Air quality in Tehran 2023



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# Air quality in Dubai 2023



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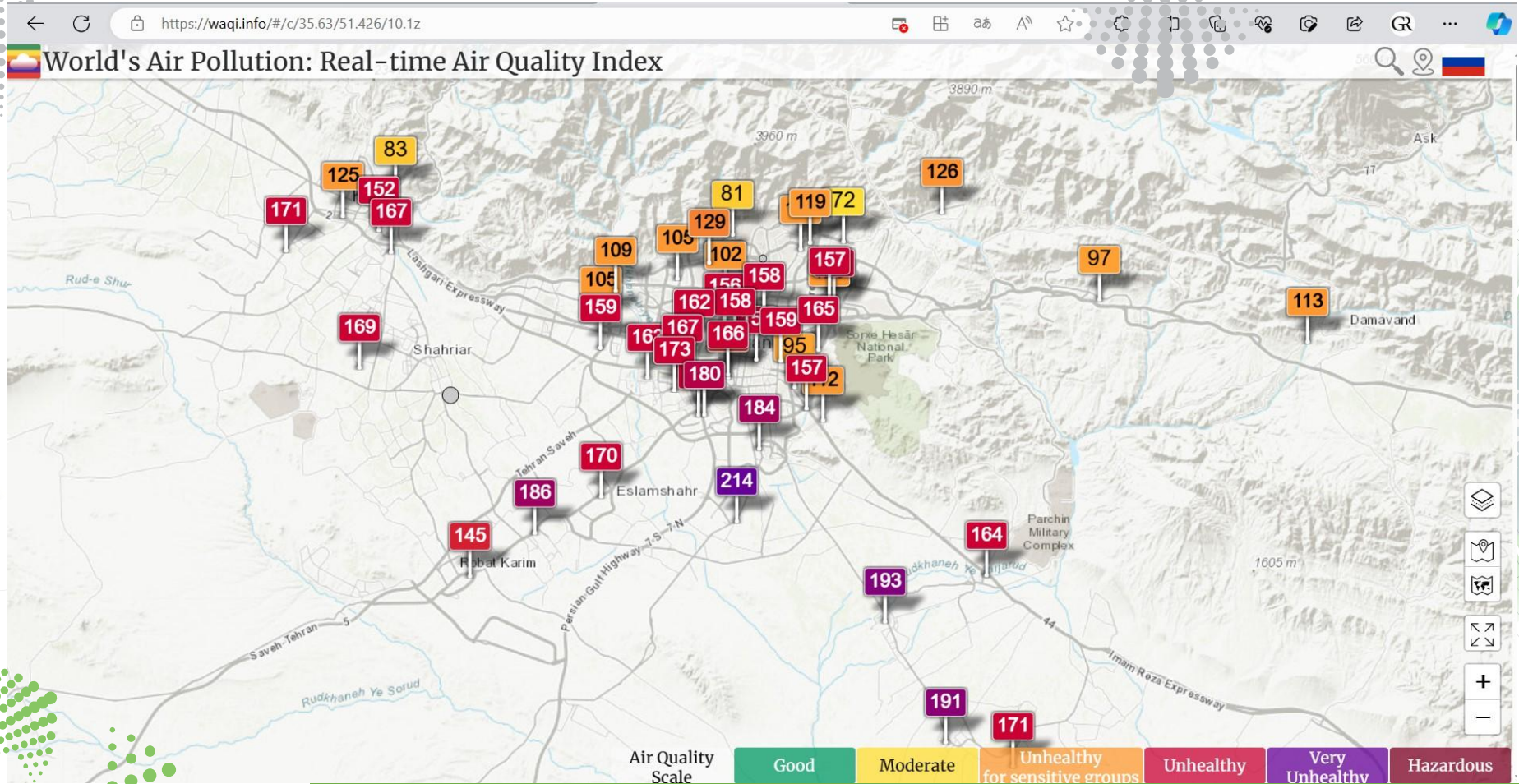
<https://aqicn.org/city/dubai>

# Air quality in China Beijing 2023



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# Air quality in Tehran 06/12/ 2023



