



# 1. Combating Climate Change

We commit and maintain our practices and objectives in our Migros Better Future Plan about combating climate change, transition to a low carbon economy and sustainability within the framework of international norms, national legal requirements, UN targets for Sustainable Development and the principles of the Consumer Goods Forum (CGF). In this respect, we determine our environmental targets to reduce our carbon emissions in line with our business strategy driven

by global initiatives and national targets, in particular the Paris Agreement and we manage our operations in this context in the long term. With our highest level of development policy, we review our targets every year. To combat climate change, we adopt compelling targets that we can update in the long term in line with science-based targets methodology. We report our annual performance and our plan to combat climate change to the CDP (Carbon Disclosure Project) every year.



## Risks and Opportunities

In order to determine the risks and opportunities associated with climate change, a team of our departments, which are affiliated with the Sustainability Committee, performs annual assessments. The risks of changes to legislation and the physical climate parameters and other climate-related changes (e.g. changes in consumer behavior and company reputation) are identified in annual evaluations. These risks coincide with the issues covered by global initiatives such as **TCFD (Task Force for Climate Related Financial Disclosures)** and are reported to our Senior Management in order to develop solutions by following the possible and current financial results. Climate performance related targets such as reducing energy consumption and refrigerant leaks has a direct impact on the annual performance premiums, with 10-20 percent effect at the HR Balanced Scorecards of Chief Construction Officer (CCO) and Group Managers in charge of Energy Management, whose activities have the greatest possible impact on climate change.

The impact of retail operations on climate change is primarily from the use of electricity and refrigerant gas leaks. Lighting, air conditioning and cooling activities in stores and distribution centers cause greenhouse gas emissions. The biggest source of indirect impacts is logistics of products.

The main physical risk faced by our company is changing rain patterns. In this context, we foresee that the impact of snow and floods will increase, and that this situation could lead to a loss of approximately 200 thousand TL over the next five years. As a precaution, we insure our stores against possible floods and other natural disasters.

Within the scope of Environmental Management and practices for combating climate change, in 2018, we invested 8.14 million TL in total for development of natural cooling systems, energy efficiency and system improvement studies, waste management, sustainability consultancy, certification under ISO 14001, life cycle assessment of our private label products and verification of our annual carbon emissions.

We are not just focused on our stores to combat climate change; we also aim to reduce the negative impacts of our entire value chain, from our suppliers to our customers, but also to contribute positively in the long term. Agricultural resource utilization and customer-sourced emissions are the issues that stand out in our value chain. We will intensify our efforts on these two issues in our future model of value creation and positive change for the world.



### What is the Paris Agreement and TCFD?

The Paris Agreement, adopted by the United Nations Framework Convention on Climate Change (UNFCCC) in 2015, which constitutes the framework for combating climate change after 2020, underlines the need to limit global temperature rise. In accordance with the Paris Agreement, our country has committed to reducing greenhouse gas emissions by 21 percent from a business-as-usual scenario until 2030 in its Intended Nationally Determined Contribution statement. The maximum increase limit of 2°C by the end of the century, when the Paris treaty was first signed, was reduced to below 1.5°C indicating that the former target is not sufficient by the 1.5°C Global Warming Special Report published by the Intergovernmental Panel on climate change (IPCC) in 2018.

The economic impact of the Paris Agreement has also been felt. In this respect, the G20 Financial Stability Board (FSB) created the Task Force on Climate-Related Financial Disclosures (TCFD). TCFD's recommendations include a transparent disclosure of how economic impactors will be affected by climate change, how they manage these risks and their impact on climate change. Sustainability reporting processes such as the Carbon Disclosure Project (CDP) and the Global Reporting Initiative (GRI) have been expanded to integrate TCFD recommendations.

## 1.1. Our Carbon Footprint

We are aware that effective carbon footprint management is one of the most important conditions for us to maintain our value chain in a responsible and respectful way to humanity and nature. Within the scope of our Migros Better Future Plan, the most important sustainability issues that we have addressed at the Top Management level are our activities to combat climate change and carbon management. In this direction, we determine our short-, medium- and long-term actions and implement them in line with the strategy of our company.

