

Milteks Carbon and Water Footprint Report of 2014

Hamburg, April 2015

www.milteks.com.tr



1. Executive Summary

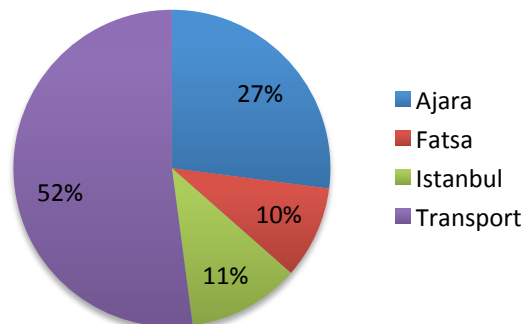
In 2014, Milteks Tekstil Sanayi ve Ticaret A.Ş. assigned Systain to evaluate the Carbon and Water Footprint of the company. The evaluation includes the locations of Milteks Istanbul, Milteks Ceseka-Fatsa, Milteks Ajara-Georgia and the overall transports of Milteks. The report provides updated carbon and water footprints.

Milteks has been conducting carbon footprint projects for the whole group companies, as indicated above, since the year 2009 and also conducted a water footprint project in the year of 2010-2011. The important energy related investments were conducted at the end of 2011 and the related footprint (carbon and water) calculations and comparisons between the years were done in 2012. It showed a successful progress within the three years from 2009 to 2011.

After giving two years break between 2012 and 2014, now again the company decided to measure its footprints for the year 2014 to see the changes for the last couple of years as well as the current impact of the footprint values.

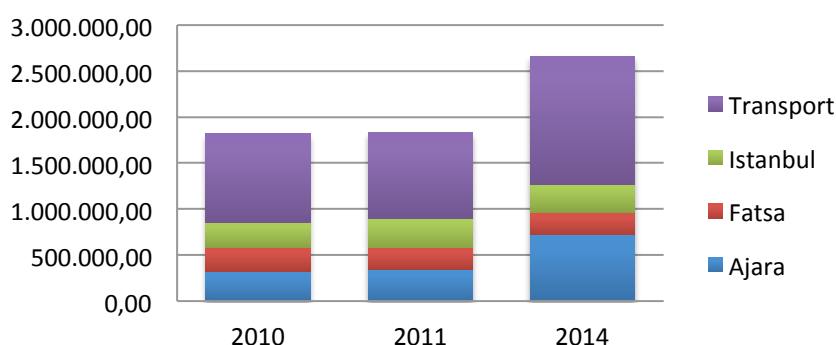
The total emission of all three factories and transports amounted to **2,663 tons of CO₂e-emissions in 2014**. Similar to the previous years, **transport** generated around **52 %** of the emissions. Without transport related consumptions, **27 % was emitted by Ajara, 10 % was emitted by Fatsa and 11 % was emitted by Istanbul** unit respectively through other energy related consumptions.