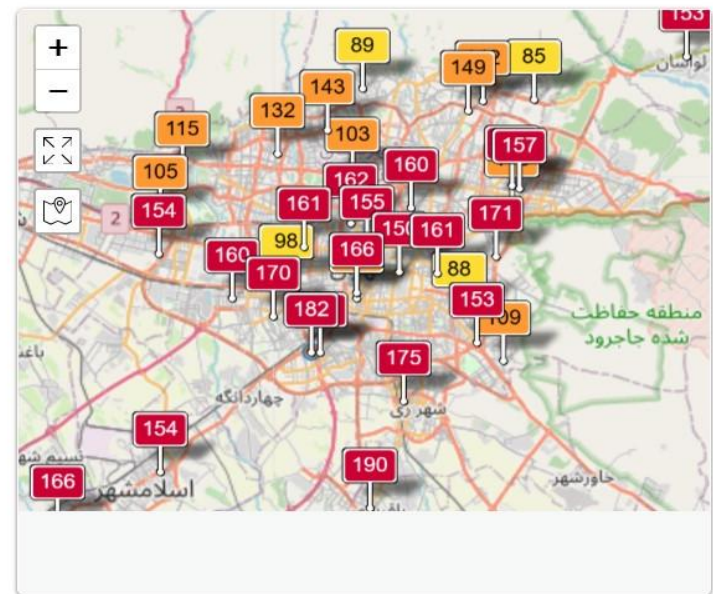
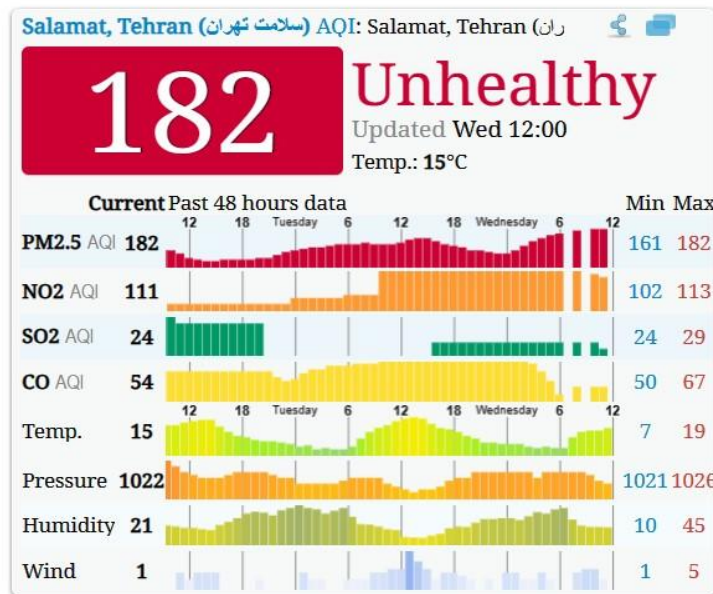
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# Air quality in Tehran 06/12/2023

https://aqicn.org/city/tehran

## Tehran Air Pollution: Real-time Air Quality Index (AQI)

SALAMAT, TEHRAN REGION 19, TEHRAN, IRAN SHAHRE REY, TEHRAN, IRAN PIROZI, TEHRAN, IRAN GHAEM, TEHRAN, IRAN REGION 11, TEHRAN, IRAN LOCATE THE NEAREST CITY SEARCH FOR YOUR CITY



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# Proposed Air purification solution

The proposed integrated autonomous air purification solution is based on technological developments of Russian scientists, tested in Russia and other countries.

## What is possible to achieve:

Significantly (tens of times) reduce the content of the main pollutants in the air - nitrogen oxide, carbon monoxide, sulfur dioxide, dust, soot, etc.) - that is, eliminate smog.



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# Demonstration of the solution



Three weather stations located at a distance of 60-80 km from each other were selected for demonstration work.

4 main indicators of air pollution were agreed upon:

- dust content in mg/m<sup>3</sup>,
- SO<sub>2</sub> content in ppm,
- CO content in ppm,
- nitrogen oxides content in ppm.

A forecast was issued by experts for the next day, and in particular it was reported that by the beginning of the work there will be a sharp increase in the dustiness of the atmosphere.

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# Demonstration of the solution

The initial indicators of atmospheric pollution were:

- ❑ Dust content – average for the last 24 hours – 188 mg/m<sup>3</sup>,
- ❑ SO<sub>2</sub> content – 0.0052 ppm,
- ❑ The content of CO is 0.72 ppm,
- ❑ The content of nitrogen oxides is 0.172 ppm.

