Report of the State comptroller of Israel | January 2024

Systemic Topics

The Government's Actions to Reduce Vehicle Air Pollution and Preparedness for the Transition to Electric Vehicles

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Background

Using vehicles (road traffic) involves significant external effects, including noise, road congestion, air pollution damage, and greenhouse gas emissions. Air pollution affects the health and quality of life of all Israelis, and the cost of traffic pollution is about NIS 7.2 billion in 2018 value – second to the cost of pollution from electricity generation and higher than the cost of pollution from each of the other components. Hence, the importance of reducing this type of pollution, both through new vehicle propulsion technologies and by reducing the pollution emitted by existing vehicles, is well known. The main means for reducing air pollution from road traffic is by increasing the use of public transport instead of private vehicles and by increasing the use of light means of transport, such as cycling and walking. Regarding light vehicles (up to 3.5 tons), switching to electric vehicles is the means to reduce emissions. The key advantages of electric vehicles are the absence of direct greenhouse gas emissions into the atmosphere and the absence of emissions of other pollutants, low maintenance cost, and quiet driving.

Key Figures

NIS 7.2 billion

road traffic air pollution estimated cost in 2018, according to the Ministry of Environmental Protection, of which NIS 4.4 billion is due to air pollution, NIS 1.8 billion – greenhouse gas emissions, and about NIS 1 billion – fuel production

61%

air pollution estimated cost rate caused by heavy vehicles out of the total road traffic cost of air pollution, although their rate out of all vehicles in Israel is about 10%, in 2018 data

42,402

the number of "polluting" but not "old heavy" vehicles which are merely marked with a sticker during the annual licensing test and prohibited from entering clean air zones in Haifa and Jerusalem

9.4 years

the average age of trucks in Israel in 2021 compared to 5.1 years in 2000 and compared to 7 years and 5.2 years, the Average age of private vehicles and buses respectively, in 2021

only 219

the number of public fast charging stations in July 2023 installed for over 40,000 electric vehicles at the end of 2022

363,000

the number of hybrid vehicles. In addition to 40,000 electric vehicles and hundreds of electric buses – without batteries' recycling regulation

1.0%

the tax burden rate (tax collection as a percentage of the GDP) on the excise tax in 2022 compared to 1.6% in 2010

0%

the purchase tax rate on trucks over 4.5 tons and on buses, despite their high share in the costs of air pollution from road traffic

Audit Actions

From August 2022 to April 2023, the State Comptroller's Office examined the government actions to reduce traffic air pollution and its preparedness for the transition to electric vehicles. The examination was conducted at the Ministry of Transportation and Road Safety (Ministry of Transportation), the Ministry of Energy, Ministry of Environmental Protection, the Ministry of Finance, and the Israel Electric Company. Supplementary examinations were conducted at Noga – The Israel Independent System Operator Ltd. government company, the Electricity Authority, Dan – Public Transportation Company Ltd., and the Israel Tax Authority.

First Chapter: The Impact of Traffic Air Pollution and Actions to Reduce it

Key Findings

Air pollution in Israel Compared to Other Countries – a comparison of traffic air pollution from the four main pollutants between Israel and other countries raised that the rate of particle pollution (PM – solids and liquids [droplets] in the air) from traffic in Israel is about 15% of the total particle pollution in the country, and is relatively high compared to the average pollution in the European Union countries. The rate of NOX pollution (nitrogen oxides is a collective name for the combination of nitrogen monoxide, nitrogen dioxide, and other compounds) from traffic in Israel is about 12% of all NOX pollution and is low compared to the European Union countries. When CO^2 pollution (part of the greenhouse gases) in Israel is lower than the average in OECD countries – the share of traffic in it stands at about 23.6% (similar to the figure in OECD countries).

The Air Pollution Estimated Financial Damage – according to the Ministry of Environmental Protection in August 2021, the estimated cost of traffic air pollution in 2018 was about NIS 11.4 billion out of the total pollution cost of about NIS 31.2 billion (about 37% of the estimated the total cost of pollution from all sources). About NIS 7.2 billion is the cost of traffic pollution, second to electricity production pollution, about NIS 9 billion.

The Heavy Vehicles Effect on Traffic Pollution

- **The Costs of Heavy Vehicle Traffic Pollution –** in 2018, although the heavy vehicles rate (trucks, vans, buses, and minibuses) out of the total number of vehicles was only 10%, and their share in the total distance traveled was about 18%, its pollution cost out the total road traffic pollution costs was about 61%. The leading causes of heavy vehicles' air pollution are diesel propulsion engines and the relatively old age of these vehicles.

