Merkavim

Merkavim Transportation Technologies Ltd.

Sustainability Report

2022-2023

Merkavim

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A Word from the Chairman of Mayer Group

As a leading vehicle group in Israel, we recognize the importance of integrating environment stewardship and community engagement as part of the group's ongoing activities. In 2023 we faced challenges that no one imagined we would have to experience, not only as a company, but primarily – as human beings. As we deal with the national tragedy, it is important for us to strengthen the hands of our employees, suppliers and customers who have been affected by the situation and to express pain and longing for those who cannot be with us today.

Throughout the 57 years in which the Mayer Group existed, the emphasis has always been on development, innovation and human capital. This is the group's first Sustainability Report, which we wrote out of the vision to be a leading company with a significant positive social and environmental impact. The report was produced as part of the development of a sustainability strategy uniquely suited to the group's companies, focusing on the needs of its stakeholders, maximizing the company's impact and prudently managing the challenges arising from the climate crisis of the 21st century.

We are aware of the impact of the automotive industry on the climate crisis and are looking at how to reduce our environmental footprint in the coming years. We are committed to a better future, which pushes us to continue looking for new ways to improve. In the past year, we have carried out in-depth work among the group's companies and created a sustainability strategy that considers the unique needs of each company, its stakeholders and the environment in which it operates. Our sustainability strategy is built on the foundations of environmental protection, social engagement, promoting the local economy, and empowering our business resilience and the community in which we operate and live.

In accordance with the ethos of the group and the needs of the hour, we strive to leverage the advantages of the group’s companies and work with our business partners, suppliers and customers while keeping the present in mind and looking towards the future.

Sincerely,
Or Shahar
Chairman Mayer Group

A Word from the CEO of Merkavim

We, at Merkavim, are proud to be part of the Meir Group and strategic actions to promote sustainability at the national level. As one of the main companies in the heavy vehicle industry, our responsibility towards the environment, our customers and the communities around us is a candle to our feet.

In recent years, we have invested resources in developing solutions with consideration for the environment, while striving to integrate advanced technologies in our bus assembly processes, and to offer sustainable and more efficient public transportation.

Thanks to our many years of work, together with the commitment of our employees, we are moving towards a future where we can expand our positive impact - on the environment and society.

In addition, we maintain collaborations that guarantee quality and durable production, with the aim of reducing the environmental impact throughout the life of the product and at the same time we emphasize maintaining safety and comfort standards for the users of our products, with the desire to continue to be an example of responsible and meaningful action.

Sincerely,

Nir Pozner

CEO of Merkavim

About the Report

The first Sustainability report by Merkavim presents the company's activity regarding environmental, social and economic aspects for the reporting years 2022-2023. Our sustainability strategy addresses our impact on the world in bus production, and the increasing use of public transportation through a positive travel experience. We aim to continue to work to reduce our ecological footprint, and to make public transportation accessible to passengers.

The report was written in alignment with the GRI Reporting Standard, and accordingly focuses on issues that have been defined as material to the activities of Merkavim in the fields of environment, social and corporate governance. We see the report as a central means of transparently sharing information about our sustainability strategy. The company will continue to publish periodic reports as an expression of its commitment to sustainable growth, promotion of ESG issues and communication of activity with the company's stakeholders.

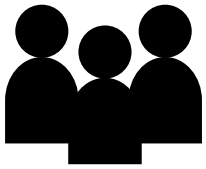
The sustainability report and the information presented in it have undergone relevant internal assurance to verify the data.

Company Background

Merkavim is a private company established in 1946 as a steel products manufacturer. Over the years, the company has focused on the development and manufacture of public transportation vehicles. Today the company employs 705 employees and has a production capacity of about 1,000 buses per year. Among the company's products include low-floor city buses, intercity buses and tourist buses. In addition, the company manufactures bespoke buses for specific customer needs, such as bulletproof armored buses and 4 types of fire trucks. The company manufactures and assembles the outer bodies of the buses in Israel based on the specifications of chassis models imported from overseas suppliers.

Today, the company is jointly owned by the Volvo Global Group and the Mayer Group, one of the largest automotive companies in Israel. The center of activity is in Caesarea Industrial Park, which covers an area of 100,000 square meters located close to main transportation routes. The modern industrial park has been built with sustainability at the core of the design in accordance with European building standards. The industrial park includes a dedicated area for solar power generation that helps reduce its energy intensity and carbon emissions/ Another Merkavim operation site was established at the Hasharon Prison and is integrated into the rehabilitation program of prisoners.

2022-2023 in Numbers



705

Employees

50

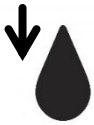
Employed in Prison Rehabilitation Programs

650

Buses per Year

3,000

Body Parts



Decrease of 7% of Average Bus Water Consumption

Decrease of 15% of Average Bus Power Consumption

OUR ROUTE

1946

The company was established in 1946 in the Ramat Siv industrial zone of Petah Tikva, originally named "Megan Chatwood."

1956

In 1956, the factory became part of the Koor Industries group, the company's industrial division. The company's name was changed to "Merkavim."

1996

In 1996 Koor Industries sold 49% of the company's shares to the Volvo Global Group and the Mayer Group.

1999

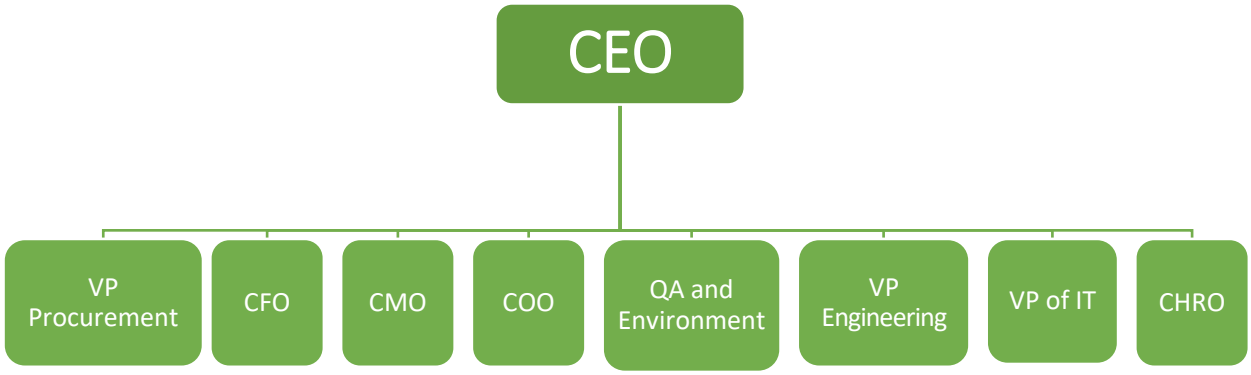
In 1999, Koor Industries sold the rest of its shares to the Meir Group, Volvo continued to hold 26% of the shares of Merkavim

2000

In 2000, Merkavim relocated its factory to the industrial park in Caesarea.