Share of total CO₂e emissions in 2014

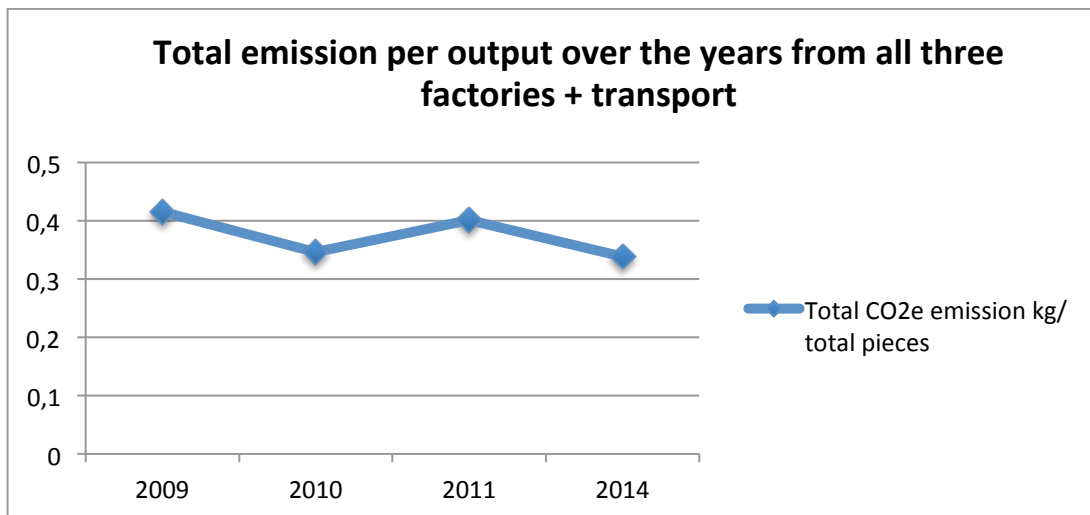


Comparing the total CO₂e-emissions of all factories including transport, the emissions **increased** from **1,827.4 tons** in **2011** to **2,669.4 tons** in **2014**, which is an increase of **46 %**.

Total CO₂ emmissions (kg CO₂-e) over the years



However, meanwhile the **production volume** has also **increased** by **72 %** from **2011 to 2014** and output-related emissions have been **decreased** from **0.40 kg to 0.34 kg**. This is a **decrease of 18 %** that the company was able to achieve through the conducted energy optimization programs.



2 Introduction

Warming of the climate system is unequivocal, and since the 1950s, many of the observed changes are unprecedented over decades to millennia. The atmosphere and ocean have warmed, the amounts of snow and ice have diminished, sea level has risen, and the concentrations of greenhouse gases have increased as it was indicated in the IPCC 5th report of 2013. The International Panel on Climate Change (IPCC), the nominated United Nations' body for research on this issue, has revealed in its studies that the increasing level of carbon emissions (CO₂) by human activity is the major driver of climate change.

Furthermore, the study states that the atmospheric concentrations of carbon dioxide, methane, and nitrous oxide have increased to levels unprecedented in the last 800,000 years. Carbon dioxide concentrations have increased by 40% since pre-industrial times, primarily from fossil fuel emissions and secondarily from net land use change emissions.

Over the last two decades, the Greenland and Antarctic ice sheets have been losing mass, glaciers have continued to shrink almost worldwide, and Arctic sea ice and Northern Hemisphere spring snow cover have continued to decrease in extent.

The rate of sea level rise since the mid-19th century has been larger than the mean rate during the previous two millennia. Over the period 1901 to 2010, global mean sea level rose by 19 m.

(Source; http://www.climatechange2013.org/images/report/WG1AR5_SPM_FINAL.pdf)

Various surveys conducted on climate change show that an increasing interest among consumers in addressing this problem exists. Therefore, action from retailers and brands regarding CO₂ reduction in the supply chain is expected. Furthermore, investors and

governments want companies to act in a more sustainable way. Therefore, it is necessary to increase transparency with respect to carbon emissions in the operations and supply chains.

It is important that innovative companies show their responsibility and take an active role in their leadership function. By taking energy saving actions, those producers also profit from reduced costs. Furthermore, they are at lower risk in terms of rising energy prices. They also become more attractive to conscious customers, who are increasingly demanding eco-friendly products.

In Terms of Water Footprint, fresh water is vital to life, and as the world's population grows, so does our use of it. Globally, more water is being used in agriculture, manufacturing (huge amount of fresh water is being used in the textile industry) and in daily life (drinking and bathing). This increase is even faster in the developing countries where food is grown and goods are manufactured and water is already in short supply.

By the year 2030, experts predict that global demand for water will outreach supply by 40 % percent. Impacts from climate change may increase the likelihood of changes to the water cycle, leading to prolonged periods of drought (and, conversely, more extreme rainfall). Reduced water supplies could add to water insecurity in all countries.

Water footprints help individuals, businesses and countries because they reveal water use patterns, from the sectorial and individual level. They shed a light on the water used in all the processes involved when manufacturing and producing our goods and services. A water footprint also accounts for the amount of water contaminated during manufacturing and production because that water is made unusable and is taken out of the system.

3 Objectives of the Report and the Project

In 2009, 2010 and 2011, Milteks Tekstil Sanayi ve Ticaret A.Ş. assigned Systain to evaluate the Carbon footprint of the company. The evaluation included the locations of Milteks – Istanbul, Milteks Ceseka-Fatsa, Milteks Ajara-Georgia and the overall transports of Milteks. Project data and related results were included in the sustainability reports of 2009 and 2011. Following in 2014, the data were updated and results were compared with the indicated previous years data. The water footprint was assessed first time in 2010-2011 period and continued also in 2014.