We do not have a production facility that causes air pollutants such as dust, heavy metals, combustion gases, volatile organic compounds, fluorine and chlorine. Therefore, we focus on reducing carbon emissions. Although greenhouse gas reporting is not mandatory in the Turkish retail sector, we have been measuring our corporate greenhouse gas emissions since 2014 to monitor and reduce our indirect and direct impacts on climate change.

We determine the factors that cause emissions of greenhouse

gases from our stores, distribution centers, regional directorates, regional produce warehouses, MİGET meat processing plant and breeding farm that started operations in 2018. 50 percent of our carbon emissions are from electricity consumption and 49 percent are from cooling. We monitor, calculate and report our performance in terms of "daily carbon equivalent emissions per square meters of sales area (kgCO<sub>2</sub>e/m<sup>2</sup>)".

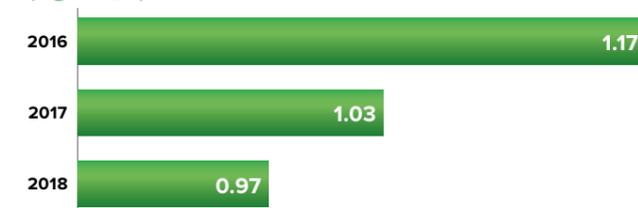
Accordingly, in 2018, we aimed to reduce our stores' daily "Scope 1 and Scope 2" carbon dioxide emissions per square meter of our sales area by 1.5 percent compared to 2017. We exceeded our target and achieved a 6.1 percent reduction in 2018. We maintain our 1.5 percent reduction target for 2019.

In addition, we have increased our goal of reducing daily carbon emissions per square meter by 25 percent until 2023 compared to 2015, which is the base year of our medium / long-term goal. Until 2018, we achieved a reduction of 19.5 percent in line with this target.

### Corporate Greenhouse Gas Emissions (GHG) from Turkey Operations by Year

	2016	2017	2018
Scope 1 Emissions (mt CO <sub>2</sub> e)	247,915	223,566	225,387
Scope 2 Emissions* (mt CO <sub>2</sub> e)	188,230	190,149	221,439
Scope 3 Emissions** (mt CO <sub>2</sub> e)	71,178	76,546	84,602
Total Greenhouse Gas Emissions* (mt CO <sub>2</sub> e)	507,323	490,261	531,428

### Carbon Emissions per m<sup>2</sup> of Daily Sales Area\* (kgCO<sub>2</sub>e)



Our Scope 1, Scope 2 and Scope 3 GHG emissions for 2018 have been verified and documented by BSI (British Standards Institution) as a result of the controls performed on the basis of **ISO 14064-3 standard and GHG Protocol**. You can view the related document in the Appendix section.

\*Previous year emissions were recalculated based on the current electricity emission factor.

\*\* Scope 3 emissions include flights, waste disposal, transportation, Online Grocery Delivery Vehicles, Personnel Services, Customer Services and emissions from external energy consumption.

### Carbon Emission Reduction Target per Square Meter Sales Area

Base Year	2023 Target	2018 Milestone Percent Complete (%)
2015	25%	78%

This year, with a new study, we realized the life cycle assessment (LCA) of our food, non-food and specialist butcher products, which constitute 50 percent of the trade of our private label products, adhering to the ISO 14040 standard. Within the scope of the LCA, carbon emissions of our 127 different PL products sold in our stores in 2018 were calculated as 176,906.01 tCO<sub>2</sub>e.

## Eco-friendly Cooling Systems

In our retail operations, we focus on the use of natural refrigerants, more efficient and next generation systems in cooling systems, which are among the important topics leading to greenhouse gas emissions.

In the cooling systems of our MİGET meat processing plant, we use ammonia as natural refrigerant instead of HFCs. In 2015, we started our first activities for the use of natural refrigerated systems in our Taşdelen Migros M store and tried cooling with glycol instead of HFC-R404a gas.

In 2016, we trialed cooling of the cooling cabinets by circulating cold water in Çekmeköy Koru store and used glycol-propane, which is a natural refrigerant, to cool the circulating water. We have patented the system which has a useful invention certificate. In our Şile Doğancılı store, we reduced the amount of refrigerant gases we use by 60 percent by retrofitting the traditional cooling system and transformed into the water circulation system. In 2017, we created a test room to measure the electrical consumption of existing and new cooling systems and to carry out system development activities. As a result of these activities, we reached an acceptable level of electricity consumption and installed water-cooling systems in our İzmir Narlıdere 2. İnönü store and Ankara Gölbaşı Distribution Center in 2018. With these two installations, the number of glycol-cooled tanks increased to 2 and the number of stores increased to 4.