2022

Organizational Structure



Executive Management

The senior management team consists of nine managers, including one female manager. Management meets on an ongoing basis at via management meetings or within the framework of designated committees. Merkavim's management takes a thoughtful approach to outline a business strategy, considering the company's values and emphasizing environmental, economic, social and safety factors in the decision-making process.

Manufacturing Activity

Merkavim specializes in the manufacturing and assembly of buses, including the development and design of models for a variety of purposes including public, private and corporate use cases. The buses manufactured at the factory comply with the Euro VI Standard, are powered by diesel or electrical energy and are manufactured in accordance with standards set by the Israeli Ministry of Transport.

As a result of improved operational efficiency, the company's annual production capacity increased from 650 city and intercity buses in 2022 to1,000 buses in 2023.

Our City Buses have a low floor and are usually designed without the use of stairs, which is intended to help all passengers, in particular disabled persons, get on and off the buses safely and comfortably. The city buses have a large interior space and can accommodate up to 93 passengers sitting and standing, with the articulated buses accommodating up to 133 passengers.

Electric Buses are part of the city bus fleet that the company manufactures. The Articulated Electric Bus model includes a rotating surface with a lowered and accessible floor and an interior space that can accommodate up to 118 passengers sitting and standing. The Pioneer Urban Bus model is also lowered and accessible and can accommodate up to 93 passengers. The Higer Electric Bus includes 3 wide passenger doors that allow for efficient passenger embarkment and disembarkment.

The Intercity Buses are designed for long-term travel and are therefore equipped with ergonomic seats that provide comfortable seating for an extended period. Each bus can accommodate up to 55 passengers. The buses are equipped with advanced electrical and climate control systems, indoor and outdoor cameras and advanced audio systems to enhance the passenger’s travel experience. There are accessible models for intercity buses that include an electric lift designed to help disabled persons get on and off comfortably.

In addition to the standard line of buses in the company's bus catalog, Merkavim manufactures buses with bespoke specifications in accordance with specific customer needs, including **Armored Buses** designed to transport passengers in high-risk geographic areas. Other examples of a bespoke model design are an **Ambulance Bus** designed to evacuate

multiple casualties and a **Mobile Library Bus** that makes the reading experience accessible and takes the library directly to the public.

In 2022, Merkavim began manufacturing **Fire engines**. The company uses the experience and knowledge it has accumulated in designing and assembling buses to manufacture firefighting vehicles suitable for the urban environment, as well as armored firefighting vehicles and modified to the needs of the customer.

ESG at Merkavim

Sustainability Vision

Merkavim strives to provide sustainable transportation solutions that allow people to move freely, while reducing the environmental footprint of the company and its customers. The company is committed to developing and manufacturing sustainable, safe and efficient solutions whilst operating a responsible business in collaboration with all its stakeholders.

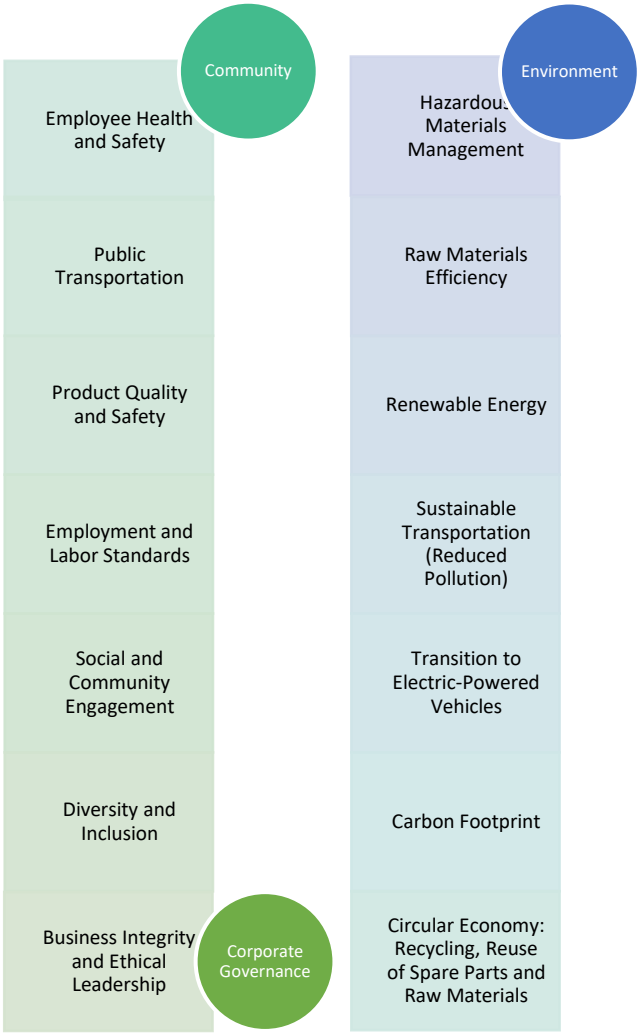
Environmental and Social Commitment

Merkavim is aware of the effects of its activities on the environmental and social spheres as the largest bus manufacturer in Israel and being part of the local Mayer Group and the international Volvo Group. The company is committed to promoting social mobility and public transportation and investing in solutions that address the challenges of transportation whilst preserving the natural resources of the planet. As part of the company's activities over the years, resources have been invested in employing and promoting a variety of employees, environmental procedures have been developed and implemented, and of course great emphasis has been given to the issue of the safety of employees and passengers alike.

Merkavim is committed to public transportation as both a local – communal and environmental growth engine.

Material Topics to Report, and Their Connection to the UNSDGs

As part of writing the report, the material topics of the company were mapped for ESG reporting using materiality assessment methodologies. The material topics to be presented in this chapter stem from conducting dialogues with the organization's stakeholders, in accordance with the sectoral BP in the ESG fields, the UNSDG's and with the approval of the company's Sustainability Committee.



SDGs

In 2015, the UN introduced 17 Sustainable Development Goals (SDGs). The goals reflect and define the global development agenda in the fields of environment, society and economy by 2030. As part of its sustainability strategy, Merkavim is joining the global effort to promote SDGs targets.

SDG 3: Good Health and Well-Being

Merkavim works to ensure healthy life and well-being at all ages, with an emphasis on Target 3.6 - Reducing the number of global deaths and injuries from road traffic accidents. The company's safety goals and procedures are designed for all road users, both inside and outside of our vehicles, while continuously improving the passive and active safety features of our buses. Passive safety is designed to minimize the consequences of any accident, and active safety means developing measures to help avoid accidents.