4 Scope, Data and Methodology

The Greenhouse Gas Protocol (GHG-Protocol) is one of the most established standards for accounting and quantifying the carbon emissions of companies. It is therefore used to calculate the Carbon Footprint in this report. The GHG-Protocol was developed by the World Resources Institute (WRI) and the World Business Council for Sustainable Development (WBCSD) and is based on the ISO 14040/44 norms.

The GHG-Protocol categorises Scope 1, 2 and 3 emissions. Scope 1 includes all direct emissions at the site of the company (e.g. boiler, generator) and cars. Scope 2 emissions contain indirect greenhouse gas emissions from consumption of purchased electricity, heat or steam. This Carbon Footprint evaluation covers all Scope 1 and Scope 2 emissions of Milteks.

To include not only carbon emissions (CO₂) but also all relevant greenhouse gas emissions like methane, the unit of the carbon footprint is given in kilogram / tons CO₂ equivalents (CO₂e).

The evaluation in this report covers the year 2014 (12 months; January to December 2014). For this period, the absolute carbon footprint, the output-related carbon footprint and the absolute and output-related water footprint have been calculated for each of the factories in the following sections of this report.

For comparing those results with the ones from previous evaluation period, consumption data from January to September 2011 were also evaluated. The data were adjusted to the 12 month-period of a calendar year from January to December 2011 by having quarterly assumption and also comparing these with the previous months consumptions data. (In 2011 the collected data belong to the months from January to September; the last three months data of the year were calculated through estimation by comparison method.)

5 Carbon Footprint

5.1 Data Collection and Quality of Data

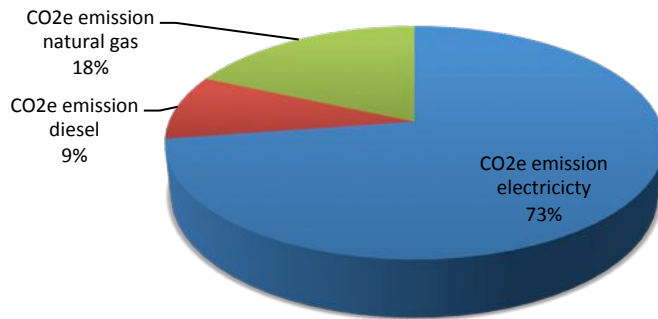
Similar to the report of 2010–2011, the relevant data of all consumed fuels, energy sources and electricity as well as production and water data were collected by questionnaires on a monthly basis. The data cover the year 2014. To ensure data quality, the data were checked on plausibility and consistency by Systain. In general, data provided by Milteks show a good data quality.

5.2. Absolute Carbon Footprint

a) Milteks Istanbul

In **2014**, the carbon footprint of Milteks Istanbul amounted 304.5 tons CO₂e. This amount of annual CO₂e-emissions of Milteks Istanbul is equal to the per capita emissions of 74 Turkish citizens, or 33 German citizens. The consumption of electricity contributes with 73 % CO₂e to the CO₂-Footprint, while emission from natural gas generates 18 % and diesel generates 9 % of the CO₂e- Footprint.

Share of CO₂e-emissions of Milteks Istanbul by energy source in 2014



Share of CO₂e-emissions of Milteks Istanbul in 2014

In 2011, Milteks Istanbul was taken several measures for reducing energy consumption, especially insulating the building, solar heating, eliminating oil consumption for boiler and switching to T5 tubes for optimizing lighting. Also, an audit on efficient lighting with meeting social requirements has been carried out.

Despite of 72 % increase in total production volume, the measurements resulted in 6 % decrease in total amount of CO₂e emission in 2014 compared to the year 2011. Since Milteks-Istanbul does not have any production steps, as being the company' headquarter, it processes and conduct the sampling and administration steps of the whole three units. Therefore it was not possible to calculate the output-related emission.

b) Milteks Ceseka-Fatsa

In **2014**, the aggregated absolute carbon footprint of Milteks Ceseka-Fatsa amounted to 245.6 tons CO₂e. This is equal to the average annual per capita emissions of 60 Turkish or 27 German citizens. The consumption of electricity contributes 100 % to the carbon footprint.