The work was carried out in sessions of 15 minutes, the results of measurements of nitrogen oxides, carbon monoxide, sulfur dioxide were recorded constantly, the dust content was measured 1 time per hour.

Gas analyzers of the F-701-20 series were used to monitor the parameters of the air environment.

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# Demonstration of the solution

*The work started at 10:00 and ended at 17:00.*

## The Results obtained:

Upon completion of the work, the indicators of atmospheric pollution were as follows:

- ✓ Dust content - 35 mg/m<sup>3</sup> (was 188 mg/m<sup>3</sup>)
- ✓ SO<sub>2</sub> content - 0.0015 ppm (was 0.0052 ppm)
- ✓ The CO content is 0.17 ppm (it was 0.72 ppm)
- ✓ NO<sub>x</sub> content – 0.0015 ppm (was 0.172 ppm)

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# The problem with odors and air pollution



When using ground transport, odors fill the entire route and create discomfort for everyone who is located in the vicinity of the transport route and processing enterprises.

For large megacities, the problem of odors during the disposal of waste products is increasing every year. Waste removal to special places does not always work through underground utilities and sewer channels.



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# Demonstration of the solution

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## Recent application of the technology:

- ▶ Thanks to this technology, as well as the use of the "EMB" we developed to clean the air around sewage treatment plants and livestock complexes, it was possible to eliminate unpleasant odors and make the surrounding area environmentally cleaner.
- ▶ Recent results of air purification in a small town in Russia, where the air is very dirty from a poultry farm, old and badly worn out municipal sewage treatment plants and open storage of food waste, showed excellent results.
- ▶ We were tasked with cleaning the air from the stench of the city's sewage treatment plants and reducing the level of hydrogen sulfide in the city's air and water, which far exceeded environmental standards.
- ▶ Indicators of hydrogen sulfide were 61.6 mg/l, while the norm is not more than 1 mg/l.



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# Demonstration of the solution

## Recent application of the technology:

- ▶ Work with our devices was carried out within 4 days, 20 minutes every 12 hours.
- ▶ The concentration of hydrogen sulfide was measured every 5 hours by a certified gas analyzer.
- ▶ The customer recorded that after 72 hours, after 6 treatments of wastewater and air, the hydrogen sulfide content in the air dropped to 29 mg/l, and after 7 treatments of wastewater and air, the hydrogen sulfide content in the air dropped to 0.6 mg/l.
- ▶ The operation results and algorithm of wastewater and air treatment confirmed its effectiveness, and showed the possibility of using the generator "Wave" for ecological air purification above sewage treatment plants, poultry houses and other facilities having problems with wastewater and other soil, water and air contaminations.

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# Demonstration of the solution

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## Conclusions:

Using this technology, suspended particles of sand and dust in the air, falling into the zone of exposure to low-frequency electromagnetic waves of low intensity, are electrolyzed and attracted to each other, increase in mass and specific gravity, quickly lose their volatility and settle to the ground. At the same time, the air becomes clean.

The results of the work carried out convincingly demonstrated the possibility of using the "Wave" generator for ecological cleaning of the air basin over the entire territory of the country and megacities.



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# TEAM:



## Mikhail Andreevich

**Partner. Specialist in engineering and technology of basic organic synthesis.**

- Engaged in the development of new technological processes in various fields of science and technology.
- Author of 38 patents and patent applications. Energy, agricultural, gerontological, medical, and environmental programs have been created with the use of low-frequency electromagnetic fields, as well as the manufacture of special generators for them.



## Robert Kurmakaev

**Board Member, Partner**

- Extensive experience as an engineer medical equipment and service diagnostic and laboratory equipment;
- Work with investors and investment funds;
- Project evaluation specialist for financing, mergers, and acquisitions. (SPO / IPO). NYSE;
- Audit of investment projects;
- Financial modeling of projects, evaluation of investment attractiveness of projects;
- Commercialization of innovative projects;
- Organization of representative offices of companies and distribution network;
- More than 25 years of experience.



## Ilya Grigorenko

**Board Member, Partner**

- High graduated in Electronic engineering, International economic&finance and Banking, MBA, EMBA;
- More 25 years experience in projects development and management;
- Ex-Banking project manager in Societe Generale Group;
- Good experience in arrangement of international investment and financing of the high-valued and innovative projects.