We will expand our Migros patented natural refrigerated cooling system to 20 stores.

With these two installations in 2018, we achieved 70 percent savings by using 900 kg refrigerant gases instead of 3,100 kg. In 2019, we plan to set the system up in three additional stores. In 2023, we plan to increase the number of our stores operating with this system to 20.

Also, in 2018, we undertook a comprehensive renovation of cooling installations and systems at our MİGET fresh meat production facility and our Adana Ceyhan store, prevented refrigerant gas leakages by making group exchanges at our Şekerpinar Distribution Center, Edirne Uzunköprü and İstanbul Çiçekçi stores. Doing so allowed us to eliminate 1,500 kg of refrigerant gas leakage risk (587.8 tCO<sub>2</sub>e). During the transformation of the 120 Kipa stores that joined our Migros structure in 2018, we disabled the large and inefficient frozen product center systems according on a needs basis and replaced with plugin cabinets. Thus, we prevented the risk of 1,000 kg refrigerant gas leaks (311.8 tCO<sub>2</sub>e) occurring in the old cooling system and groups.



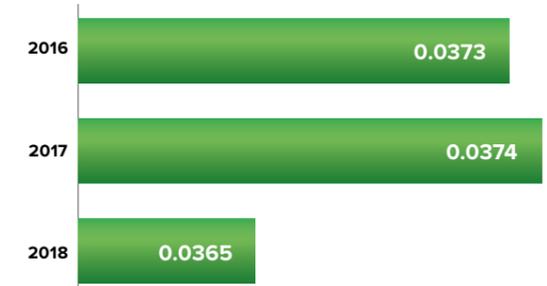
## Our Sustainable Distribution Systems

We carry out efficiency activities in order to save on our energy consumption from distribution and logistics and to reduce our greenhouse gas emissions from logistics. Each year, we measure the distance traveled between our distribution centers and our stores and make route optimizations and open our new distribution centers according to the results of these analyses. Within the framework of our central distribution strategy, **we transport 80 percent of our products to the stores with fully laden trucks. We reduce the truck traffic by 30 times** by directing the products to be sold in our stores from our own distribution centers.

In 2018, we established a more sustainable and advantageous distribution network with the changes we made to our distribution centers. Our Bursa Distribution Center opened in 2018 started delivery to 170 stores in Marmara, Central Anatolia and Aegean regions, providing substantial mileage advantage. In 2018, we incorporated the Torbalı Distribution Center, which we took over from Kipa. We closed our Pınarbaşı Distribution Center and redirected its distribution network to the Torbalı Distribution Center. We expanded our Gölbaşı Distribution Center in Ankara, closed our Saray Distribution Center and started to ship to our surrounding stores through a single Distribution Center. We opened the Gölbaşı Meat Distribution Center in place of the Saray Meat Distribution Center. With the model we designed in Çorlu Distribution Center, which we launched in 2018, a small number of costly products from our suppliers are left to this intermediate center and transported to nearby stores.

In order to reduce our environmental impact with our distribution center shipments, we have the following target: "reducing our CO<sub>2</sub> emissions per transported unit". In 2018, we achieved a YoY 0.42 percent reduction against our 0.5 percent target. In 2019, we aim to achieve a 0.3 percent improvement compared to 2018 results. By 2023, we are aiming to reduce CO<sub>2</sub> emissions by 3 percent per unit of transport compared to 2016. The reduction in these operations will support the reduction in our total greenhouse gas emissions.

### CO<sub>2</sub> emissions per transported unit from Distribution Center shipments\* (kgCO<sub>2</sub>e)



\* Previous year emissions were recalculated based on current electricity emission factor.

Apart from our distribution center shipments, our other distribution system consists of our Migros Sanal Market (online grocery) shipments. In order to reduce our environmental impact, Migros Sanal Market fleet includes 17 electric vehicles. In addition, **we increased our number of electric bikes from 23 in 2017 to 31 in 2018**. Compared to 2018, we aim to increase our number of electric bicycles by 25 percent in 2019 and to double the number in 2023.