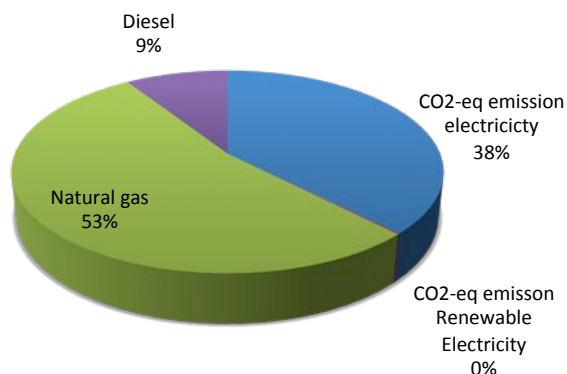
Compared to the year 2011, the emissions have increased by 6 %. However output-related emissions have decreased by 15 % (see graph below "Output-related CO₂e-emissions per piece (kg CO₂/piece) 2010-2014" for Ajara and Fatsa).

The energy saving programs runned by Ceseka-Fatsa in 2011 focused on setting-up a closed loop system for the heating (steam production) by using natural gas as energy source. Also in the following years, from 2012 to 2014, the energy efficiency efforts were continued. These include changing each broken lamp with energy efficient ones, removing or turning off some lights on the sewing band by insuring the required lighting system in terms of product quality and turning off or minimising the floor lighting during the workers break times.

c) Milteks Ajara - Georgia

In the year **2014** the aggregated absolute carbon footprint of Milteks Ajara amounted 722 tons CO₂e, whereby 38 % account for electricity, 9% for diesel (used for electricity generation), and 53 % for natural gas consumption. This is equivalent to the per capita emissions of 176 Turkish citizens or 79 German citizens.

CO₂e-emissions Milteks Ajara by source in 2014



CO₂e-emissions Milteks-Ajara in 2014

Compared to the year 2011 the emissions increased by 108 %. However, output-related emissions decreased by 29 % due to the increase in total production number. The production volume of Ajara has increased by 278 %. The company has indicated that this result has been achieved mainly by having basic type product orders.

The factory in Ajara has taken measures for reducing energy consumption and CO₂-emissions in the past years. The measures include advanced heating insulation for the building and also using natural gas instead of oil. Moreover, Milteks Ajara has set-up a water-turbine for producing electricity, which is sold to the local electricity provider.

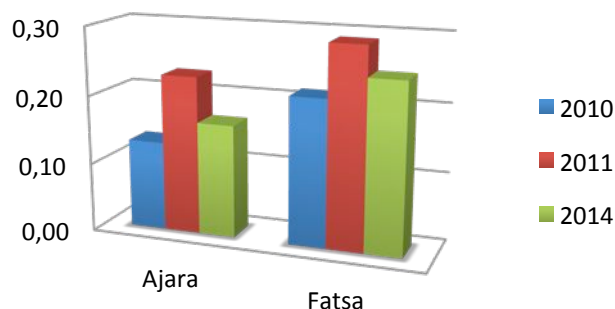
Carbon Emissions per piece of Fatsa and Ajara;

The following table provides the emission values per output as kg CO₂e / piece of Fatsa and Ajara from 2010 to 2014 and their visualization in a diagram. It shows that Milteks Ceseka-Fatsa has had higher emissions per piece in the last 3 years.

Total emission per output (kg CO₂-e/piece)

	Ajara	Fatsa
2010	0.13	0.21
2011	0.23	0.29
2014	0.16	0.25

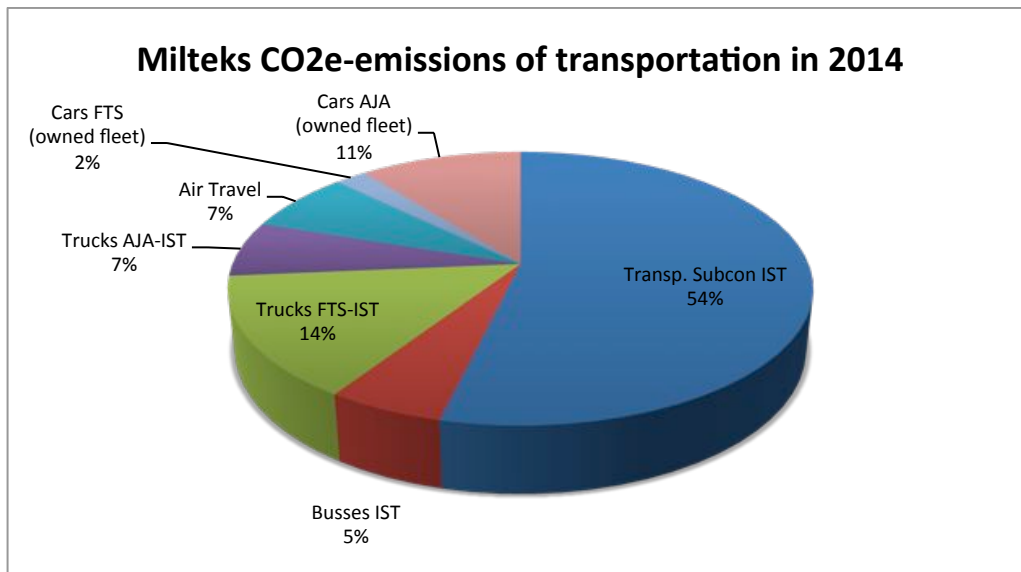
CO₂e-emissions per piece (kg CO₂/piece) 2010-2014



