

Our target is 209 stationary stations until 2014



In addition to the stations of our Ministry, the stations belonging to Istanbul Metropolitan Municipality, Izmir Metropolitan Municipality, Ministry of Health-Refik Saydam Health Protection Center have been integrated into the air quality monitoring network. There are 106 stationary and 3 mobile stations entered in Ankara at present. Heating based pollution is measured at these stations.

Our target is to install 209 stations to be managed from 8 regional centers until 2014. The pollution parameters measured at these stations will be increased, and also the air pollution caused by traffic and industry besides the pollution caused by heating will be measured and monitored.



Regional Centers	Pollution Sources that will be measured by Stations				TOTAL
	Heating	Traffic	Industry	Rural	
Istanbul	19	9	7	4	39
Izmir	12	5	4	4	25
Konya	11	4	2	5	22
Ankara	15	6	5	7	33
Adana	10	5	5	4	24
Samsun	7	3	1	5	16
Diyarbakır	15	8	1	7	31
Erzurum	10	3	0	6	19
Turkey					
TOTAL	99	43	25	42	209

There is no other world to leave to our children! It is in our hands to reduce the air pollution...

- Significant part of the air pollution is caused by transportation. We must ensure the use of less fuel by preferring mass transportation.
- We must reduce the release of incomplete burnt gases by ensuring maintenance of our vehicles in time.
- We must use cleaner fuels for heating.
- We must attach the importance of thermal insulation in buildings to use less fuel.
- We must save energy by turning off the lights and electrical appliances at times when they are not in use.
- While buying the products such as perfumes, deodorants, refrigerators and deep coolers. We must prefer those that do not contain gases that are harmful for the ozone layer
- We must avoid from the acts (burning brazier, cigarettes that are thrown before putting out) that may cause fires in forests.
- We must avoid from burning harvested fields, plastic home appliances and trashes.
- We must pay attention to plant trees around us and the places where we live.
- We must be more conscious about air pollution. The more we are conscious about environment and air pollution, the more chance we will have in our fight to get a more beautiful, pleasant and green Turkey and a greener World with cleaner air, water and soil.



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REPUBLIC OF TURKEY
MINISTRY OF
ENVIRONMENT AND FORESTRY
 General Directorate of Environmental Management
 Environmental Reference Laboratory

National Air Quality Monitoring Network
AT SERVICE IN 81 PROVINCES

www.cevreorman.gov.tr

Measurement data collected in the station computers are compiled by a special network of our Ministry at both our Provincial Directorates and Environmental Reference Laboratory Data Operation Center of our Ministry



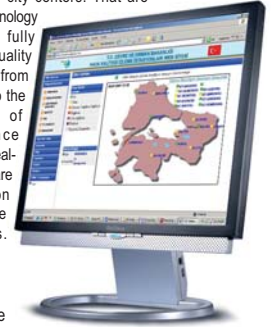
In all stations;
 • Sulphur dioxide (SO₂)
 • Particulate Matter (PM10)
 And in several ones;
 • Nitrogen oxides (NO_x)
 • Ozone (O₃)
 • Carbon monoxide (CO)
 • Meteorological Data (Wind direction, Wind speed, Humidity, Pressure, Temperature)
 are measured

www.cevreorman.gov.tr
 On our web site,
 • Real time immediate data
 • Air quality index and precautions
 • Hourly, daily, monthly and yearly averages
 • Graphics, tables and station reports
 • Limit values of our country and EU can be accessed.



National Air Quality Monitoring Network Has Been Established

The air quality measurements have been conducted with semi-automatic devices in our country so far. Our ministry has established the air quality measurement stations in 81 city centers. That are appropriate to the present technology and can operate with the fully automatic devices. The air quality measurement data obtained from the stations are transferred to the Data Processing Center of Environmental Reference Laboratory of the Ministry on real-time basis. The data obtained are evaluated and published on www.cevreorman.gov.tr in the form of hourly averages.



On this Internet site:

- The data obtained from the measurement stations can be monitored simultaneously.
- The automatically calculated air quality indexes of the provinces that are measured can be seen and the details about the precautions taken according to index can be accessed.
- Averages of hourly, daily, monthly and annual pollution parameters can be calculated.
 - Station reports can be obtained by creating graphics and tables for the data at the desired time interval and period.
 - All these data can be compared with the limit values stated in the legislation of our Country and the EU Directives.



The air that we breathe is mainly by the human factors rather than the natural factors...

Air pollution arises when various chemicals disperse to the atmosphere covering our world as a result of both natural and human activities. The gases that are emitted into the air as a result of natural activities such as fires in forests, volcanic eruptions, life cycle of the fauna and flora species that can be eliminated within the respective cycle of the atmosphere.

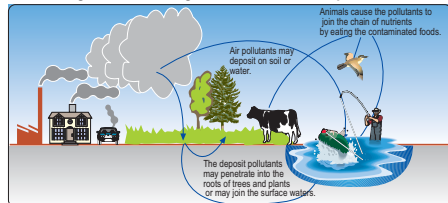
The air pollution has started when human being learnt how to start a fire. But, the human related air pollution has increased rapidly during the industrialization and has turned out to be today's one of the most important environmental problems.