SDG 8: Decent Work and Economic Growth

Public transportation systems serve as a decisive lever in the process of economic growth, contributing to improving the welfare of the citizens of the country and even reducing economic and social gaps.

Merkavim is committed to promoting sustainable economic growth, while providing full and productive employment and decent work for all. The Company strives to provide fair work to all employees in accordance with Target 8.5. The company places a major emphasis on employee's health & safety, in accordance with Target 8.8 and works to create safe and secure work environments in the factory and along the supply chains.

SDG 9: Industry, Innovation and Infrastructure

Merkavim uses and strives to continue to implement innovative manufacturing methods. The company focuses on the Target 9.4 – Improving the efficiency of resource use, reducing greenhouse gas emissions and waste for each bus manufactured at the company's factory.

SDG 10: Reduced Inequality

Public transportation is a key means of making workplaces, public services and leisure sites accessible to the general population, with an emphasis on low-income, children, the elderly, residents of the periphery and residents who do not have a vehicle for everyday use. Having an efficient public transportation system makes it possible to reduce household expenditures on transportation while improving social gaps. In accordance with Target 10.2, Merkavim emphasizes inclusion for all and accessibility, which allows a safe and inviting travel experience for each passenger.

SDG 11: Sustainable Cities and Communities

Public transportation systems contribute to economic efficiency and urban and regional development. Merkavim's activity directly contributes to Target 11.2 and enables the accessibility of safe, accessible and sustainable transportation systems by 2030 by public transportation.

SDG 12: Responsible Consumption and Production

Effective management and use of natural resources are included in the UN SDG 7 and SDG 12. Merkavim works to achieve Target 12.2, strives to increase efficiency in the use of natural resources by efficient production and optimal use of materials, reducing fuel consumption on buses and of course the manufacturing of electric buses.

SDG 13: Climate Action

Dealing with the climate crisis touches many of the SDGs and includes, among other things, energy efficiency and the transition to sustainable transportation. Target 13.3 summarizes this and aims to increase awareness and capabilities to reduce greenhouse gas emissions and prepare for a crisis. Merkavim attaches great importance to the efficiency of fuel use and growth in the production of electric buses.

The Environmental Angle Environmental Management

Buses are the basis on which public transportation in Israel relies; they are designed to allow getting from place to place with minimal energy resources, and maximum safety for civilization and the environment.

The environmental profile of Merkavim is based on two complementary components in which the company focuses its efforts on reducing the environmental footprint:

1. The environmental impact of the bus itself throughout its full life cycle, including circularity of raw materials and environmental impacts at all stages of production and assembly through to the end of the life of the bus[1].
2. The environmental impact of the bus as a means of public transportation, while being used by the bus companies and their customers.

The environmental impact of the bus throughout its full life cycle.

Manufacturing and Assembly of the Bus

The process of ordering a bus in Israel usually begins with a tender on behalf of the Ministry of Transport with public transportation operators, in which a mix of municipal and intercity buses is defined, intended for use within a period of 10 to 12 years in a defined area.

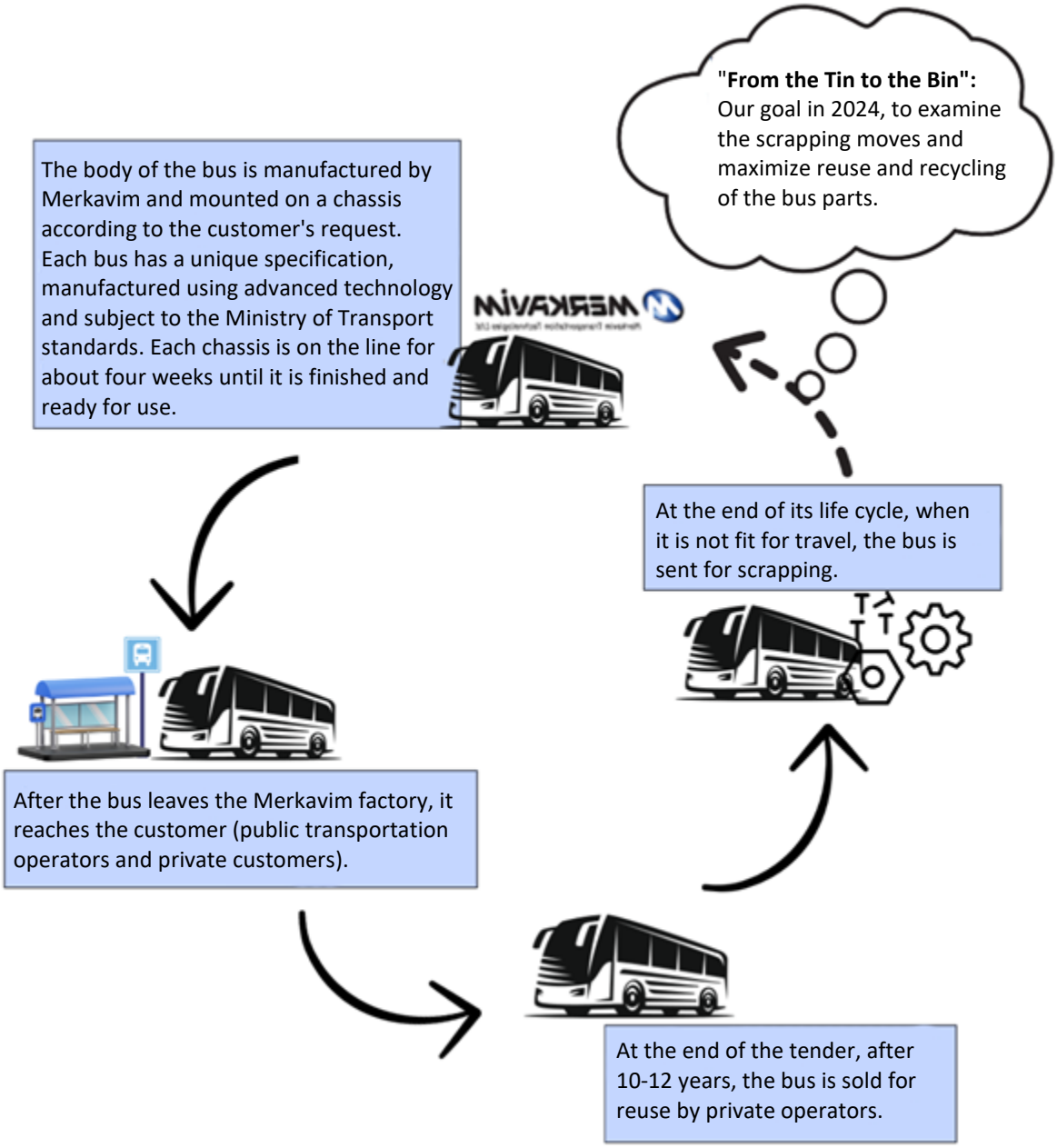
The winning bus companies define the requested manufacturing specifications for the vehicle importers, and accordingly, the importers order the chassis from abroad. These chassis come directly to the Merkavim factory, where the workers manufacture and assemble the desired body on the chassis.