Comparison CO₂e-emissions of Ajara and Fatsa per piece between 2010 and 2014

e) Transportation and Business travel

The transport emissions of Milteks include transports of goods by own cars or by subcontractors as well as the business travel accumulated to an amount of 1,390.8 tons CO₂e in 2014. Most of the emissions (54 %) are related to subcontracted transports operated from Istanbul. The remaining amount (46 %) belongs to Milteks owned fleets and air travel by 46 %. In the graph below, the emission percentages are shown in detail.

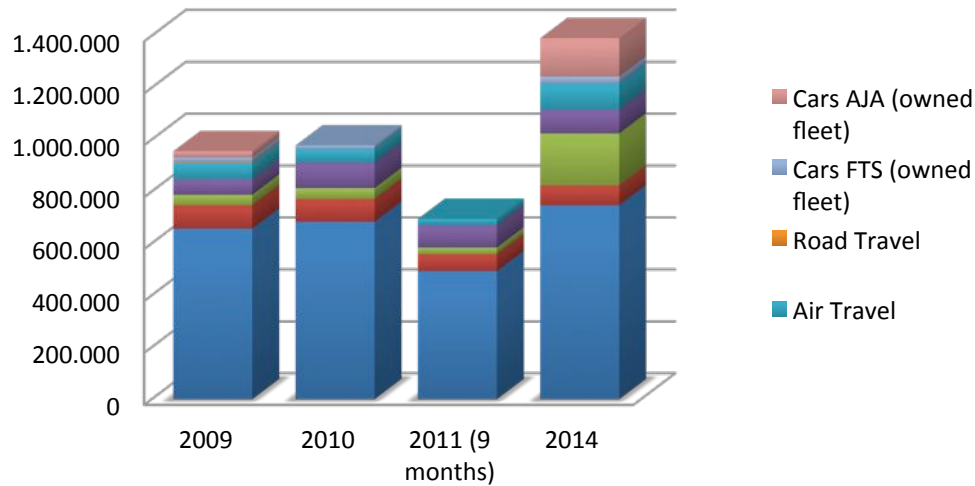


Milteks CO₂e-emissions of transportation in 2014

Comparing the transportation data of 2014 with the previous years, there is seen an intensive rise by 42 % compared to the year 2010. (In 2011 only the first 9 months of transport data were disclosed, however in direct ratio they are in line with the year 2010. In 2010 the emissions amounted 978 tons which is in direct ratio with the 12 month emissions of 2011 corresponding to 926 tons CO₂e.)

On the other hand, since the Milteks production volume has increased by 72 %, the rise in the emission level of transportation is less than the rise in production volume. This result shows that the optimisation program that Milteks conducted in 2011 for logistic operations (in terms of bundling transports between the factories) has had a positive effect on the energy consumption and the emission level.