## 1.2. Our Energy Management

Our company's total electricity consumption in 2018 was 490,994 MWh. In 2019, we are targeting to reduce our electricity consumption by 1.5 percent per square meter sales area compared to 2018. There is no renewable energy production or consumption, and there was no heating, cooling and steam purchased nor energy sold during the reporting period.

In the medium- to long-term, **we aim to reduce our daily energy consumption per square meter of sales area by 2023 by 17 percent compared to 2013.** In 2018, we aimed to reduce our daily energy consumption by 1.5 percent compared to the previous year. However, the Kipa stores we acquired the previous year and the Makromarket and Uyum stores we took over in 2018 have been transformed into Migros stores throughout the year resulted in an increase to our total energy consumption. As the renewal of the technological equipment used in these stores has not been completed yet, our daily electricity consumption per square meter of sales area has increased by 0.4 percent compared to the previous year. However, comparing our performance since 2013, despite increasing number of stores, we achieved 10.4 percent of our long-term target by 2018.

### Energy Consumption by Source (MWh)

	2016	2017	2018
 Electricity	417,362	421,617	490,994
 Natural Gas	8,159	6,104	7,182
 Diesel	13,999	14,629	15,459
 Gasoline	21	55	43.6
<b>Total</b>	<b>439,541</b>	<b>442,405</b>	<b>513,679</b>

In 2019, we are targeting to **reduce our daily electricity consumption by 1.5 percent per square meter of sales area compared to 2018.**

### Reduction of Daily Electricity Consumption per Square Meter of Sales Area Target

Base Year	2023 Reduction Target	2018 Milestone Percent Complete (%)
2013	17%	61%

### Daily Electricity Consumption per Square Meter of Sales Area (kWh)



## Our Energy Saving Activities

We provide operational efficiency and combat climate change with our energy saving activities. In order to reduce our energy consumption and the resulting emissions, we prefer variable flow controlled and highly automated efficient systems in air conditioning and industrial cooling systems in all our newly opened and renewed stores.

**We measure our energy consumption on a daily, weekly and monthly basis** with our energy monitoring system, and take measures to reduce our energy consumption and resulting greenhouse gas emissions. In addition, we installed an automation system that centrally controls our cooling, air conditioning and lighting systems to monitor our energy

consumption. As our number of stores increases, we also expand our system. Over the years, our refrigeration, air conditioning and lighting processes have become more observable and remotely controlled.

We achieve maximum benefit from sunlight by using daylight lighting systems in our suitable stores. We prevent the formation of heat islands by choosing types of paint that provide thermal insulation and reflect the sun rays on our store roofs. We provide motion sensor lighting units in the storage facilities of our stores.

In 2018, as a pilot study, we renewed the old and inefficient lighting systems in our Zafer Plaza MM Migros store and achieved energy savings of 8 percent.



### Number of stores with Automation Systems

	2016	2017	2018
Cooling automation	1,317	1,586	1,756
Air conditioning automation	937	1,061	1,179
Lighting automation	706	856	993



## Our Green IT Implementations

Within the scope of our green IT approach, during the transformation of the 55 Uyum stores that we took over in 2018 to Migros stores, we replaced all the traditional desktop computers (250) with thin clients that consume less energy. We also purchased 300 thin clients in our newly opened stores. **Thanks to these devices, which achieved an average annual energy saving of 80 percent**, we saved 200 MW in 2018. We have recycled 65 tons of electronic devices that were out of use.

We achieved 80 percent energy savings by replacing 80 percent of our traditional server infrastructure with next-generation hyper-integrated servers, making it virtual and transferring it to cloud systems.

In 2018, we closed our backup data center and moved our data to our new Disaster Data Center, which we prepared according to our Green IT strategy. Thus, we plan to achieve an energy saving of over 500 MWh per year.

**We achieved 80 percent energy savings by virtualizing 80 percent of our physical server infrastructure and transferring to cloud systems.**

We benefit from video conferencing tools in interviews within the scope of our hiring activities we do throughout Turkey. Doing so, we reduce our indirect carbon emissions (Scope 3) eliminating the need for our HR personnel to travel. In 2018, we video conferenced for over 10,000 (around 12,000 hours) hours with potential hires. In the same direction, more than half of the intercity business meetings were held through video conferencing, enabling our employees to travel less frequently.