At the end of the assembly, the buses are transferred for use by the bus companies in accordance with the terms of the tender. At the end of the tender period, most buses are sold for reuse by private bus companies and later for scrapping.

[1] In 2022-2023, about 7% of Merkavim's products were fire trucks, whose manufacturing process is mostly based on installations and assemblies, without color and with a minimal welding combination. Accordingly, the ecological footprint of the fire trucks during the reporting period is very low, and the current report is not presented as a separate category.

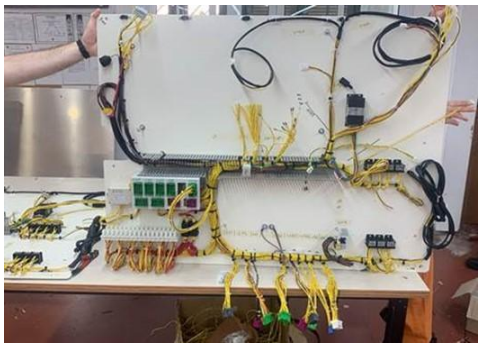
To promote circularity in the production of buses, one of our goals for 2024-2025 is to examine the possibilities of using the bus parts at the end of the bus life cycle as a means of transportation (see the "Circularity at Merkavim" section).

Bus Life Cycle



From the Tin to the Body - Manufacturing and Assembly at Maximum Efficiency

The 3000 parts of an average bus body are assembled in a manual process; some are manufactured in the company's factory in Caesarea, and some are purchased from external suppliers. The parts based on metal processing and painting are manufactured in the factory,



and together with additional accessories, are packaged in kits and issued in manufacturing and service warehouses as needed.

Another part of the process is invested in the manufacturing of electrical braids and assembly of an "electric switchboard" - the technological management center of the bus. The switchboards are such a significant part of the advanced buses, that some call our buses "computers on wheels".

Local Manufacturing in Prisons

In addition to the central site in Caesarea, Merkavim operates two additional manufacturing facilities where prisoners are employed for rehabilitation. One is in Hasharon Prison, where two company foremen are employed, leading a group of prisoners who are engaged in welding and cutting tin. The second is in Tzalmon Prison where the prisoners manually manufacture electric braids. Merkavim transfers the raw materials to these facilities and is responsible for transporting

Bus Assembly

The full body is gradually installed along the production line. In the first stage, the chassis are delivered from the port to the factory in Caesarea. Diesel chassis arrive with an open carrier from the port. In contrast, the electric bus chassis, which includes a high voltage battery, require higher protection and are transferred from the port wrapped over a tow truck. Any part that is not required during assembly is disassembled before the chassis enters the line - in the diesel chassis the batteries are disassembled, and in the electric bus chassis the lithium battery is disassembled.

Each chassis entering the production line includes propulsion and steering systems and a temporary fuel tank used to drive the chassis between the stations. The chassis pass between five central stations on the line: chassis, structure, systems, carpentry and delivery.

First, the bus wall is welded to the chassis using an automatic welding robot, while the small parts are welded manually. Next, the seats, the bus roof, an integral air conditioner and the bus floor are assembled.
Upon completion of the initial assembly, the technological systems are installed. The amount of low-voltage wiring is extensive and includes but not limited to a personal central climate lighting and control system, a public address system, a ticket validation system/

Operational and Environmental Efficiency "Takt Time"

In 2023, the company's manufacturing and procurement processes were converted into manufacturing and assembly using the Takt Time method, with the aim of increasing the company's production potential from 650 buses to 1,000 buses a year. Takt Time is a manufacturing method that defines "beat time" – the rate required to complete a product according to customer demand. Takt, the German word for "rhythm", represents the average time interval between the start of production of one unit and the start of production of the next unit, when the items are produced in sequence.

As part of the adjustments made to implement this production method, the production line is divided into stations, so that each bus spends only four and a half hours at each production station. If the activity at the station is not completed, the bus continues to the next station and returns to completion at the end of the line. With this method, each employee is linked to a station on the line, which allows for the professionalization of employees, time management and, as a result, also efficiency. Procurement and inventory management are adapted to the method, which also enables efficient management and tight control of thousands of SKUs installed on each bus.

The Takt Time method helps the company to manage effectively and responsibly and reduce ecological footprint. Applying the method is expected to assist energy saving efforts thanks to maximizing production processes and machine operation hours, in addition to raw material savings, thanks to accurate and controlled use of the production process.

Raw materials - Quality, durability and energy savings

The process of choosing raw materials includes ensuring accurate characteristics, especially in terms of strength and durability. This is to maintain the safety of the bus while traveling on it and the quality of the bus during the full life cycle.
To date, we use primary raw materials in the manufacturing of buses - so far, no recycled material has been found to meet the design requirements of our buses. However, Merkavim monitors the innovations in the field, and has set a goal to promote the subject during 2025.

The main metal in our buses is **stainless steel**, a strong and lightweight metal that has many environmental benefits. The strength of stainless steel compared to its weight, compared to alternative materials such as black iron, allows the manufacturing of relatively low weight resistant buses and consequently saves energy during travel, compared to alternatives. In addition to being strong and stable, stainless steel is characterized by high resistance to corrosion and rust. Also, stainless steel requires minimal maintenance without wear and tear and contributes to the extension of the bus life cycle.

The service doors are made of **aluminum** to allow for ease of movement, which makes our buses unique. Since aluminum does not rust, its use increases the durability of buses in frost and rain zones, reducing the need for spare parts over time.

Handling Hazardous Materials

The hazardous materials are handled with great care and in accordance with the factory's toxins permit, so that they do not constitute an environmental hazard. The hazardous materials are stored in the gas farm in the factory yard, in refrigerated containers in the central warehouse and in the fuel station, accompanied by appropriate signage and defined procedures that are regularly enforced. The company conducts sampling to prevent soil contamination twice a year, without exceptional findings in 2022-2023 (see Wastewater Management Section).

Gas Farm

A closed and controlled gas farm is in the factory yard and is managed accordance with the necessary precautions. The farm contains gases such as compressed argon, dissolved

acetylene, compressed oxygen and carbon dioxide, which are required at various stages in the bus assembly manufacturing process.

Fiberglass

The front panels of the buses are made of **fiberglass** – a strong, durable and lightweight material, the production of which involves the use of chemicals, and sanding it causes the dispersion of fiberglass dust particles (glass fibers).