Transport CO₂-emissions by mode of transportation (kg CO₂e)

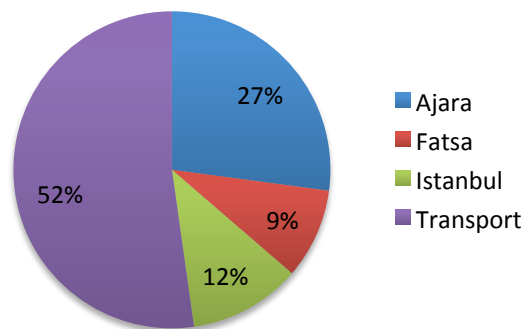


Comparison CO₂e-emissions from transports

f) Total Emissions

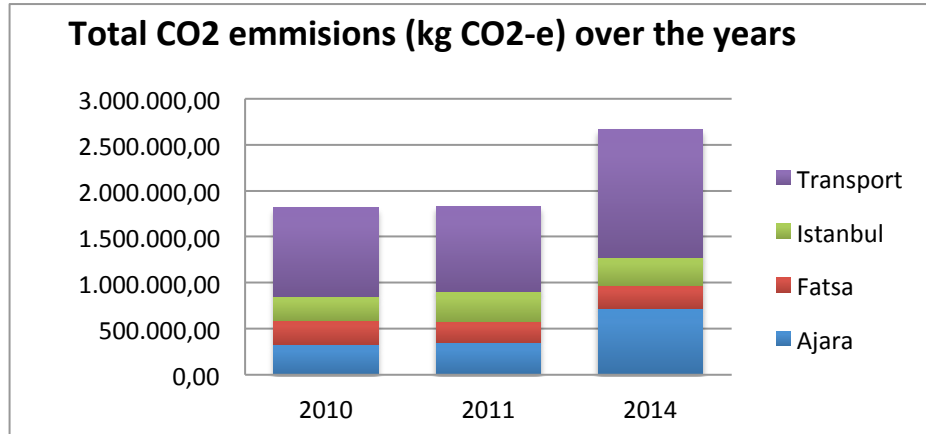
The total emission of all three factories and transports amount to 2,663 tons of CO₂e-emissions in 2014. Similar to the previous years, transport generates around 52 % of the emissions. Without transport related consumptions, 27 % was emitted by Ajara, 10 % was emitted by Fatsa and 11 % was emitted by İstanbul unit respectively through other energy related consumptions.

Share of total CO₂e emissions in 2014



Share of total CO₂e-emissions in 2014

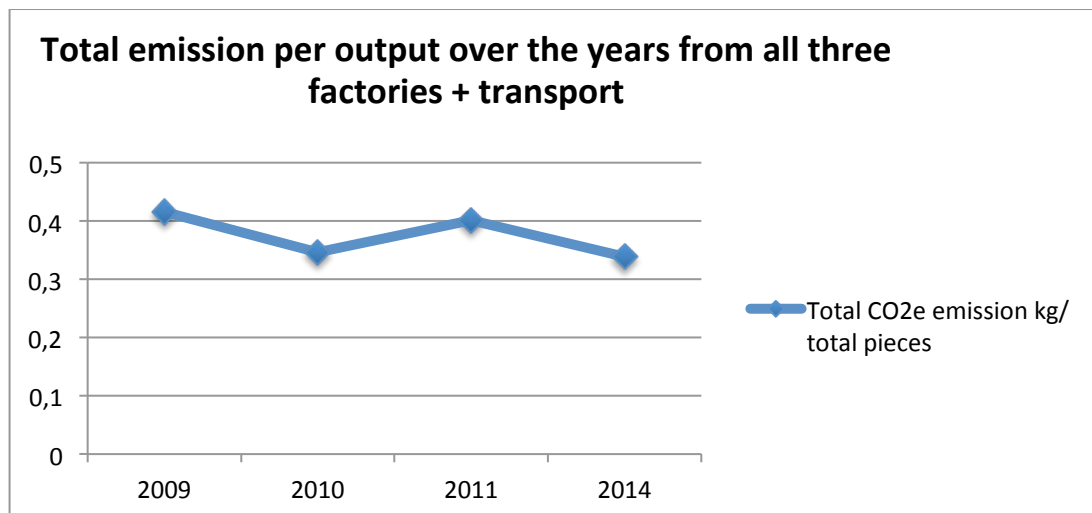
Comparing the total CO₂e-emissions of all factories including transport, the emissions increased from 1,827.4 tons in 2010 to 2,669.4 tons in 2014. This is an increase of 46 %.



Comparison total CO₂e-emissions between 2010 and 2014

However, meanwhile as the production volume has increased by 72 % from 2011 to 2014, the output-related emissions decreased from 0.40 kg to 0.34 kg. This is a decrease of 18 % that the company was able to achieve through the conducted energy optimization programs.

The data that belong to 2009 have not been included in the above chart due to some missing details in the data consistency within the different units. However the year is included in the output-related data comparison as below.