- **The Age of the Heavy Vehicles –** the average age of the trucks, producing a significant part of the air pollution, is increasing over the years (from 5.1 years in 2000 to 9.4 years in 2021). On the other hand, there is a trend of stability in the age of private vehicles and a consistent decrease in the average age of buses. It was also found that the share of heavy trucks weighing over 3.5 tons, out of the total number of vehicles, is 3.1%, and their share of the total mileage is 6%, but their share in air pollution is 29%.

- **Heavy Vehicle Scrapping –** the Ministry of Environmental Protection's plan for heavy vehicle scrapping in 2018–2020 did not include grant payment for the scrapping of commercial vehicles, trucks, and work vehicles with total weight ranging from 3.5 tons to 12 tons (N2 type vehicle). The scrapping plan was based on the economic feasibility test of scrapping heavy vehicles carried out in 2003, which found that their scrapping is not economically viable. Since 2003, the Ministry of Environmental Protection and Transportation has not conducted an economic feasibility study for scrapping heavy vehicles.

- **The Handling of Polluting, Heavy Vehicles –** in 2023, 42,402 vehicles are not "old heavy vehicles" defined as "polluting". Old heavy vehicles are treated through the installation of filters, and in contrast, the "polluting" vehicles are marked with a sticker during the annual licensing test and banned from entering two clean air zones in Haifa and Jerusalem. The Ministry of Environmental Protection and the Ministry of Transportation have no systematic plan for the future handling of these vehicles, and they are allowed to travel on all Israeli roads except for the two clean-air zones.

Scrapping of Private and Small Commercial Vehicles – in 2010–2013, 27,911 private vehicles were scrapped as part of implementing government resolutions in 2007, 2008, and 2013. The scrapping program was stopped due to the utilization of the entire budget allocated to the program. In 2021, there were 187,269 (5.7% of all vehicles) private vehicles older than 16 years and 59,543 private vehicles older than 20 years (1.8% of private vehicles). According to the Ministry of Environmental Protection, these vehicles are 20-fold more polluting than modern vehicles. Despite the high number of vehicles over 20 years old traveling on Israel's roads, there is no orderly policy for

renewing or non-renewing the private vehicle scrapping program. Furthermore, the scrapping programs for private vehicles implemented in 2010–2013 and the scrapping program for heavy vehicles implemented in 2018–2020 did not include incentives for scrapping small commercial vehicles (N1 type vehicles weighing up to 3.5 tons), even though in 2021 there were 19,337 such vehicles.

- **Establishing Low-Emission Clean Air Zones –** in the European Union, 17 countries have declared clean air zones in over 400 cities. Israel has only two clean-air zones: Jerusalem and Haifa. The declaration of a low-emission zone in Israel is done "from the bottom up"; I.e., it is the responsibility of each local authority that is the one initiating the process. There are no criteria for locating places to be declared clean air zones. In the European Union countries, the declaration and guidance are "from top to bottom," I.e., handled in a "supra-state" framework as a directive of the Union, and from there, it is transferred to each country. The Ministry of Environmental Protection of Israel does not have an orderly policy or a long-term plan, and the local authorities' declaration of a low-emission zone in Israel is optional, not mandatory.

- **Enforcement on Polluting Vehicles –** in 2020–2022, there was a decrease in the number of Ministry of Environmental Protection inspections at the licensing centers, from 143 in 2020 to 81 in 2022, and a decline in the number of inspections at the bus terminals, from 200 inspections in 2021 to 171 inspections in 2022. According to the data, as of March 2023, 11 violations were found in licensing centers and vehicle fleets between September 2016 and June 2021, for which sanctions were imposed at about NIS 11.8 million. In one violation in November 2020, a fine notification has not yet been sent, and in two violations in June 2021 and May 2020, for which fines of NIS 914,200 and NIS 91,440, respectively, were imposed, payment demands have not yet been sent. The rate of vehicles disqualified by the Enforcement Department was about 15% in 2021, while the disqualification rate at the Licensing Bureau during the annual licensing test in 2021 was only about 3.3% of the total number of vehicles.

- **Establishment of Clean Air Zones with Low-Emission in Haifa –** following the operation of a low-emission zone in Haifa, the Ministry of Environmental Protection compared in August 2020, the air quality in the first two years of the operation of the zone to 2017, before its implementation. There was a 34% decrease in soot concentrations in the lower city and a 19% decrease in nitrogen oxide concentrations. The report stated that the improvement in air quality is more pronounced in the lower city but is also significant in the Hadar area.

