

EAD's efforts in improving Abu Dhabi Emirate's Air Quality



هيئة البيئة - أبوظبي
Environment Agency - ABU DHABI

The Environment Agency – Abu Dhabi (EAD) started monitoring the air quality in Abu Dhabi in 2007 via an ambient air quality network. EAD operates ten fixed and two mobile air quality monitoring stations. The ten fixed stations are distributed around Abu Dhabi city and suburbs, Mussafah Industrial Area, Al Ain city and the Western Region. EAD monitors and evaluates air quality based on the data collected from these stations and compares these data to the allowed limits provided in UAE Cabinet Decision No. (12) of 2006 concerning air protection from pollution.

The air quality monitoring stations vary according to their location and purpose; whereas there are certain stations in the areas of high density of population to measure the effects of the various activities on air quality in these areas. There are specific stations allocated for roads and streets of high traffic density to monitor the pollutants of the transportation and vehicles. There are also special stations located in the industrial areas to watch the industrial pollutants. Besides, there are some air quality stations available in the remote areas, away from any population, urban or industrial activities to know the scope of the external pollutants – coming from across the borders of Abu Dhabi- in the overall amount of pollutants in Abu Dhabi.

Due to the accelerating development in the urban, industrial and other fields witnessed in Abu Dhabi and in order to keep up with these changes and their effects on the environment, EAD started a project to expand the network of air quality monitoring stations by adding ten new stations to achieve integrated and comprehensive coverage and to help in evaluating the environmental status accurately.

Eng. Sheikha Al Hosani, EAD's Director, Environmental Monitoring & Analysis said: "We are continuing our efforts to enhance our monitoring of air quality in the Emirate of Abu Dhabi in order to have an accurate and comprehensive understanding of air quality in Abu Dhabi,

monitor trends in air quality and determine pollutant sources from different sectors such as energy, industry and transportation sectors. This information can be used to assess the impact of air pollutants on public health and make policy decisions for the benefit of the public. The framework for ensuring sustainable means of reducing ambient pollution and improving air quality is based on priorities of the Environment Vision, Abu Dhabi 2030.

Particles that are less than 10 mm in diameter (PM10) represent one of the main problems causing air pollution in Abu Dhabi. The reason behind their high concentration is the desert nature of the Emirate and the regular sand storms that occur during certain seasons of the year. Such particles exceed the allowed amounts in all locations in the Emirate.

The data gathered from the air monitoring stations indicates a decrease in the annual average of nitrogen dioxide emissions in 2011, about 25-30% less than 2010. The data showed an increase of Nitrogen dioxide emissions in the most crowded areas with traffic, for example Hamdan Street, and some industrial locations like Mussafah Industrial area.

As for the other pollutants such as Carbon monoxide and Sulfur dioxide, there is no exceedance in the allowed limits in all the locations of the emirate during the previous years.

Eng. Al Hosani stated that the reason behind the decrease in Nitrogen dioxide is the role of some strategic initiatives developed by the governmental bodies to decrease the emissions including the expansion in the transportation lines which lead to a decrease in the number of cars. Besides, the project of using natural gas as an alternative fuel, whereas many governmental bodies shifted their vehicles to natural gas in accordance with the requirements of the organizational plan of using natural gas issued by the Executive Council of Abu Dhabi in 2010 in coordination with ADNOC Distribution.



EAD seeks, in cooperation with the stakeholders, to encourage all the sectors causing air pollution to launch initiatives and implement programs to enhance air quality and reduce the emissions to match the allowed limits and decrease the negative impacts caused by air pollution on man and the environment.

EAD works together with stakeholders on the federal and local level to enhance air quality in Abu Dhabi. There are many projects and initiatives implemented under the supervision of Air Quality Committee, chaired by EAD and the membership of Ministry of Environment and Water, Emirates Authority for Standardization & Metrology (ESMA), ADNOC Distribution, The Abu Dhabi Oil Refining Company (TAKREER), Abu Dhabi Police, Department of Transportation and Abu Dhabi Municipality.

One of the strategic initiatives that aim to enhance air quality is to use natural gas as an alternative fuel in the emirate. This is a national initiative implemented by ADNOC Distribution and GASCO Co., under the supervision of Air Quality Committee. This project comes within the efforts of Abu Dhabi to protect the environment and keep up with the comprehensive development plan witnessed in the emirate economically and socially. It is also a precautionary step to face the increasing number in the Vehicles of the Transport Dep. and to avoid the emissions of harmful gases like carbon mono and dioxide, nitrogen oxides, sulfur dioxide and hydrocarbons.

The Executive Council of Abu Dhabi issued a decree in 2010 on “ the organizational plan to use natural gas and green diesel as an alternative fuel in the emirate” which means the commitment of all the concerned parties in the emirate to use natural gas in their vehicles with average of 25% by the end of 2012. This will contribute in decreasing pollutants caused by the vehicles and cars and enhance air quality as well.

The green diesel is distinguished by containing little sulfur (10 particles/million) which will be released soon in the market to decrease the harmful emissions of sulfur oxides.

There are also many other initiatives such as the strategy of decreasing emissions released from the Vehicles of the Transportation Dep., which will contribute in decreasing the emissions in this sector.

Based on the current data and the future plans of the emirate including the expected increase in the number of population, cars, the industrial and development plans, and putting into consideration the present and future initiatives and projects which aim at enhancing air quality in the emirate, will find that the result will be a gradual decrease in the concentrations of carbon monoxide despite the increase in the vehicles number because the new ones will not produce high concentrations of this harmful gas.

The data also refer that sulfur dioxide will not form any danger in the future because the expansion in using low sulfur diesel and implement the compressed natural gas strategy as an alternative fuel for the vehicles will have a positive impact on decreasing the concentration of Sulfur dioxide in the atmosphere.

As for nitrogen dioxides, it is expected that we will have a little decrease in their concentrations in the coming years. Thus, EAD in cooperation with the stakeholders will develop new plans and initiatives to decrease the concentrations of nitrogen dioxides to match the allowed limits which don't have any negative impact on man's health.