Comparison output-related CO₂e-emissions between 2010 and 2014

6 Water Footprint

Concerning environmental protection, water consumption is another major issue. For that reason, the so-called Water Footprint has been evaluated.

a) Milteks Istanbul

The water consumption of Milteks Istanbul amounted to 3,085 m³ in 2014, which corresponds to 4 % decrease compared to the year 2011.

As in the carbon footprint section, the output-related water footprint is not calculated for the Istanbul unit, due to being the headquarters of the firm Milteks. It is the managerial and administration unit of the whole company including the Ajara, Ceseka and other company operations.

b) Milteks Ceseka-Fatsa

In 2014, Milteks Ceseka-Fatsa had a total water footprint of 5,279 m³, which corresponds to 10 % increase compared to the year 2011.

Output-related water use per piece amounted 5.15 l / per piece in 2014. In 2011 output-related water use was 4.5 l / per piece, which seems to be an increase in the output-related water usage. However the issue has another logical explanation: up to and including 2011 Ceseka-Fatsa had its own water well. Part of the water used for the company was withdrawn from that well and was never measured so that the used amount were not included into the total water usage data. In 2014 the well had been closed by the local environmental authorities and the water demand was supplied 100 % from the city water supply, which is a measurable source.

c) Milteks Ajara-Georgia

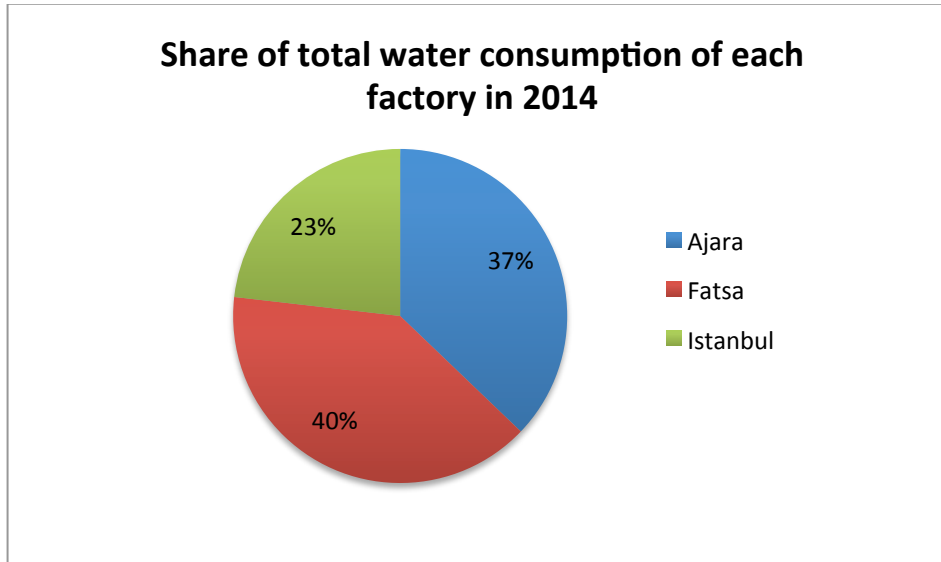
In 2014, **Milteks Ajara** had a water footprint of 4,944 m³, which corresponds to 39 % increase compared to the year 2011.

On the other hand, the output-related water usage amounted 1.13 l / per piece in 2014. In 2011, it was 1,75 l / per piece. Comparing those years it corresponds to a 65 % decrease.

Please see the company and yearly-based water usage comparison charts below.