Key Recommendations

- It is recommended that the Ministry of Environmental Protection and the Ministry of Transportation add ways for handling polluting vehicles, in addition to marking them with a sticker and prohibiting their entry into two clean air zones.
- It is recommended that the Ministry of Environmental Protection and the Ministry of Transportation examine the economic viability of scrapping heavy vehicles. If found financially viable, it is recommended to encourage the scrapping of old heavy vehicles weighing up to 12 tons, which are highly polluting.
- It is recommended that the Ministry of Environmental Protection and the Ministry of Transportation examine ways to reduce pollution from old and polluting private and small commercial vehicles, including formulating a follow-up plan to encourage their scrapping.
- It is recommended that the Ministry of Environmental Protection map the national air monitoring system data and locate the cities with the highest pollution rate, where declaring a "clean air zone" will reduce air pollution. Thereby promoting the declaration of "clean air zones" in these locations in cooperation with the local authorities.
- It is recommended that the Ministry of Environmental Protection bridge the gap between the disqualification rate at the Licensing Bureau and the Enforcement Department's disqualification rate and accordingly refine the guidelines for the licensing centers. It is further recommended to set annual goals for the number of enforcement operations at the licensing centers and send bus terminals payment demands for violations ahead of time.

Second Chapter: Electric Propulsion and Other Technologies for Reducing Vehicles' Air Pollution

Key Findings

- **The Number of Garages Authorized to Handle Electric Vehicles –** by the end of 2022, about 408,000 (about 10.3%) of the vehicles were electric or dual-drive vehicles (electric drive and internal combustion drive, i.e., hybrid vehicles). On the other hand, at the audit end in April 2023, only 507 out of about 12,700 garages were authorized to handle electric vehicles – only about 4%, a lower rate compared to the number of electric vehicles or vehicles with dual or electric drive.

- **Deployment of Electric Vehicles Public Charging Stations –** the Ministry of Energy and the Ministry of Transportation have not yet finalized quantitative targets for the deployment of public charging stations or guidelines for the geographic deployment of public charging stations, nor have they determined the types of stations suitable for deployment on intercity roads. It should be noted that this topic has already been promoted in the European Union and the USA. According to the Ministry of Energy data, there are no public charging stations of a non-European standard in Israel, and there are few public charging stations (about 219) equipped with a fast charging option. By the end of 2022, Israel had over 40,000 electric vehicles, and their number is expected to grow in the coming years.

- **Charging Stations for Electric Vehicles in Existing and New Condominiums –** the Ministries of Interior and Energy have not yet enacted the regulations about setting up vehicle charging stations in condominiums. Without regulation, disputes between tenants and neighbors may arise. Such conflicts and the difficulty in reaching agreements could be a barrier to the widespread entry of electric vehicles into the vehicle pool in Israel. The Planning and Building Regulations (Installation of Parking Places), 1983, require (as of March 2023) that the electrical panel of a new residential building be able to support the charging of 20% of all vehicles in the building. However, suppose the government's goals for reducing greenhouse gas emissions from new vehicles are achieved, there will gradually be over 20% electric vehicles in condominiums; therefore, the existing regulations are not in line with the government's goals.

- **Traffic Arrangements and Parking Enforcement at the Public Charging Stations –** the Ministry of Transportation has not yet formulated a draft amendment to the Traffic Regulations, 1961, and the Traffic Order (Fine Offenses), 2022, even though

Government Resolution 542 in October 2021 determined that by September 2022 the Ministry of Transportation will present to the Knesset Economic Affairs Committee the guidelines on the proper use of public charging stations. Furthermore, the Ministry of Transportation has not yet presented guidelines on the appropriate use of public charging stations, and there are no tools to enforce the matter.

The Electricity Sector's Preparedness for the Entry of Electric Vehicles

- **The Work Assumptions of the Electric Company and the Noga Company Regarding the Government's Resolution –** the preparedness of the electricity sector for the transition to electric vehicles – the Electric Company's working assumption is that from 2035, all new vehicles will be electric, while in 2030, 74% of the new vehicles will be electric. The Noga Company assumes that starting in 2035, all new vehicles will be electric, while in 2030, about 70% of new vehicles will be electric. These assumptions are not in line with the government's resolution, which stated that by 2030, light vehicles whose emissions will be 95% lower than emissions in 2020 will be imported to Israel.

- **Installation of "Smart Meters" –** according to the Electricity Authority's report for 2021, there were only about 3.5% "smart meters" in Israel. This figure is low compared to the corresponding figure in other developed countries. By 2019, Sweden, Finland, Italy, Malta, and Spain had fully deployed smart meters. At that time, over 34% of the meters in the European Union member states were "smart," 10-fold the figure in Israel in 2021. Installing "smart meters" may lead to energy efficiency, and it is necessary for promoting the managed charging of electric vehicles.

