AIR QUALITY IN ISRAEL: NOW AND TOMORROW

Haifa bay/photo: Ilan Malester

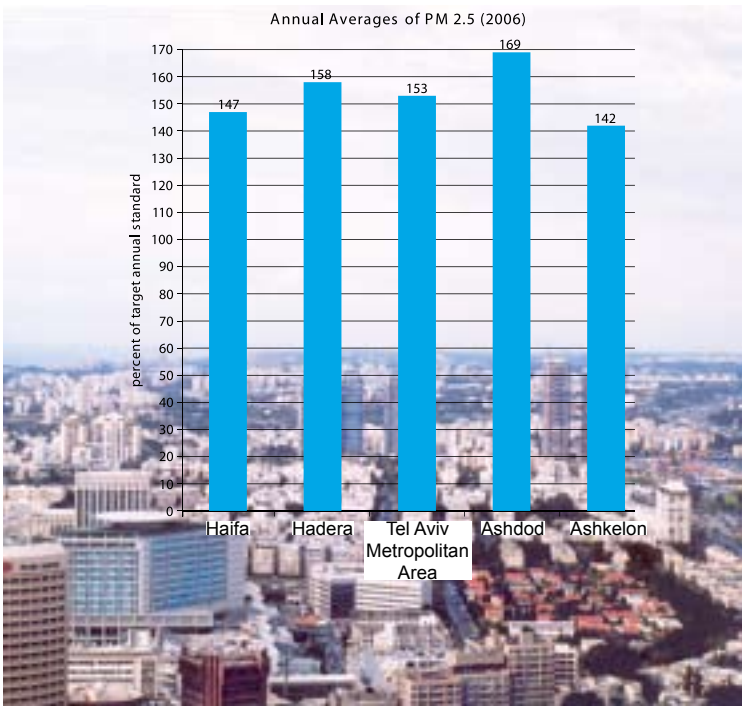
"Air quality monitoring results reveal a continuing trend of improvement in vehicular air pollution in Jerusalem and the Tel Aviv metropolitan area. We expect this trend to continue as we continue our intensive activities. However, elevated ozone concentrations have degraded air quality in Israel's inland areas, underlining the importance of further reducing hydrocarbon and nitrogen oxides emissions from vehicles, gas stations, power plants and industry."

Dr. Levana Kordova-Biezuner, *Scientific Director, Israel National Air Monitoring Network*

There's good news and bad news when it comes to air quality in Israel. On the one hand, Israel's annual monitoring report for 2006 reveals improvements in air pollution, especially when it comes to pollution from transportation sources in Tel Aviv and Jerusalem. On the other hand, the situation is far from good as witnessed by the fact nitrogen oxides levels throughout the country remain high, ozone concentrations are on the increase and exceedances of the target standard for fine respirable particles (PM 2.5) are all too frequent, reaching 120%-214% of the annual target and as much as 233% in the vicinity of major transportation arteries.

Tackling Air Pollution in Israel

The reduction of air pollution ranks high on the priority list of the Ministry of Environmental Protection. In the words of Environmental Protection Minister Gideon Ezra, the ministry's aim is "to continue to improve air quality in Israel for our health, for the health of our children and for future generations." Therefore, in recent years concerted efforts have been invested in reducing population exposure to air pollution through a wide variety of measures targeted at both vehicular and industrial sources.