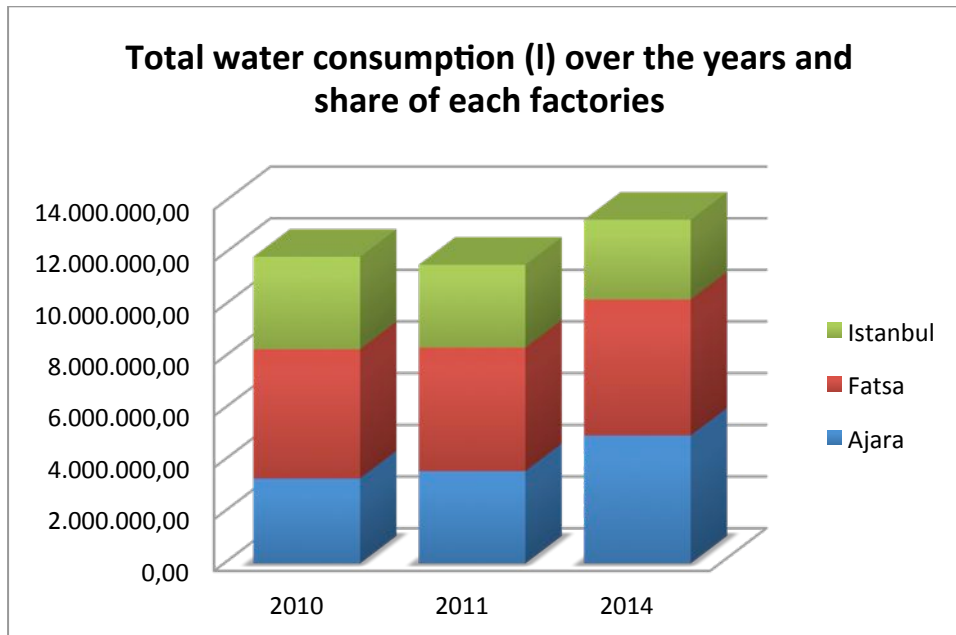
d) Comparison

The factory at Cesaka-Fatsa has consumed the largest amount of water in 2014 by contributing more than 40 % to total water consumption.



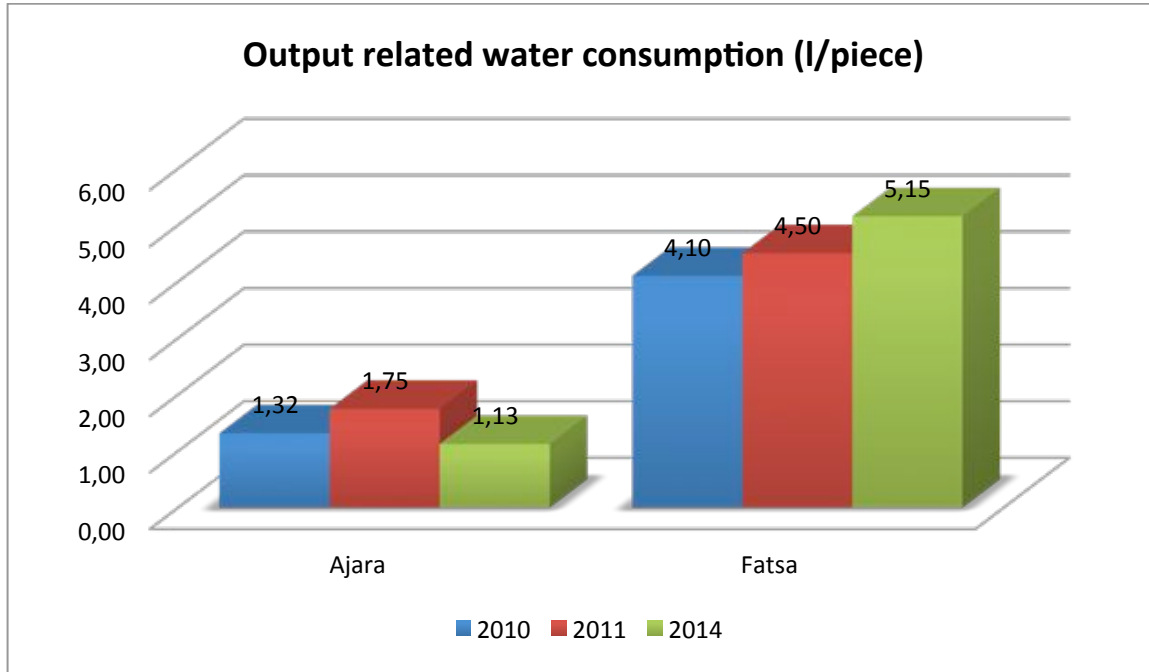
Share of total water consumption 2014

A comparison of the water consumption for the years 2010, 2011 and 2014 (see below) shows that beside Ajara (due to the high increase in the production volume), the other units in Istanbul and Fatsa had more or less the same consumption volume over last three years.



Comparison of total water consumption for 2010-2011-2014

Regarding the water footprint per piece, Ceseka-Fatsa shows the highest demand. Ajara has decreased its water footprint over the years.



Comparison of water consumption per piece for each factory on annual basis