- **Adapting the Electricity Grid's Development Plan to the Entry of Electric Vehicles –** the Electricity Authority's report for 2021 stated that the length of the transmission lines in the transmission grid reached about 5.8 thousand km, compared to 6.8 thousand km according to the development plan (about 85% from the target planned in the Electric Company's development plan for the years 2018-2022). Furthermore, by the end of 2021, there were 220 transformation systems compared to about 250 planned for 2022 (about 87% of the transformation system development plan). The number of distribution transformers increased by about 1.5% in 2021, compared to the planned increase of about 2.5% in installed capacity. The audit raised that the development plan for the delivery system prepared by the Noga Company did not address the impact of electric vehicles, which could add hundreds of thousands of new users to the electricity grid and even millions of users.

Recycling Electric Vehicle Batteries at the End of the Service Period – by the end of 2022, there were close to 363,000 hybrid vehicles in Israel, equipped with a

relatively large battery that could weigh up to tens of kilograms. Hence, in about 10 years, tens of thousands of electric vehicle batteries and hundreds of thousands of hybrid vehicle batteries will end their service period and pose a considerable challenge for handling at the end of their life cycle (end of life management). Nevertheless, the Ministry of Energy and Environmental Protection has not regulated electric vehicle batteries handling in Israel. The absence of regulation adversely affects preparedness for the entry of the new waste stream.

Charging Stations for City Electric Buses – under Government Resolution 171 in July 2021, starting in 2026, all new city buses will be electric. According to the Ministry of Transportation's plan for the electrification of public transportation, beginning in 2035, the use of diesel-powered city buses will cease. It was raised that in five planning areas examined – Beer Sheva, Eilat, Haifa, the Krayot, and the Valleys (Amakim), which are supposed to serve over 8,000 charging stations for city buses, no agreements were reached between the Ministry of Transportation and Ayalon Highways and the local authorities concerning 19% to 90% of the number of complexes, and the designation of the land does not match the required zoning in 50% to 70% of the complexes, thus creating a barrier to the construction of the terminals. Without agreements, there may be delays in establishing thousands of charging stations, and receiving electric buses will not be possible according to the multiyear plan. Furthermore, by the audit end, the Electric Company had not connected to electricity three out of six charging complexes in Haifa, Ramat Gan, Holon, Bnei Brak, Jerusalem, and Petah Tikva, the maximum consumption of which is higher than 8 megawatts, and which according to the Ministry of Transportation's plan were supposed to open by the end of 2022.

Increase in the Number of Electric Vehicles – in 2021, over 12,000 electric vehicles were registered (a 445% increase from 2020), and in 2022, over 30,000 electric vehicles were registered (a 149% increase compared to 2021).

The Beginning of the Demonstration Projects for Operating Hydrogen-Powered Vehicles in Israel – in December 2022, three heavy trucks equipped with electric hydrogen cell-fueled engines were imported to Israel. Hydrogen propulsion technology is a relatively new technology currently in development stages worldwide, including in Israel. Hydrogen technology may enable quick refueling and longer range of emission-free driving compared to battery-powered electric vehicles.

Key Recommendations

- It is recommended that the Ministry of Energy adjust fast charging stations for vehicles with different connections being imported to Israel according to the market needs, update the information on the Ministry's website reflecting the types of stations that exist, and encourage the relevant entities to continue setting up stations that provide charging for several types of vehicles, as is customary in Europe and the United States.

- It is recommended that the Ministry of Energy, in cooperation with the Ministry of Interior and the Electricity Authority, regulate the installation of electric vehicle charging stations in condominiums and their use improving the deployment of the EV chargers to prevent disputes and frictions and reduce appeals to the courts and land registration controllers.

- It is recommended that the Ministry of Interior, in coordination with the Ministry of Energy, update the Planning and Building Regulations (Installation of Parking Places) according to the progress of the transition to electric vehicles; thus, insuring that the electrical connection of the building supports the charging of all-electric vehicles in the building, and not only 20% as required by current regulations. It is further recommended that the Planning Administration, the Ministry of Transportation, the Ministry of Environmental Protection, the Ministry of Energy, and the Ministry of Construction and Housing, each under their powers and duties, complete the adaptation of the national outline plan – TAMA 18 – for the future expansion of the deployment of charging stations in the public expanse. It is further recommended that the ministries above cooperate with the Electric Company to prepare technically for establishing the transformation stations and other electrical infrastructures to establish charging stations in condominiums.

- It is recommended that the Ministry of Transportation and the Ministry of Energy determine – in consultation with the team for the implementation of the government's resolution – quantitative goals for the layout of public charging stations and the means of realizing these goals in the planning team's policy document, and continue mapping and updating the existing and future design of the public charging stations. It is recommended that the Ministries of Transportation and Energy complete the required planning of the public stations and adapt them to the quantitative goals and the geographical layout determined in advance.

