

TARGETING VEHICULAR POLLUTION

Traffic on the Ayalon Highway/Photo: Ian Mailester

It's a major polluter of the air. It is responsible for emissions of fine particulate matter, nitrogen oxides, carbon monoxide, hydrocarbons and ozone. It affects large segments of the population in every part of the country. But something may finally be done to ameliorate the problem of vehicular pollution in Israel.

Recent years have seen a flurry of activity to reduce vehicular pollution in Israel: fuel quality improvements, research studies, innovative technologies, regulatory and enforcement mechanisms, roadside inspection and public awareness campaigns. Yet, without doubt, the real breakthrough came in the form of a far-reaching government decision on the reduction of air pollution from transportation sources, which was approved in September 2007.

Pollutant emissions from transportation sources are a major cause of air pollution in both large cities and more remote areas located downwind from pollutant sources, where they endanger public health. The problem is exacerbated by the dramatic increase in cars on Israel's congested roads - reaching over 2.1 million in 2006 - and the continuous rise in kilometers traveled by vehicles each year. The newly approved action plan will make a real contribution toward the reduction of toxic air

pollution and greenhouse gas emissions while helping to reduce fuel consumption, dependence on imported oil and traffic congestion.

The decision was preceded by years of painstaking work by an interministerial team which was specifically set up to submit recommendations on the reduction of vehicular pollution. The plan includes a wide variety of measures based on economic, legislative and technological steps to reduce vehicular emissions and allow Israel's residents to breathe easier.

Transportation Facts and Figures

- > In 2006, vehicles in Israel traveled 43.2 billion kilometers, an increase of 6% from the previous year.
- > In 2006, road density increased: relative to 1990, annual kilometers traveled grew by 132% and the vehicle fleet grew by 114%, while the area of roads grew by 61% and the length of roads by 34%.
- > In 2006, the rate of motorization in Israel stood at 306 vehicles per 1,000 residents (302 at the end of 2005).
- > In 2006 there were 2,176,000 motor vehicles in Israel - an increase of 3.2% compared with 3.4% in 2005 and 2.8% in 2004. The growth rate of private cars was 3.6% compared with 3.8% in 2005 and 3.1% in 2004.



Parking/Photo: Eli Ratner



National Action Plan for Reducing Vehicular Pollution

The government decision calls for the following steps, among others:

- Setting stricter mandatory emission standards for smoke emissions from diesel vehicles and carbon monoxide emissions from gasoline-powered vehicles, adapted to each vehicle model;
- Authorizing Green Police inspectors to order drivers to stop their cars for pollution inspection, and, in case of non-compliance with emission limits, instructing owners to stop using their vehicles;
- Calling on the Ministry of Transport and Road Safety to prepare a pollution reduction program for the center of Tel Aviv which is based on restricting the movement of polluting vehicles, as of February 2008;
- Implementing, as of January 2009, a plan for the scrapping of old vehicles,

which will offer owners payment for transferring their old vehicles for scrapping and metal parts recycling;

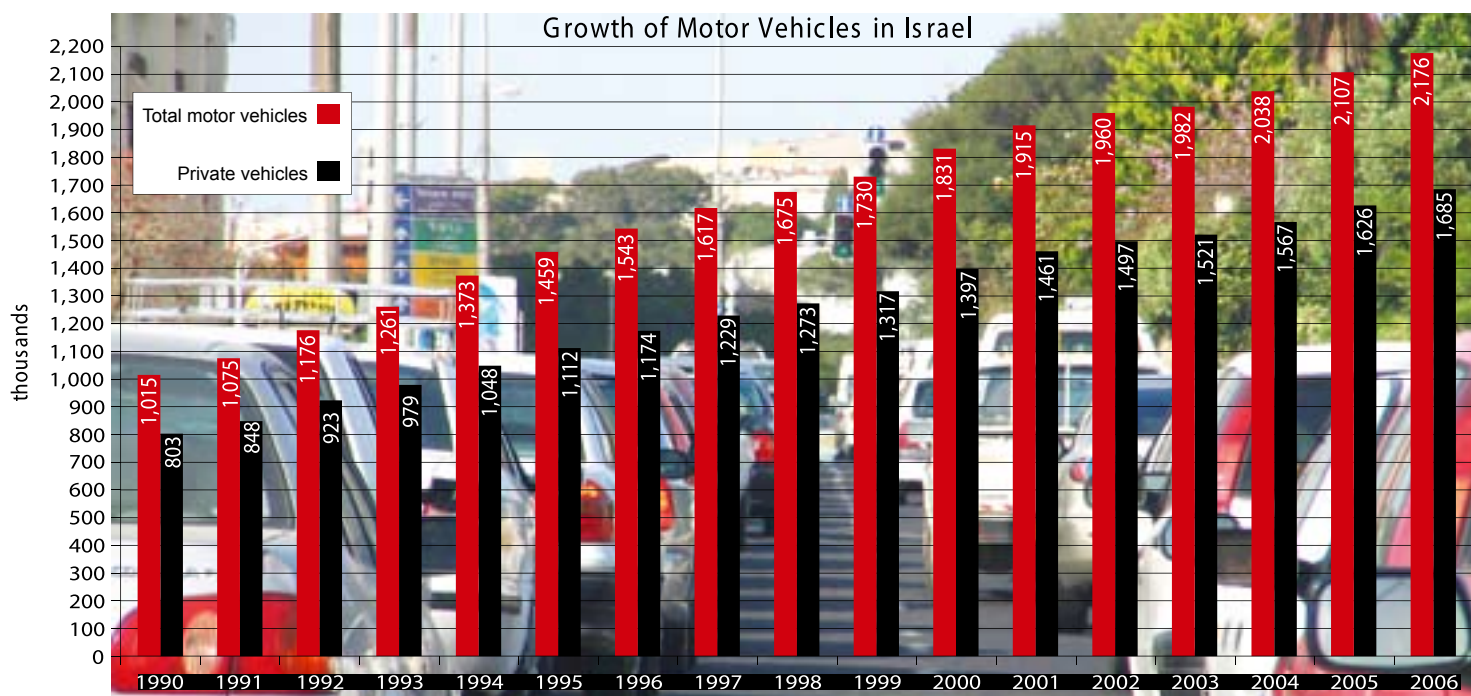
- Calling on the Ministry of Transport and Road Safety to renew roadside air pollution tests for vehicles by its enforcement patrols which check the working order of vehicles;
- Calling on the relevant officials in the Ministry of Finance and the Tax Authority to present a program for encouraging employees to reduce their private car use and switch to public transportation or other alternatives that reduce private car use;
- Imposing a differential tax on vehicles, based on the "green index" published by the Green Tax Interministerial Committee;
- Prohibiting the movement of heavy vehicles on main traffic arteries during peak hours, with the exception of