In the past year, we have been examining the feasibility of the transfer of fiber products to ABS materials. At the same time and until a relevant change is implemented, to reduce the need for cutting and sanding the material, the fiberglass front panels are produced by injecting the material into dedicated reusable molds, to reduce the need for cutting and sanding the material. Besides that, suction devices and chimneys are installed in the factory in the department, and there is a strict use of personal protective equipment and compliance with the safety instructions.

Merkavim Gas Station

Each chassis comes with a temporary diesel fuel tank of 50 liters and is fueled in the factory as needed and for the purpose of moving between the production stations. To this end, the factory yard operates a fuel-free gas station, which is fed by an overhead accumulator, to reduce the fear of soil contamination in the event of a leak. At the gas station, filtering and absorption systems are installed as required by law. The station operates in a measured and controlled manner and is mainly used for refueling the chassis. In addition, there is underground piping for transporting diesel fuel from the station to the paint ovens.

Adhesives – Energy Savings in Drying

The bus assembly process includes pasting operations, while matching designated adhesive materials for each stage of the process and an effort to save energy. For example, in the core processes of bus manufacturing, the stainless-steel cans are glued to the body chassis by an adhesive that takes 24 hours to dry. This process replaced

Emissions During Production

During the welding, painting, fiber casting and tarring processes in the production factory, emissions emit into the air.

To reduce the environmental and health impact, Merkavim works proactively to prevent and monitor all emissions. For this purpose, personal suction systems are installed at the workstations, alongside advanced suction systems in the relevant rooms. In addition, Merkavim insists on sampling chimneys and examines concentrations of pollutants such as SOX, NO2, and organic materials (TOC), while meeting the maximum requirements listed in the business license.

Water Uses

The company's water consumption for 2022 was approximately 1,500 cubic meters per month, with the average water consumption per bus from the beginning of production to the end being 31 cubic meters of water. During 2022, we became more efficient and bus water consumption decreased by 7% compared to 2021.

During 2023, our water consumption was about 1440 cubic meters per month, and we maintained an average water consumption of about 32 cubic meters of water per bus.

Wastewater

Merkavim, in cooperation with the Caesarea Park Administration, performs periodic wastewater sampling at the exit from the factory, without unusual events. The factory is in Caesarea Industrial Park, located on the coastal aquifer. The company sees great importance in preserving the quality of water in the aquifer and is careful to drain wastewater according to the regulations, to prevent the flow of industrial wastewater into the sewage system. Treated industrial wastewater and non-industrial wastewater, is filtered by an oil separator and flow into the sewage. Twice a year, oil and fat separators are pumped and cleaned.

Waste

The factory produces less than 50 tons per year of waste and is therefore defined as a "small waste manufacturer". In practice, most of the waste is handled by Caesarea Industrial Park, which provides municipal services. Packaging waste and electronic waste are managed in accordance with the "Extended Manufacturer's Warranty" laws at the Ministry of Environmental Protection.

Hazardous materials waste – paints, tar and adhesives, oils and "small" electronic waste such as batteries, is handled directly by the company and transferred to landfill in accordance with relevant regulations.

Merkavim is aware of the environmental importance of circular economy applications, and works to manage raw materials wisely, leveraging them as a resource. Throughout the production process, the wood and iron surfaces are collected for reuse by the suppliers, the metal waste and the paper and cardboard waste are transferred or sold for recycling, and the excess fuel that comes with the chassis is recycled in an excess container.

Paper Uses

Beginning in 2022, all marketing materials, vehicle books, and spare parts catalogs are offered to customers digitally. In addition, the company's headquarters switched to a signature method in digital systems and sends the pay slips digitally, actions which reduce the use of paper.

Bus Life Cycle Extension – Preventive Maintenance and "End of Life"

The bus that Merkavim manufactures is designed to stay on the road for many years. In the first stage, which lasts about a decade, the bus is used by the public transportation companies that win the tenders of the Ministry of Transport in Israel. Each bus is issued with preventive maintenance instructions to optimize and extend its life cycle on the road. In case of malfunctions, the service department is contacted, and the network of outdoor garages spread throughout the area are engaged for a quick repair. Following each malfunction, a process of drawing conclusions is carried out, which are subsequently implemented. At the end of the tender period, most buses are sold to private transportation companies until the bus is taken off the road. There is no monitoring of the bus after the completion of the tender period.

With the rising awareness of the issue at Merkavim, it was decided that during 2024, end-of-life management procedures for buses will be examined, while evaluating the possibilities of using the bus parts themselves, when they are taken off the road.

Local Procurement, Sustainable Supply Chain

The Ministry of Transport bus tenders, in which our customers participate, give a high score for a fleet of vehicles in which at least 30 percent of the buses are produced locally in Israel. As a

result, we also prioritize local manufacturers as much as possible, for both economic and environmental considerations. Moreover, as part of our goal to promote green procurement, in 2024 the company will distribute routine supply chain surveys, which are designed to help increase communication with our suppliers and add sustainability indices to the discourse.

Preparing for the Climate Crisis at Merkavim

Merkavim recognizes the significant role of the transportation industry in the global transition to a low-carbon economy and the unique ability of industry players to drive change. The company's activity in the field is focused on reducing greenhouse gas emissions, both in the internal production processes and in the effort to reduce bus emissions during their travel.

This report will present the carbon footprint data of the company's activity for 2023 after it was first calculated, and we are committed to expanding the calculation in the coming years vis-à-vis our customers in the framework of measuring Scope 3 (Supply and Distribution Chains). The company relies on all the means of reduction at its disposal, starting with energy efficiency, moving to renewable energy and expanding the production volumes of electric buses. At the same time, the climate crisis may have effects on the company's activity in physical and economic aspects, such as carbon taxation. Therefore, one of the goals set for the continuation is monitoring climate risk exposure as part of the environmental risk management processes.

Our Buses: Reducing Emissions While Traveling

There is great importance in reducing the carbon footprint of the buses throughout their life cycle. In practice, the main greenhouse gas emissions take place during bus trips – Scope 3. In diesel-based buses, it is possible to identify a reduction in emissions by reducing the weight of buses with the transition to the use of stainless steel, instead of black iron, which among other things leads to streamlining the use of fuels. At the same time, there are efforts to increase the production of electric buses, and in recent years there has been an increase in the work with suppliers who specialize in the production of electric chassis. Among our goals for 2025 is to calculate the carbon footprint of a single Merkavim bus as a starting point for a future emission reduction plan.

The Transition to Electric Buses

Electric buses significantly reduce air pollution, greenhouse gas emissions and noise hazards, and are an important component of the global transition to a low-carbon economy. However, they require a special infrastructure for charging and maintenance, which does not yet sufficiently exist nationwide in Israel. Therefore, as of 2023, the demand for electric buses among our customers is relatively low.