- It is recommended that the Ministry of Energy and the Electricity Authority verify that the electricity demand forecasts for electric vehicles prepared by them, in collaboration with the Noga Company and the Electric Company, are in line with the target set in the government resolution and that the plan for the development of the electricity distribution segment will meet the challenges facing the distribution network, including the connection of charging stations in built-up areas. If, in their opinion, it becomes necessary to update the targets set by the government, they should propose to update them to reconcile the forecast for electricity demand from electric vehicles affected by the estimates of the entry

of these vehicles and the targets set by the government for their entry. It is recommended that the Ministry of Energy, the Electricity Authority, and the Electric Company monitor the implementation of the "Smart Meter" project and promote it to realize the potential savings inherent in this streamlining. It is further recommended that the Electricity Authority and the Electric Company encourage the use of the energy demand management ("Taoz") tariff (which creates a direct link between the costs of electricity production and its supply at different times and the price paid by the customer) or through tariffs based on the price of electricity in real-time among private customers while focusing on electric vehicle owners.

Third Chapter: Taxation of the Automotive Industry

Key Findings

- **"Green Taxation" –** "Green taxation" means a method of imposing a purchase tax whereby vehicles are entitled to tax reductions according to their level of emissions. This taxation method was implemented in August 2009. In 2009 – 2012, following the application of green taxation, there was a continuous decrease in the import rate of polluting vehicles with pollution levels of 11–15 from 32% to 14%, and at the same time, there was a significant increase in the import rate of vehicles with low pollution levels of 1–5 from 19% to 69%. However, following the application of the updates to the taxation formula and the tighter requirements for reduced pollution, the trend reversed in 2012, and the rate of the most polluting vehicles (according to the updated requirements) increased from 14% in 2012 to 31% in 2020, and the import rate of the vehicles with low pollution went down from 69% in 2012 to 39% in 2020.

- **Minimum Purchase Tax Rate from the Import Value on Passenger Vehicles –** in 2016, 2017, 2018, and especially in 2019, the average purchase tax rate on passenger vehicles was lower than the minimum rate set in the government's resolution from 2008, which is 60%. In these years, the average purchase tax rate on the import of passenger cars was 59.1%, 59.7%, 57.7%, and 52.4%, respectively. It was also found that in 2020 and 2021, the average purchase tax rate on passenger vehicles (62.1% and 61.4%, respectively) was above the minimum rate set by the government.

- **The Structure of the Tax on Vehicles –** the tax receipts in the vehicle industry include purchase tax, customs, fees, and VAT, all of which are not affected by mileage, as well as excise tax and VAT imposed on fuel consumption, which are derived from the mileage, i.e., "variable cost." The government's resolution in 2010 instructed an examination of a multiyear process focusing on the primary burden of payments on car mileage on variable costs (such as excise tax) to reduce travel by car and the damage resulting from them, including traffic accidents, loss of working hours and air pollution – alongside maintaining a fiscal balance (the scope of revenue required for the state budget). The audit found that the fuel excise tax has increased relative to the GDP in 2004–2009; however, this rate decreased from 1.6% of the GDP in 2010 to 1% of the GDP in 2022. The decrease is mainly due to the entry of economical vehicles into Israel. The reduction in the tax burden (as a percentage of the GDP) on the variable costs is inconsistent with the government's resolution from 2010, which, as mentioned, instructed to examine a multiyear process focusing the primary burden of payments on the variable costs. It was

also found that the total tax burden in the vehicle industry decreased from about 3.5% in 2010 to 2.5% in 2022 and that the fiscal balance was not maintained during said period. Therefore, there is no complete correlation between the types of external costs in the vehicle industry and the various types of taxes in the industry internalizing the various external costs.

- **Tax Revenues and the External Effects –** documents of the Ministry of Environmental Protection and the Ministry of Finance raise that in these ministries, it is customary to examine the differences between the total external cost (total damage from air pollution, road congestion, road accidents, noise, etc.) and the total collection of taxes in the vehicle industry. However, the condition for economic efficiency in the vehicle industry, which includes the internalization of the external costs, is not determined as an equivalence between the total external cost and the total collection of taxes in the industry. Still, instead, it occurs where there is an equilibrium, when the social marginal cost, including the private marginal cost of the additional travel by car (the cost of fuel, the cost of maintenance, the depreciation of the vehicle from high mileage, and the cost of time), and the marginal damage from the additional mileage (damage from air pollution, road congestion, traffic accidents, noise, etc.), is equal to the marginal benefit from traveling by car (the demand for traveling by car). Therefore, the equivalence of the total external costs and the total tax receipts in the industry does not necessarily create an economically efficient equilibrium in the vehicle industry in the use of vehicles.