vehicles designated for passenger transport;

- Giving preference in tenders for service vehicles in government agencies to fuel-efficient, environment friendly vehicles;
- Establishing a national vehicle laboratory to assist in checking vehicle compliance with advanced standards and to contribute to wise decision making on the subject.

In addition, the decision calls for reviewing the advantages and disadvantages of electric cars charged from the national electricity grid and recommending policy within a year.

The plan also calls for significant economic incentives for promoting alternative fuels, which are not oil-based, as well as diesel substitutes within 90 days.



Green Police Takes Action

The Ministry of Environmental Protection's Green Police inspectors checked 15,402 vehicles, fined 3,356 drivers and took 1,485 vehicles off the road for air pollution violations in 2007. Violators are fined 500 shekels, and total fines in 2007 reached 1,678,000 shekels.

Translating Words to Actions

According to Avi Moshel, in charge of vehicular pollution in the Air Quality Division of the Ministry of Environmental Protection, implementation of the action plan will significantly reduce pollutant emissions from vehicles, and the test of the plan will lie in its implementation. Moshel expects most of the elements of the action plan to be implemented this year. And progress is indeed being made. Within a few months of the government decision on vehicular pollution reduction, in January 2008, yet another government decision was unanimously approved - this time on green taxes. The decision represents the first time that the government has decided to link the tax rate imposed on vehicles and fuels to the level of pollution and level of environmental damage they cause.

According to the decision, the most highly polluting vehicles will be subject to additional purchase taxes of up to 15,000 shekels while taxes on clean vehicles will be reduced. Much lower taxes will be imposed on electric cars: a tax rate of up to 10% until the end of 2014 and up to 30% between 2015 and 2019. The rationale: to motivate people to drive greener cars by providing tax breaks for the purchase of these cars.

In parallel, the Green Tax Committee related to a number of other issues, including a gradual tax increase on polluting fuels, such as crude oil, so that they too would be linked to the pollution emitted during their use.

Ministerial Steps Toward Clean Air

The Ministry of Environmental Protection is investing major efforts in advancing national plans for pollution reduction, which relate to different aspects of pollution generation: fuel quality, technology, working order of vehicles and reduced private car use. These plans, which have found expression in recent government decisions with technical, behavioral and economic components, are a first and necessary stage in the pollution reduction process. The ministry intends to do all in its power to implement these plans and promote follow up processes in future years so as to reverse the current trend of increase in kilometers traveled and fuel consumed and bring about the desired behavioral and economic changes in transportation use. "Such changes are vital if we are to prevent our cities from being blocked by traffic and if we are to avoid significant health and economic damages," says Moshel.

According to Environmental Protection Minister Gideon Ezra, "Air pollution is an especially severe environmental and health problem. More than 1000 people die each year as a result of air pollution in the Greater Tel Aviv area alone. I am convinced that approval of the plan will bring about a better and healthier Israel!"