Merkavim follows the objectives of the Ministry of Transportation and Road Safety as well as the Ministry of Energy and the installation of the charging infrastructures and is prepared for an immediate increase in the production volumes of electric buses. We are aware of the safety risk arising from the use of lithium batteries, and therefore dedicated safety instructions have been formulated for the electric bus processes. In addition, in accordance with the company's procedures, the number of batteries in stock is carefully managed and performed based on the toxins permit.

We are particularly aware of the risk arising from non-recyclable lithium batteries given the landfill damage of batteries containing heavy metals, and the loss of raw material whose mining involves many resources. We are working to find solutions for managing the end of the environmental life cycle of lithium batteries and are examining the innovations in Israel and around the world.

Carbon Footprint

This report presents the first carbon footprint of Merkavim for 2023, focusing on emissions resulting from Scopes 1 and 2 - Direct emissions in the factory and indirect emissions resulting from electricity consumption. In the coming year, we will continue to measure our carbon footprint, even in Scope 3 which relates to “other indirect emissions” in our supply and distribution chains.

We aim to reduce our carbon emissions, and in the coming year we will set measurable targets to reduce emissions in the coming decades. For this purpose, comprehensive mapping is being carried out that includes the main sources of direct and indirect emissions, which will serve as an anchor for the future emission reduction programs.

Greenhouse Gas Emissions in 2023

	MTCO2e
Scope 1	626
Scope 2	901

*Calculations are based on the GHG Protocol methodology

Energy Consumption

Electricity consumption during 2022-2023 stood at about 330,000 kWh per month, with 85% of the company's electricity consumption stemming from the production and assembly halls, where the average monthly electricity consumption in 2022-2023 was 280,198 kWh.

In 2022 and 2023, there was an 11% decrease in electricity consumption compared to 2021, despite the increase in bus production, thanks to the efficiency of the factory.

The average electricity consumption for one bus from the beginning of production until completion in 2022-2023, was 6,868 kWh per unit, **a decrease of about 15% compared to 2021.**

The factory has 25,000 square meters of solar panels installed on the factory roof rental model. However, as of today, renewable energy is being sold to an external supplier, and we are exploring how to leverage renewable energy as an environmental asset, leading to a reduction in greenhouse gas emissions in Scope 2 (Indirect Greenhouse Gas Emissions).

Energy Efficiency

Merkavim adheres to efficient energy behavior procedures and places great emphasis on monitoring and saving electricity consumption on a regular basis. In 2023 three were replaced with three old compressors, which led to a 25% savings in annual energy consumption.

At the same time, the real-time lighting control and monitoring system for paint ovens and compressors was installed using counters, including the issuance of weekly comparison reports to identify anomalies. In addition, circuit breakers were installed at the company's offices, for automatic control and shutdown of the appliances daily.

In addition, in 2023, a transition to LED lighting was completed in the production facilities and offices, which led both to energy savings, and to an improvement in the working conditions of our employees thanks to LED lighting that simulates daylight.

Fuel and Travel

The company owns 43 gasoline vehicles and 7 motor vehicles - trucks and forklifts, which consume diesel fuel. In 2023, fuel consumption was 106,617 liters of gasoline and 214,463 liters

of diesel fuel. Diesel fuel accounts for 67% of the fuel consumption since it fuels the chassis for movement between the production stations and is also used to operate the paint ovens. Alongside this, the transportation of the chassis up to the factory door is carried out for the most part by sea and land transport and is calculated as part of Merkavim's Scope 3 (Supply Chain Emissions).

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The Environmental Impact of the Bus: Means of Public Transportation

Inviting, Accessible and Environmental Public Transportation

Merkavim emphasizes equality and accessibility, to create a safe and inviting travel experience for every passenger, and to encourage the community to use public transportation.

Free Roads - Safety and Productivity

According to the Israeli CBS data, the average number of passengers per trip in a private car in Israel is one and a half passengers, while Merkavim's city bus can accommodate up to 82 passengers. The State of Israel has one of the most congested road systems in the world thus reducing road congestion has many benefits, such as increasing road safety and streamlining traffic. Clearly, free roads reduce commuting time and contribute to labor productivity, streamline commodity delivery systems, etc.

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*Contents of Passengers on Merkavim's City Bus

Buses are the main means of making workplaces, public services and leisure sites accessible to the general population, with an emphasis on low-income, children, the elderly, residents of the periphery and residents who do not have a vehicle for everyday use. Having an inviting and accessible public transportation system makes it possible to reduce household expenditures on transportation while narrowing social gaps.

All buses produced in the vehicles comply with the Euro VI Standard for the control of emissions of pollutants from a motor vehicle, designed to help reduce environmental pollution during driving. The buses are designed to create the best possible travel experience for the driver and passengers, so that riding in them will be a suitable replacement for the private car.

Safety First

Safety of Employees and Passengers is a Leading Value at Merkavim

Passenger Safety

The company works to continuously improve safety mechanisms, performs ongoing checks during work and conducts assessments to identify, prevent and reduce failures or hazards.

Beyond the required compliance of the Ministry of Transport, the buses comply with the European RDW Standard, in order to ensure that the bus meets the most binding safety standards. For example, new models coming out of the production line undergo rollover and safety tests at the Israeli Technion that ensure that the buses are adapted to rollover standards, as part of the tests performed on the buses. Accordingly, in 2022 no cases of deviation or non-compliance with regulations were identified.

The bus design includes reference to maximum durability vis-à-vis weight, load and structural strength considerations. Another emphasis in bus planning is uninterrupted travel – the driver cabs include a partition designed to allow the driver to focus on the ride, and the driver cab doors include spring hinges for autonomous closing. In addition to investing in bus structure and driver comfort, the company invests resources in developing risk mitigation measures. For example, in private buses intended for transporting children, it is possible to install a "Don't Forget Me" add-on according to the customer's request, to eradicate the phenomenon of forgetting children in vehicles.

Health and Safety

Employee safety is a central consideration in every decision taken in the factory. As part of the efforts to increase employee safety, the Safety Committee appointed safety inspectors and safety trustees in the factory and defined safety policy goals. The company's Safety Committee carried out comprehensive analysis work in 2021-2022 and identified the risks in all the factory's workstations. As part of this analysis work, the committee set safety targets which are presented to the company's management and monitored periodically. In addition, the committee investigates all safety incidents, with the investigation examining the root causes of the accident. The identified factors are compiled by the committee into recommendations once a month, where the recommendations are discussed, how they will

be implemented and their actual assimilation in the risk management reports and work procedures. The recommendations of the safety committee are fully carried out and monitored.

The company performs regular inspections of safety equipment, preventive maintenance of routine and emergency systems, as well as conducts internal safety inspections, frequent inspections of risk and prevention points. In addition, the employees meet with an occupational doctor who checks their health status in accordance with the law and the findings of the monitoring.