- **Congestion in the Dan Metropolitan Area –** a congestion tax, set to take effect in March 2025 is expected to help internalize the external costs from the congestion in the Dan Metropolitan area circles. Still, it does not solve the external costs arising from congestion in other areas and additional external costs, such as infrastructure erosion, accidents, etc., in the various areas.

- **Determining a Fixed Tax Rate that Does not Depend on Pollution Emissions –** it was raised that many vehicles have a fixed purchase tax rate that does not depend on their pollution emissions. The vehicles categories and the tax rates are as follows: Vehicles whose total weight is over 3.5 tons to 4.5 tons – 72%; Vehicles weighing more than 4.5 tons – exempt from tax (0%); Tractors – 12%–30%; ATVs (except agricultural) – 30%–50%. Therefore, heavy vehicles (heavy trucks weighing more than 3.5 tons and buses) contribute about 46% of the total pollution costs resulting from traffic, and the purchase tax rate on them is 0% or does not depend on the pollution rate. For example, the purchase tax rate on buses that contribute 17% of the cost of traffic pollution is 0%; A heavy truck weighing over 3.5 tons contributes 29% of the cost of traffic pollution, the purchase tax rate on a truck weighing over 4.5 tons is 0%, and the tax rate on a truck weighing over 3.5 tons and up to 4.5 tons is fixed, standing at 72% regardless of the emissions scope. For taxis, a basic tax of 8% is set, and they receive a credit for the green score and the safety score, which significantly reduces the tax imposed to the point where it is nil in some models.

Variable Taxes on the Use of an Electric Vehicle – in 2022, over 30,000 electric vehicles were registered for travel, which is expected to increase in the coming years. At the audit end, no variable taxes are imposed on using an electric vehicle. However, the use of an electric vehicle also has a negative external cost, including road congestion, accidents, damage from air pollution due to electricity production, noise, alternative cost of alternative use of land designated for roads, harm to the natural environment, and the cost of eroding the transportation infrastructure.

Key Recommendations

- It is recommended that the Ministry of Finance and the Tax Authority focus the main burden of payments on the variable costs in the vehicle industry, according to the government's resolution from July 2010. It is also recommended to consider alternatives for an optimal tax composition, where at least one of the alternatives maintains fiscal balance in the passenger vehicle industry.

- It is recommended that the Ministries of Finance and the Environment and the Tax Authority consider conducting economic studies to estimate the marginal costs, the marginal damage of the various external effects and the marginal benefits in the vehicle industry, and additional economic incentives to contend with the external traffic effects. This is to determine the economic equilibrium where the external costs are internalized most efficiently and the tax rates that will bring about convergence to this equilibrium or approximation to it.

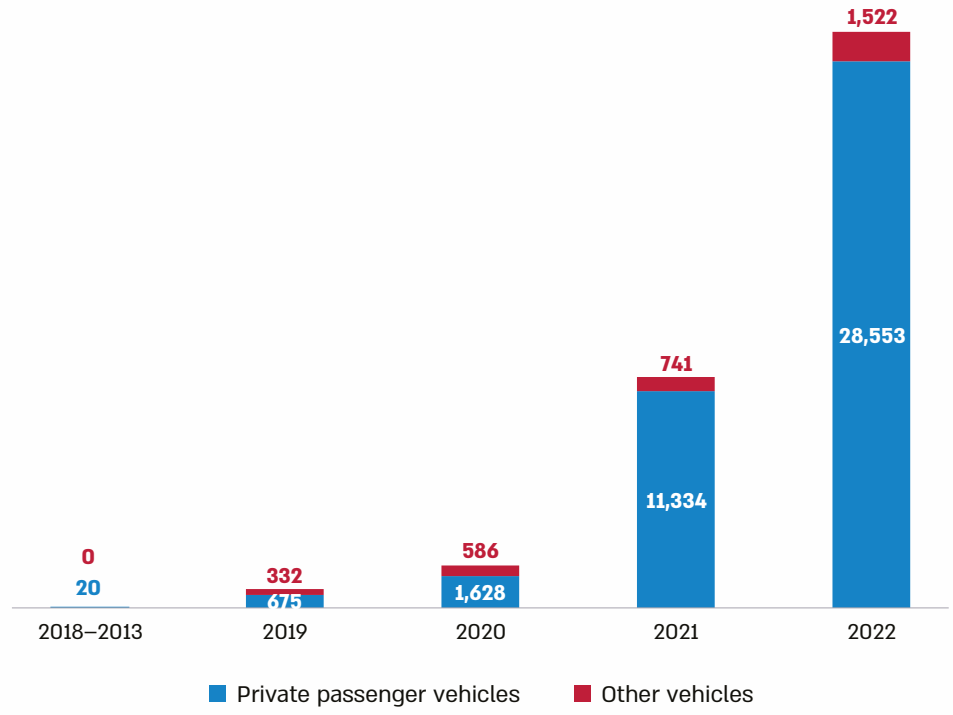
- It is recommended that the Ministry of Finance, the Tax Authority, the Ministry of Transportation, and the Ministry of Environmental Protection consider updating the composition of taxes in the vehicle industry, subject to the available technological solutions. This will improve the correlation between the characteristics of the external impact and the characteristics of the tax intended for internalization, similar to the congestion charge for internalizing the external costs of the congestion in the Dan metropolitan area promoted by the Ministry of Finance and regulated by law. It is further recommended that tax rates be determined to internalize the various external influences in the vehicle industry as effectively as possible. It is also recommended that the marginal costs of the various external effects of the tax rate be calculated separately for each type of vehicle.