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Parking in Tel Aviv/Photo: Ilan Malester

Israel Prepares for Electric Cars

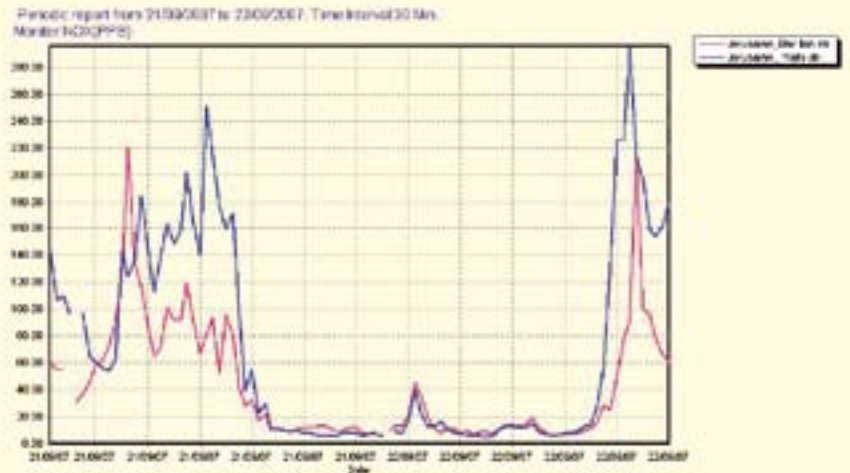
One component of Israel's national plan for the reduction of vehicular pollution relates to electric cars. This issue has been highly publicized in Israel and worldwide due to an initiative by Project Better Place to make electric cars available on the Israeli market. On January 21, 2008, the Renault-Nissan Alliance signed an agreement with Project Better Place for the conversion of conventional cars to run on electric motors. On its part, Project Better Place expects to build and operate a network of recharging stations and battery replacement stations throughout Israel. The vehicles will run on lithium-ion batteries. The vision is to make Israel a testing ground for electric cars, with the state offering tax breaks to purchasers and the new company, with an initial investment of \$200 million, to begin construction of recharging facilities. Shai Agassi, the entrepreneur behind the venture, expects the first electric cars to be available in Israel in 2011.



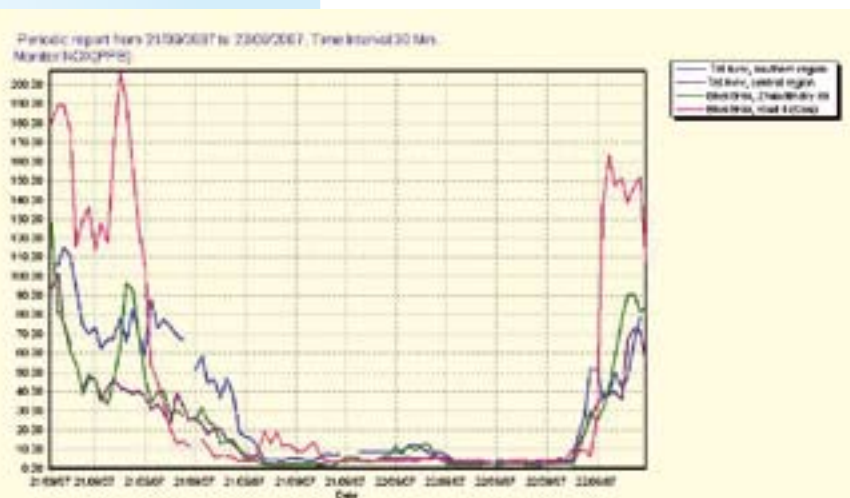
Day without Air Pollution: Yom Kippur 2007

A drastic reduction in nitrogen oxides concentrations was measured on Yom Kippur, the Day of Atonement, celebrated in Israel from the afternoon of September 21 to the afternoon of September 22, 2007. Nitrogen oxides concentrations, which are indicators of pollution from transportation sources, plummeted in transportation monitoring stations in the Tel Aviv metropolitan area (Gush Dan) and in Jerusalem.

Dr. Levana Kordova, scientific director of the air quality monitoring network of the Ministry of Environmental Protection, noted that the phenomenon of very low air pollution on Yom Kippur is unique to Israel. Yom Kippur is the only day in the year when traffic in Israel is reduced to a near halt. Thus, the holiday provides a singular opportunity to investigate the impact of vehicular air pollutants on concentration levels. As in past years, the significant improvement in air quality on this day clearly illustrates the impact of transportation as the major source of air pollution in large cities.



Air Quality Monitoring Data on Yom Kippur in Jerusalem



Air Quality Monitoring Data on Yom Kippur in Greater Tel Aviv



Air Pollution from Transportation

- > About 95% of total emissions of **carbon monoxide** (CO) are from transportation sources. Monitoring reveals zero deviations from the half-hour standard for CO.
- > About 85% of total **hydrocarbons** (HC) emissions from transportation sources are from gasoline-powered vehicles.
- > About a third of total **nitrogen oxide** (NOx) emissions are from transportation sources, mostly (about 70%) from diesel-powered vehicles. Monitoring data show dozens of exceedances of the NOx standard.
- > About 10% of total **suspended particulate matter** (SPM) emissions are from transportation sources, of which about 85% are attributed to diesel-powered vehicles.