Personal protective measures are required for the use of each workstation according to its nature, certifications and training of employees on safety issues are carried out each year, and a monthly safety audit is carried out by quality inspectors. In addition, there is a process of involving employees and managers, in the safety committees held 8 times a year. These safety committees receive feedback from employees and managers, as well as emphasis on safety issues. In this way, for example, in the manual production and welding process, there is a care for maximum protection of the workers, using a forced air mask, and of course safety shoes, face masks according to the nature of the work, gloves, earplugs and all necessary equipment.

To our delight, the effort in the areas of safety is bearing fruit, and there were no unusual incidents of illness or serious injuries during the reporting period. In addition, in 2022 there were 18 occupational accidents involving the workers and prisoners, with the accident rate being 3.24 per 200,000 working hours. The number of accidents in 2022 represents a significant reduction of 33% compared to 2021.

Merkavim - Quality, Safety and Environment Policy

EHS Management - Environment, Quality, Health and Safety in the Factory

Management of environmental, safety and health issues are a top priority at Merkavim, and therefore advanced policies and practices in these fields are implemented. The work site has a team responsible for safety, quality and the environment, with all managers and employees undergoing annual training and ongoing conversations regarding the updated quality policy, safety and the environment. The company's policy is displayed on the website and on the message boards and is also sent to suppliers annually.

Every year since 2014 the company has received ISO 14001 environmental standard and ISO 45001 standard for health and safety certification in every year. The factory is required to comply with all work safety regulations and environmental regulations and ensure compliance with all requirements for a business license and toxins permit according to the guidelines of the Ministry of Environmental Protection. In addition, the factory annually performs an examination of compliance with the requirements of any law in the field of environment and safety.

The company conducts management surveys with reference to all risks and opportunities in the fields of environment, health and safety, and examines environmental aspects of internal activity and with all stakeholders. The results are analyzed and lead to lessons learned in favor of continuous improvement in the leadership of the company's management.

Alongside safety and environmental considerations, Merkavim does not compromise on the quality of the buses. The company invests resources to reduce the environmental footprint, without compromising the safety of the bus and its durability over time, for the benefit of public transportation users. During production, each product undergoes frequent quality controls, in accordance with the company's quality policy.

Society and Community

The Source of Success - Our Employees

Respectful Work Environment

The company maintains a pleasant and respectful work environment and works to build a sense of belonging and employment stability, believing that the employees are the source of the company's success. The employees are paid at least an increased minimum wage, including the possibility of social benefits in providing loans and advances to employees, subsidizing summer camps for the employees' children, and support for life events. The company of course supports employees who are required to care for a sick family member, by flexibility in working hours, increasing eligibility for sick days and additional adjustments according to their needs.

Our Employees

Total Employees by Gender

	Men	Women	Total
2022	693	42	735
2023	667	48	715

Full-Time Employees by Gender

	Men	Women	Total
2022	665	39	704
2023	670	45	705

Part-Time Employees by Gender

	Men	Women	Total
2022	28	3	31
2023	7	3	10

New Employees by Gender

	Men	Women	Total
2022	129	8	137
2023	188	15	203

Employee Turnover by Gender

	Men	Women	Total
2022	176	9	185
2023	184	9	193

Percentage of Employees by Age for 2022

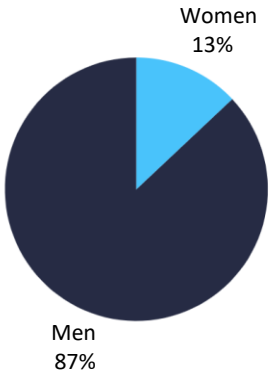
Age Group	% of Employees in the Company
Up to 29	6
30-34	8
35-44	18
45-54	23
55-66	37
67-74	8
75+	0.4
Total	100

Percentage of Employees by Gender for 2022

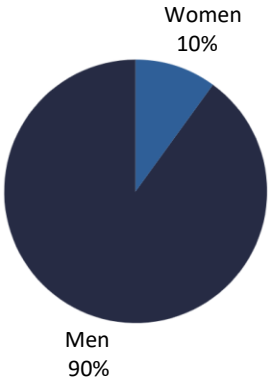
Age Group	Men %	Women %
Up to 29	94	6
30-34	95	5
35-44	90	10
45-54	91	9
55-66	95	5
67-74	98	2
75+	100	

The company strives to continue to support a variety of genders. The percentage of non-managerial employees is 35%, the percentage of women at senior management levels is 13% and at interim management levels is 10%. One of the goals for the coming years is to increase the number of women at management levels.

Senior Management Class



Intermediate Management Class



Training and Excellence

In the field of production and development, there is a challenge in recruiting and retaining professional employees. The company works to build a professional and inviting work environment that will give employees optimal conditions to exhaust their skills. Every new employee undergoes an onboarding process in which the company fully and clearly details and in the employee's language their rights, and they are paired with a supervising employee who mentors them in the onboarding process.

In 2023, the factory moved to a new production method that allows each employee to specialize in their field over time. Thus, for example, resources are invested in training welders who will deepen their skills in a fixed position and contribute to the efficiency of the process. It is important for the company to help each employee realize their potential, and accordingly, cross-sectional conversations are held with the personal manager and coordinators on behalf of the human resources department.

Every month, an outstanding "Employee of the Month" is selected at the factory, which is displayed on the message boards. The outstanding person receives a gift and appreciation award in person on behalf of the Operations Manager. At the end of the year, a ceremony was held to announce outstanding employees in each of the twenty departments, entitling them to an evaluation award and a cash prize.

Leisure and Enrichment

Since the satisfaction and quality of life of our employees are important to the company, Merkavim offers a variety of enrichment programs.

As part of the enrichment activities, employees were offered a smoking cessation workshop during 2022, which received a relatively low response. The company will continue to offer rehab workshops in the coming years and will encourage employee enrollment. Also, many of the employees do not speak Hebrew, so in 2022 a Hebrew course was offered. The course took place several times a week, after hours, and 40 employees participated.

Every year, all company employees and their families are invited to a joint annual factory vacation, which is rife with leisure and bonding activities. Additional bonding activities are held in accordance with the holidays – so, for example, in 2022, a festive screening of the World Cup final was held at the factory on a huge screen of 16 meters.

World Cup screening, 2022

Our Workers' Committee - Full Partnership

Merkavim has been in existence for years as an active workers' committee, which works in fruitful cooperation with the factory's management. The company, in collaboration with the employees, chose to preserve the collective employment agreement that benefits the

employees and not to switch to an individual agreement. The committee reflects the needs of employees, provides a mirror image and allows management to create a tailored response. The chairman of the committee is an active partner in many of the decisions regarding the company's employees, takes part in employee hearings and is a central figure in the employee community.

Diversity and Inclusion

Merkavim believes that diversity in the workforce is the key to living together and is committed to building a multicultural work environment.