- It is recommended that the Ministry of Finance and the Tax Authority examine the imposition of differential taxation that will also consider the scope of pollutant emissions and the actual mileage of existing heavy vehicles weighing over 4.5 tons and of other vehicles on which a fixed tax rate is imposed (tractors and ATVs) as well as examine the

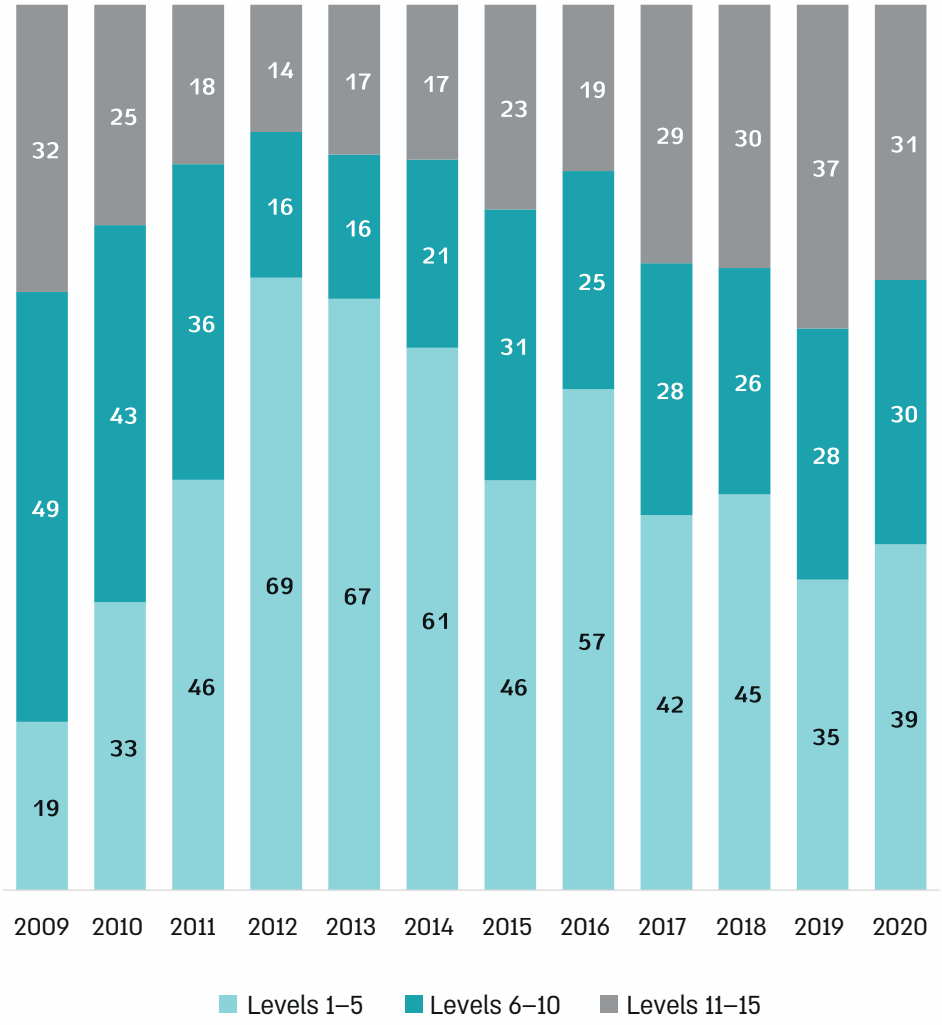
effectiveness of the purchase tax mechanism imposed on taxis and encourage the purchase of low-pollution taxis.

It is recommended that the Ministries of Finance, Transportation and Energy, and the Tax Authority consider the government's resolution from July 2010, which instructed examination of a multiyear process to focus the main burden of payments on variable costs. When considering changing the purchase tax rates on electric vehicles, it is recommended to determine a taxation structure that will reflect the external effects of electric vehicles and the benefits of reducing air pollution from traffic and will encourage the entry of these vehicles. All this is to meet the goals set by the government.