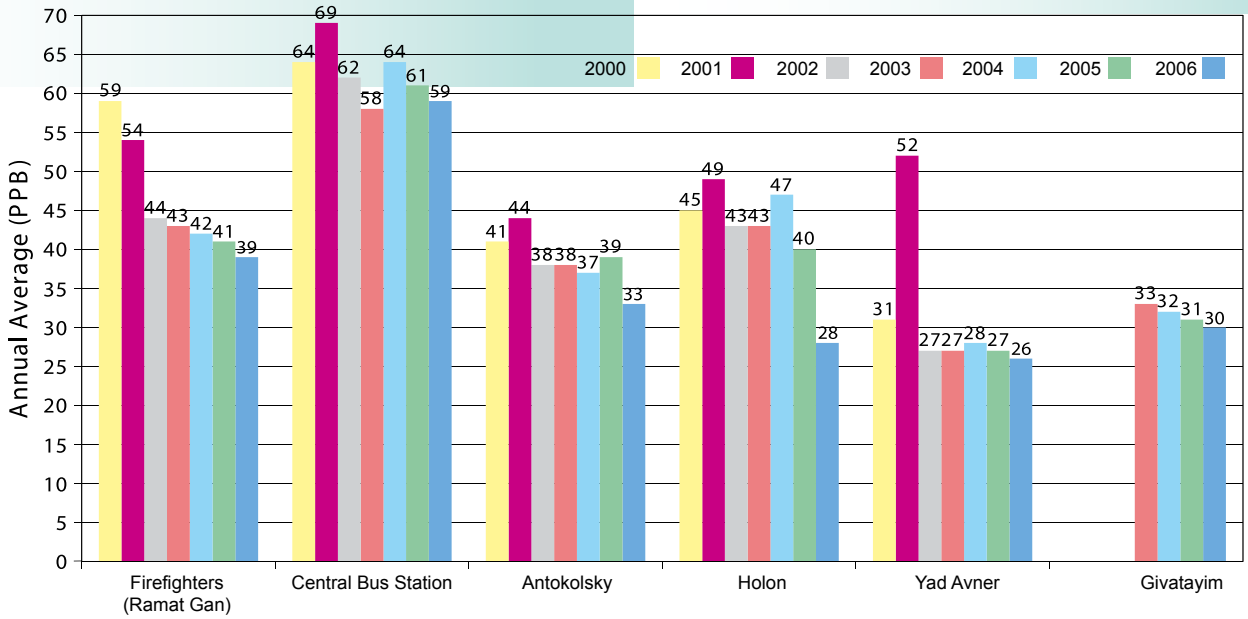
Tel Aviv/photo: Eitan Mazeh

Targeting vehicular pollution:

- *All light vehicles (up to 3.5 tons) imported into Israel comply with Euro 4 standards since January 2006 and all heavy vehicles (above 3.5 tons) comply with this standard since October 2006.*
- *The sulfur content in 98 octane gasoline has been reduced to 10 ppm.*
- *10 ppm sulfur diesel fuel has been introduced into some 15 gas stations throughout the country.*
- *More stringent air pollution checks were introduced into the annual car registration tests for gas-powered vehicles, beginning with 1995 models, since March 2006.*
- *More stringent regulations on smoke emissions from diesel vehicles, which apply to the annual car registration test, beginning with 2001 models, came into force in June 2007.*
- *Taxes on hybrid cars were reduced to 30%, within the framework of a new policy that will link the external costs of air pollution and tax levels.*
- *The government adopted a national plan for the reduction of vehicular pollution in September 2007.*
- *In January 2008, the government approved the recommendations of the Green Tax Committee, which link tax rates on vehicles and fuels to the pollution and environmental damage they cause.*
- *Environmental assessments of carcinogens, including toluene, benzene, xylene, benzo(a)pyrene and heavy metals, have been initiated in Israel's main metropolitan areas - Jerusalem, Tel Aviv and Haifa - in comparison to background levels measured in the Appolonia Nature Reserve in Herzliya.*

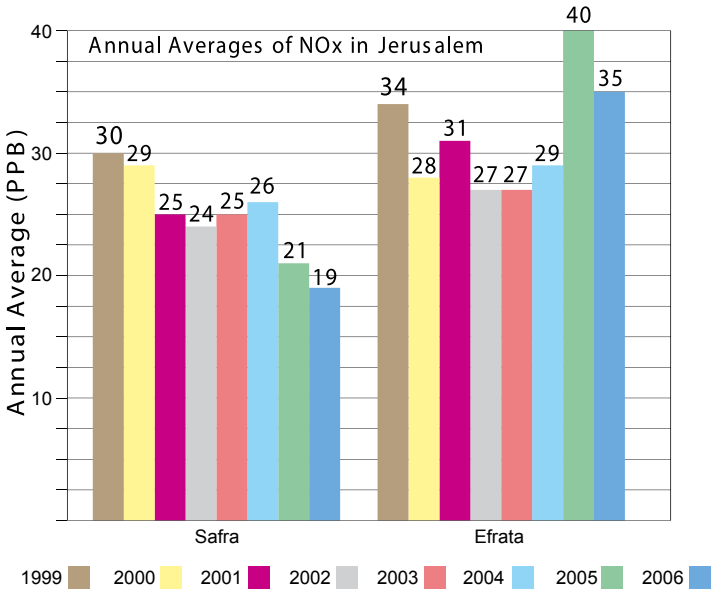
Haifa bay/photo: Ilan Malester

Annual Averages of NOx in General Monitoring Stations in the Tel Aviv Metropolitan Area



Targeting Industrial Pollution:

- *An inventory of industrial emissions in Israel was conducted, helping to identify major polluters.*
- *Requirements for best available techniques (BAT) are introduced within the framework of business licenses or personal decrees under the Abatement of Nuisances Law.*
- *TA Luft 2002 standards are required from industrial plants in the Haifa Bay industrial area.*
- *Characterization of air quality in the Haifa Bay industrial area has been undertaken, based on measurements of chemical pollutants, including carcinogens and suspected carcinogens.*
- *The recommendations of the Almog Committee on "Ambient Guideline Values for Chemical Pollutants in the Air" were published and adopted in 2006, with guideline values for 110 chemical pollutants in the air which are considered to be harmful to public health.*
- *Preparations are in the making for introducing Integrated Pollution Prevention Control (IPPC) into industrial plants identified as major polluters, requiring them to obtain emission permits, based on BAT, which aim at minimizing pollution as a whole. Smaller and medium sized plants will be subject to TA Luft 2002 and European Directive requirements which will be incorporated into their business licenses.*
- *A Clean Air Bill has been drafted which incorporates IPPC and other requirements aimed at improving air quality in Israel.*



Findings of the Annual Air Quality Monitoring Report for 2006:

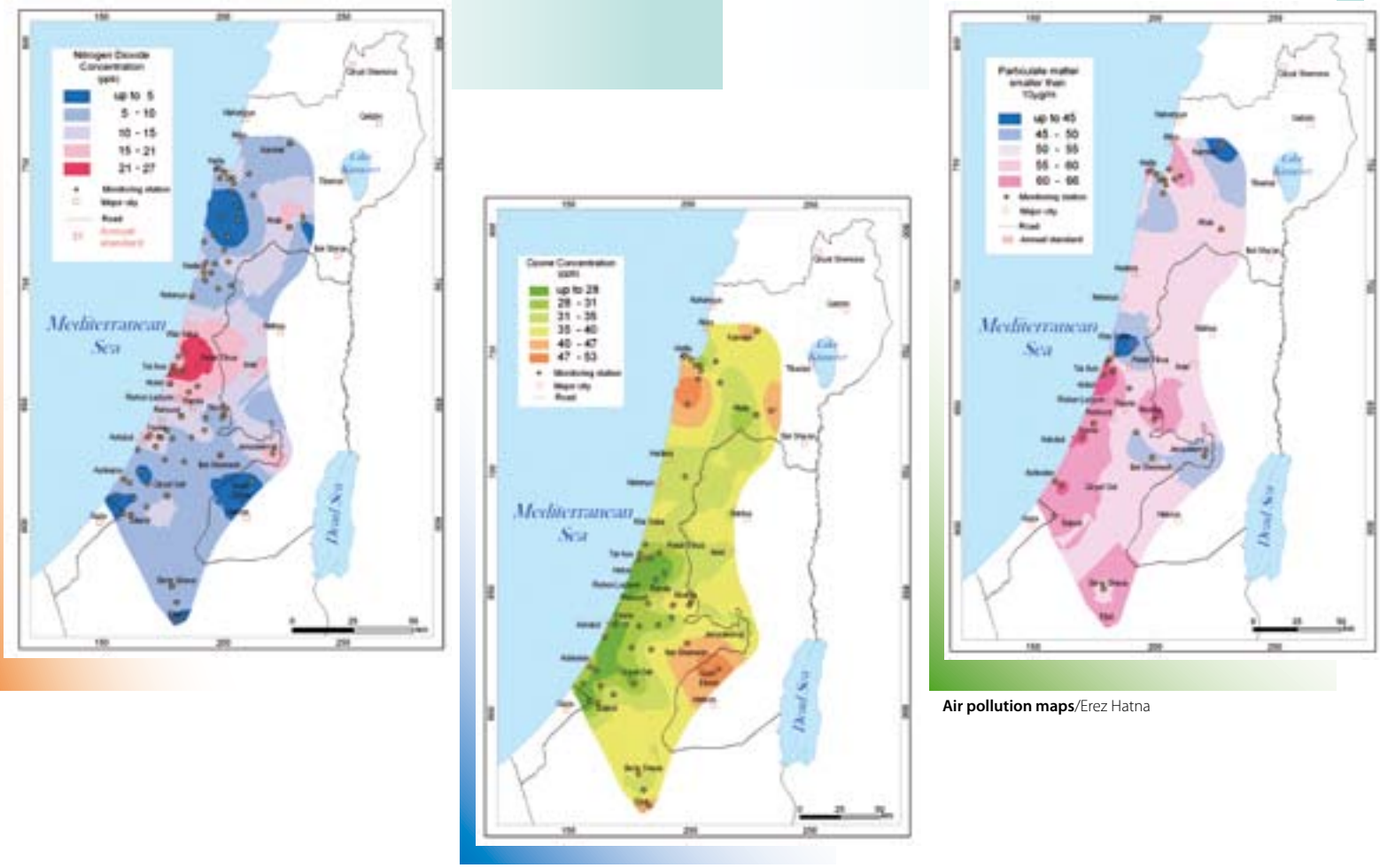
- *59 high air pollution days in the Tel Aviv metropolitan area in 2006, compared to 61 days in 2005 and 65 days in 2004.*
- *32 high air pollution days in Jerusalem, compared to 52 days in 2005 and 55 days in 2004.*
- *Low concentrations of sulfur dioxide, with the highest annual concentration in the industrial area of Ashdod – 26% of the annual standard of 23 ppb.*
- *Annual exceedance of the target standard for PM 2.5 in all monitoring stations which measure fine respirable particles smaller than 2.5 micrometers.*