The human related air pollution increases according to the factors such as the industrial development population and urbanization of the region, lack of green areas, meteorological factors and topographical structure.

The Most Significant Pollutants effective on Environmental and Human Health

Pollutants	Main Sources	Primary Impacts
Sulfurdioxide (SO ₂)	Burning of the fuels containing sulfur (coal, fuel oil etc.)	Damages Respiratory on acid rains
Nitrogen oxides (NOx)	Vehicle emissions, burning processes at high temperature	Eye and respiratory system diseases, ozone generation with volatile organic compounds and acid rains
Particulate Matter (PM10)	Industry, fuel use, agricultural and secondary chemical reactions	Cancer, heart disorders, respiratory system diseases, increase in the mortality rate of babies
Carbonmonoxide (CO)	Incomplete burning of fossil fuels (coal, fuel-oil etc.), vehicle emissions	Decrease in the capacity of conveying oxygen together with hemoglobin in blood, death
Ozone (O ₂)	Nitrogen oxides caused by traffic and reaction of organic compounds with sunlight	Respiratory system disorders, irritation on eyes and noses, asthma decrease in the overall body resistance
Heavy Metals (arsenic, cadmium, lead, mercury, nickel etc.)	Industrial processes, power generation, vehicle emissions	Cancer, digestive and nerve system disorders

Pollutant Cycle and Impacts on Environment: Industry, transportation and heating are the most significant sources of air pollution.



Air pollution does not have limits: Climate change rupture in the ozone layer and acid rains threaten our world!

Climate change and Greenhouse Effect

The carbon dioxide (CO₂) concentration that is significant among the greenhouse gases in the atmosphere has increased by 25% in comparison with the pre-industrialization period (1750- 1800) and is increasing by 0.5% every year due to the releases caused by humans.

Main Causes:

- Carbondioxide (CO₂): Energy use, traffic, industrial processes, destruction of forests
- Methane (CH₄): Energy production and use, agricultural activities
- Nitrous oxide (N₂O): Agricultural activities, burning of biomass, burning of fossil fuels
- F Gases (HFCs, PFCs, SF₆): Industrial activities, cooling systems, aerosols (perfumes, deodorants, sprays etc.)

Main Effects:

- The coastline covered by water when the sea level rises
- Change in the rainfall regime, and extraordinary events like floods, storms and draught
- Decrease in biological diversity

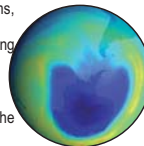
Ozone Depletion

Main Causes:

- Chlorofluorocarbons (CFCs): Cooling systems, aerosols and solvents
- Methyl Bromide: Agricultural activities and burning biomass

Main Effects:

- Skin cancer, eye disorders and disorders in the immunity system of humans
- Damage in the balance of ecosystem



Acid Rains

Main Causes:

- Sulfurdioxide (SO₂) and Nitrogenoxides (NOx): Burning of fossil fuels
- Ammonia (NH₃): Agricultural activities

Main Effects:

- Destruction in lake, river and forest ecosystem
- Corrosive effect on the exposed structures (historical artifact, monuments etc.)
- Easy release of heavy metals and nitrates into the groundwater

Why do we monitor the air quality?

- Informing the public about the air quality in the environment where they live
- Identification of the polluting sources and taking the necessary precautions to prevent air pollution
- Ability to fulfill the of Environmental Legislation regarding protection and management of air quality and fulfill the obligations in the process of harmonization with the EU Directives



How do we measure the air quality?

Monitoring air quality soundly is only possible with the fully automatic devices and by obtaining the measurement data continuously. The measurement data collected at the station computers that are installed are received by our Provincial Directorates and the Central Computer of our Ministry through GSM Modems via a special network (VPN) of our Ministry.

The hourly-averaged data are received from the stations by the Data Operation Center of Environmental Reference Laboratory which is the center of Air Quality Monitor Network, and reviewed on daily basis. Then; the daily, monthly, and yearly monitoring reports are prepared for management of air quality.



Parameters Measured At Stations

The following parameters are measured at the air pollution measurement stations that have been established:

- Sulfurdioxide (SO₂) - at all stations
- Particulate Matter (PM10) - at all stations
- Ozone (O₃) - at several stations
- Nitrogenoxides (NOx) - at several stations
- Carbonmonoxide (CO) - at several stations
- Meteorological data (Wind Direction, Wind Speed, Humidity, Pressure, Temperature) - at several stations



These measurements are made fully automatically. Sulfurdioxide and Particulate Matter pollutants are the most common pollutants, which are mainly caused by using fuels.

Limit Values for Pollutant Parameters

The measured parameters are monitored according to the limit values set forth in the Environment Legislation. During the process of accession of our Country into European Union. These limits will be reduced gradually and the set according to the EU Directives.

Parameter	Limit Values of Turkey	
	Limit Value	Time
SO ₂	900 µg/m ³	Hourly Average
	400 µg/m ³	24h Average
	250 µg/m ³	Winter Season
PM10	300 µg/m ³	24h Average
	200 µg/m ³	Winter Season
CO	30 mg/m ³	24h Average
NO ₂	300 µg/m ³	24h Average
	100 µg/m ³	Yearly Average