Registration of New Electric Vehicles in Israel (in units), 2013–2022



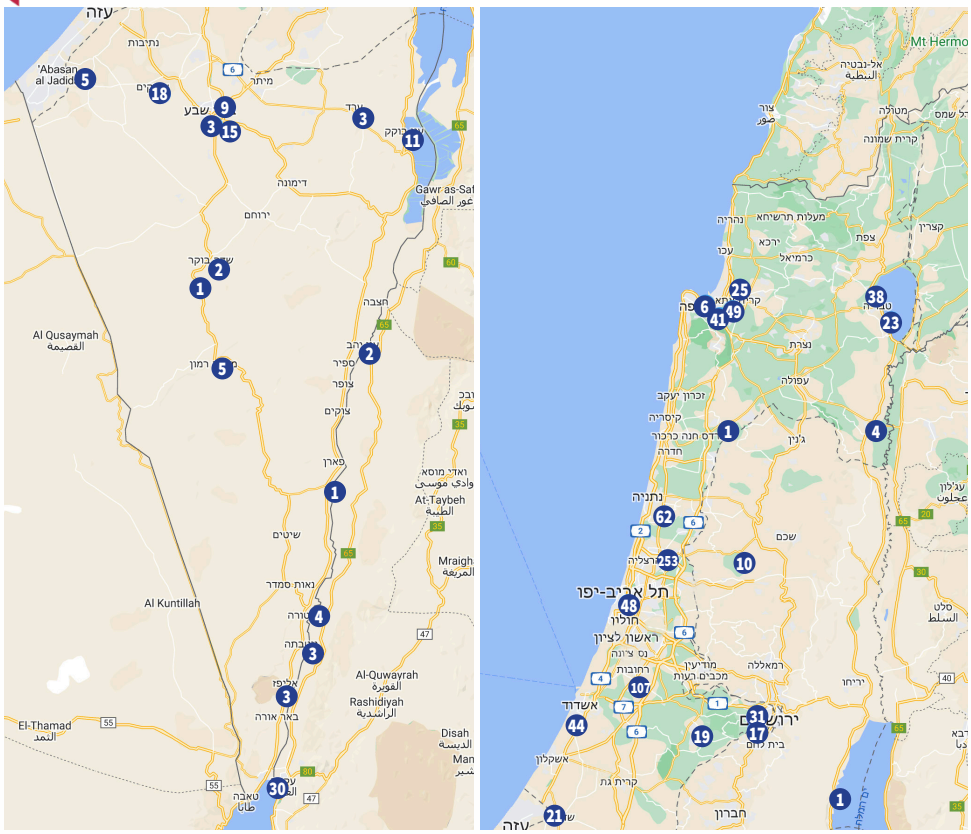
Breakdown of Vehicle Imports by Pollution Levels Groups, 2009–2020 (in percentages*)



Source: State Revenue Administration report for the years 2019–2020.

* Following the start of the formula updates and the increased stringency of the requirements for reduced pollution, the rate of the most polluting vehicles (according to the updated requirements) increased from 14% in 2012 to 31% in 2020; this does not indicate an increase in the amount of pollutants emitted by the vehicles.

Deployment of Public Charging Stations in Israel



Source: The Ministry of Energy's website.

Summary

Air pollution is the most significant environmental cause of mortality and morbidity in the State of Israel, and the cost of traffic air pollution in 2018 was about NIS 7.2 billion. The audit raised that the processes for reducing air pollution caused by gasoline and diesel fuel-powered vehicles and the preparedness for the widespread entry of electric vehicles into Israel mandate systemic solutions for the regulation of the various fields, including: the treatment of heavily polluting vehicles, the regulation of EV chargers in condominiums and public charging stations, the preparedness of the electricity sector for the increase in demand for electricity resulting from the expected increase in electric vehicles in the coming years, the preparedness of the tax system for the entry of electric vehicles, including changes and optimization of the composition of the taxes from the fixed and variable costs and the optimization of the internalization of the various external effects from electric vehicles and vehicles with an internal combustion engine.

The Ministries of Transportation, Finance, Environmental Protection, Energy and Interior, the Tax Authority, the Electricity Authority, the Noga Company, and the Electric Company should cooperate with the local authorities, who play an essential role in initiating operations within their jurisdictions, to rectify the deficiencies noted in this report.

Implementing the report's recommendations may reduce traffic air pollution, improve the internalization of the negative external costs of traffic, and prepare for the entry of electric vehicles and other advanced technologies, simultaneously with the continuation of the government's promoting public transportation and expanding use thereof.

It should be noted that the Ministry of Environmental Protection stated in its reply that most of the actions indicated in the report are of great importance to the State's ability to reduce its greenhouse gas emission goals.