In 2022, the company employed 150 Arab and Druze employees, representing about 20% of all our employees. Many workers in the production halls are of Ethiopian or Russian origin. To make it easier for all employees, actions were carried out to integrate Russian and Arabic speakers into the company's headquarters as well. The company lists all the dates of the communities and religions among its employees and considers the dates and dates of shift placement, scheduling work hours, prayer times and meals.

Employees are part of the company's story even after retirement. The company offers all employees retirement preparation plans. At the same time, as part of the retention of professional employees, Merkavim is happy to extend the employment period of professionals and invites all employees to continue their employment even after retirement age. About 8% of the company's employees are over the age of 67.

For the Community, for All of Us

Driving Experience – Focus Groups vs. Drivers

The attempt to evolve, move forward, and deliver a positive travel experience is largely based on human engineering. The company aims for the drivers, who spend many hours in the cab, to be able to drive comfortably and for the passengers to enjoy the travel experience. In 2022, we operated a focus group in cooperation with a committee of drivers for public transportation, whose conclusions were implemented in the planning of the buses. For example, the focus group showed that drivers on city buses feel the cab is too crowded. As a result, to improve the driving experience and as part of the company's listening policy, we have increased the cab space and integrated doors that open outward.

Rehabilitation of Prisoners at Merkavim – Another Opportunity for Each and Every One

Merkavim believes that everyone deserves a second chance. Rehabilitation programs help prisoners integrate into society after being released from prison and reduce the chances of prisoners returning to criminal behavior. As a result, Merkavim began a prisoner rehabilitation project in cooperation with the Israel Prison Authority, through which the company employs prisoners as part of its production line. The company sees a mission in employing prisoners during incarceration, during the early release period and after release from prison. Since a large part of the prisoners lack any work experience, the rehabilitation process includes education for self-discipline and commitment alongside professional training. Merkavim produces training for welders who are later employed by the company. The process, until the release of the prisoners and their absorption into Merkavim, is accompanied by the employment officers of the prisons.

The company operates two centers of activity in prisons. One is in the Hasharon Prison - an extension of the factory, where prisoners are employed in welding and cutting tins. The branch managed by a foreman and a deputy manager, both employees of Merkavim. The second center of activity is an extension in Hermon Prison – the extension is managed by the prisoners independently and supervised by representatives of Merkavim. On this branch line, the prisoners produce electric braids, which are numbered by a numbering machine on behalf of Merkavim. Transport of raw materials and ready inventory are conducted by Merkavim employees.

Another group of prisoners, carefully selected by the Internal Affairs Committee for work in prisons, comes to work in the factory every day. The prisoners arrive on shuttles operated by the Merkavim factory, along with an escort and authorized driver on behalf of the factory. The prisoners integrate into the work alongside the factory workers, and sometimes personal ties and friendships are formed.

When a hearing is held on the matter of a prisoner in the parole board, weight is given to the question of whether a rehabilitation plan was prepared for them for the early release period. Merkavim is happy to assist the prisoners who work with it in their early release process, and usually offers them work in the factory ranks.

A Bus for Every Passenger - Merkavim Innovation

A bus can be much more than a means of transportation - and the solutions are unimaginably numerous. Merkavim works with the community, designing and manufacturing solutions on wheels for various problems. The company adapts the buses to different target audiences to improve the travel experience and does not hesitate to get outside the box when a unique need arises. Some of the solutions include the development of an accessible bus for people with disabilities, an armored bus for travel in risk areas, an ambulance bus and more.

Accessible Bus with Lift

Developed and adapted for accessible intercity public transportation. The bus is available in Israel and exported to foreign countries.

Armored Bus - Mars Defender

The ”Mars Defender” provides protection from light firearms, hand grenades, and IEDs. It weighs 25,500 kg, mounted on a B11R chassis with three axles and rear axle steering, thus managing to carry the self-weight of the bus, 53 passengers and a driver. The chassis is made of stainless steel and all parts of the tin, windshields and fiberglass are glued to the chassis of the body - a unique method that provides optimal opacity and strength.

Ambulance Bus

The "Ambulance" enables the mass evacuation of a population that has been injured or fallen ill in a mass event that requires the rapid evacuation of many casualties. The ambulance was built on an urban bus chassis, with the internal layout divided into three separate areas: the front of the bus, the center of the bus and the back of the bus.

In the ambulance center "treatment room" with two treatment beds. The treatment room is equipped with all the equipment required to treat severe injuries, including monitoring ability, oxygen system, syringe pumps, ability to cool and heat liquids and more. In the back of the bus there are 11 particularly comfortable seats for transporting patients or casualties in light and medium condition. The area is equipped with a personal oxygen system and medical equipment for the provision of primary care.

How to Build a Bus?

Merkavim receives many requests from groups and individuals who want to see with their own eyes "how to build a bus". Those interested can be curious children, nonprofits that employ people with disabilities, or professional schools. Merkavim encourages open communication, and happily opens the factory gates to display the production processes.

Read Everywhere

In recent years, Merkavim has been operating a mobile library bus. An urban bus that has been converted into a mobile library, to provide an available and accessible solution for children and adolescents who do not have a permanent structure in their area for the library. In addition to nonfiction and fiction books, textbooks and laptops can also be found in the library.

Ambulance Rehabilitation - Yad Vashem

At the end of World War II, prisoners were released and transferred from the camps in Swedish Red Cross ambulances. The ambulances entered Germany in March and April 1945 and carried out about 27,000 prisoners, including several thousand Jews, most of them women, who were transferred from Germany to Sweden. Merkavim volunteered to restore one of the original 36 ambulances, while preserving the entirety of its original components. The restored ambulance is on display at the Yad Vashem Museum.

The ambulance before restoration

The ambulance after restoration

Corporate Governance

Ethics in the Society

The company adheres to all the regulations and laws required by law, as well as to ethical and professional conduct in all areas of activity.

Merkavim is committed to the following rules:

- Act according to the values of preserving human dignity and human rights among employees, customers, suppliers and business partners
- Act in an honest, fair and professional manner, based on trust and mutual respect with customers, suppliers and business partners
- Avoid any conflict of interest and any improper activity such as receiving or providing gifts or benefits
- Act transparently and based on relevant and professional considerations only
- Respect our employees and partners, and protect their safety and privacy

Preventing Harassment

Merkavim works to ensure a safe and free work environment from harassment in general, and sexual harassment in particular. Accordingly, each employee undergoes an annual training on the subject and the drafting of regulations for the prevention and treatment of sexual harassment in the organization, which is displayed on the message boards. Contact details for the Sexual Harassment Officer, a senior management member, are available and accessible to all employees of the company.

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The organization reported in the spirit of the 2022 GRI Reporting Standards.