Mobile emission monitoring unit

- *Annual exceedance of the standard for respirable particles smaller than 10 micrometers (PM10) in Haifa's French Carmel neighborhood, Tel Aviv, Givataim, Modi'in, Nir Galim in the Ashdod region, Bat Hadar in the Ashkelon region and in transportation stations in the Tel Aviv metropolitan area.*
- *Deterioration of air quality in Haifa for ozone and respirable particles.*
- *Increased ozone concentrations in the Neve Sha'anan neighborhood in the Haifa region, Beit Shemesh, Gush Etzion and Kiryat Malachi.*
- *Isolated exceedances of the ozone standard in the Haifa area (Neve Sha'anan, French Carmel, Nesher, Kiryat Ata and Kiryat Tivon), Givat Ha'More and Afula, Moshav Kerem Maharal and Kibbutz Ha'mapil, Beit Shemesh, Gush Etzion, Kiryat Malachi and Ramat Hovav's "Shemen site."*
- *Exceedance of the World Health Organization's annual standard for nitrogen dioxide in the old central bus station of Tel Aviv-Jaffa, Ramat Gan and Kfar Hayarok Junction in Ramat Hasharon.*
- *Annual exceedances of the nitrogen dioxide standard in all of Israel's transportation stations.*
- *Isolated exceedance of the World Health Organization's 1-hour standard for nitrogen dioxide in the Ahad Ha'am transportation station in Petach Tikva.*
- *High annual concentrations of nitrogen oxides in areas adjacent to main roads in different parts in Israel, dozens of exceedances of the half-hour standard in Holon and the center of Tel Aviv and isolated exceedances in Ramat Gan and Jerusalem.*
- *Downward trend of annual concentrations of nitrogen oxides measured in transportation monitoring stations in the Tel Aviv metropolitan area and Jerusalem since 1998.*
- *Low half hour averages and eight hour averages of carbon monoxide throughout Israel.*

Main Findings of the Annual Air Quality Monitoring Report for 2007:

- *45 high air pollution days in the Tel Aviv metropolitan area in 2007, compared to 59 days in 2006.*
- *33 high air pollution days in Jerusalem, compared to 32 days in 2006.*
- *7 high air pollution days in Haifa, compared to 15 days in 2006.*
- *12 high air pollution days in the Krayot, compared to 17 days in 2006.*
- *12 high air pollution days in Beersheba, similar to 2006.*
- *7 high air pollution days in Afula, compared to 13 days in 2006.*
- *12 high air pollution days in Beit Shemesh, compared to 22 days in 2006.*
- *22 high air pollution days in Modi'in, compared to 18 days in 2006.*
- *9 high air pollution days in Karmiel, similar to 2006.*
- *10 high air pollution days in Rehovot, compared to 15 days in 2006.*
- *Downward trend of annual concentrations of nitrogen oxides measured in transportation monitoring stations in the Tel Aviv metropolitan area.*
- *Air quality improvements in Afula, Beit Shemesh, Rehovot, Haifa and the Krayot, largely due to decreases in diurnal exceedances of respirable particles (less dust storms) and significant reductions in ozone exceedances.*
- *Degradation of air quality in Jerusalem and Modi'in, due to construction of a light train in Jerusalem and accelerated building in Modi'in.*
- *No changes in air quality in Beersheba and Karmiel.*



Air pollution maps/Erez Hatna