

# Energy & Climate

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Saving energy and reducing greenhouse gas emissions is very important to Migros. In 2015, it stepped up its commitment to more energy efficiency, promoted renewable energies and built highly sustainable branches.

By pursuing binding targets, Migros continuously reduces its power consumption and greenhouse gas emissions. It primarily adopts measures aimed at **increasing energy efficiency**. At the same time, it actively promotes the use of **renewable energies**. Migros' commitment is guided primarily by the **2020 climate and energy strategy** (KES2020). All Migros Group companies determine individual targets within the context of the basic requirements for corporate environmental protection.

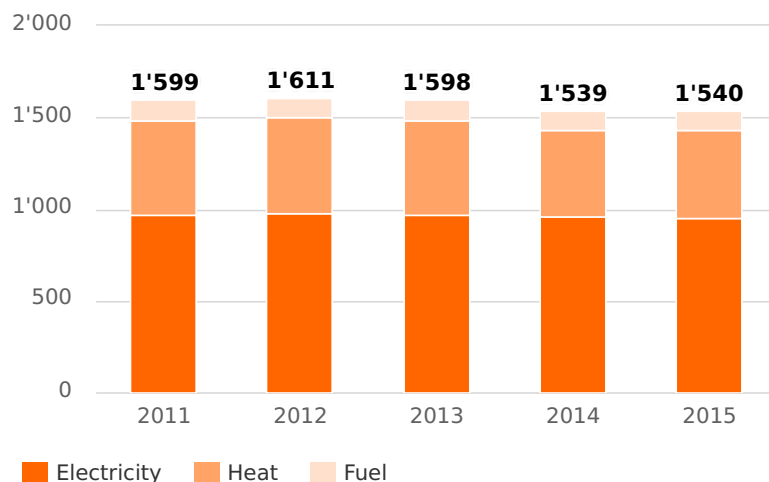
## Progress under 2020 climate and energy strategy

The 2020 climate and energy strategy (KES2020) sets specific reduction targets for the individual business areas of Migros. The targets cover energy consumption as well as greenhouse emissions.

## Cooperative Retailing and M-Industry

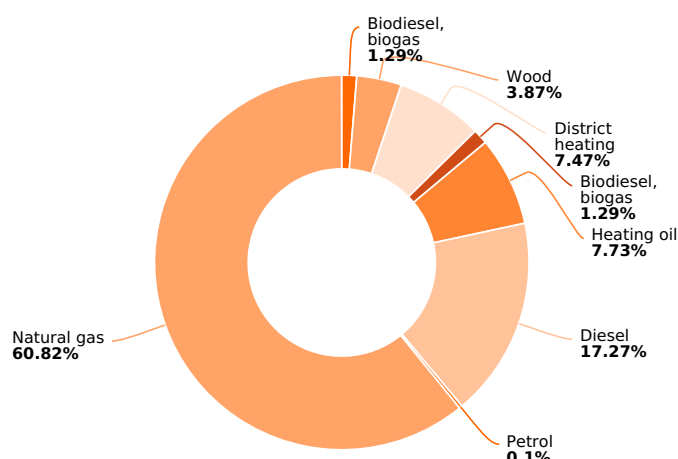
### Energy consumption

Energy consumption  
in GWh



## Share of energy sources in energy consumption

Share of energy carriers in energy consumption  
in GWh



## Greenhouse gas emissions

Greenhouse gas emissions (GHG) in 1'000 tonnes CO <sub>2</sub> equivalents <sup>[1]</sup>	2011	2012	2013	2014	2015	Change from previous year
CO <sub>2</sub> combustibles	94	94	93	83	84	0.7%
CO <sub>2</sub> fuels <sup>[2]</sup>	29	29	29	28	28	-1.0%
CO <sub>2</sub> eq refrigerant losses	40	40	33	34	28	-17.3%
CO <sub>2</sub> eq electricity <sup>[3]</sup>	128	130	129	127	126	-0.6%
<b>Total</b>	<b>292</b>	<b>293</b>	<b>284</b>	<b>272</b>	<b>266</b>	<b>-2.3%</b>

1 Scope 1 and 2, in accordance with Greenhouse Gas Protocol

2 Own vehicle fleets of the Migros Cooperatives and Saviva

3 In accordance with Swiss consumption mix at 132.9g CO<sub>2</sub>eq/kWh power

As part of KES2020, Cooperative Retailing has set itself the ambitious target of using 10% less power and emitting 20% less greenhouse gases between 2010 and 2020.

Migros will reduce greenhouse gases by twice as much as Switzerland as a whole within this period. It will therefore make an above-average contribution to the government's energy strategy and Swiss climate protection. At the beginning of this year, Migros was presented with the Watt d'Or award by the Swiss Federal Office of Energy, in recognition of its Generation M sustainability programme and the company's decade-long commitment to climate protection and energy efficiency.

In 2015, Cooperative Retailing reduced power consumption by 4.9% in absolute terms in comparison to 2010. In the same period, greenhouse gas

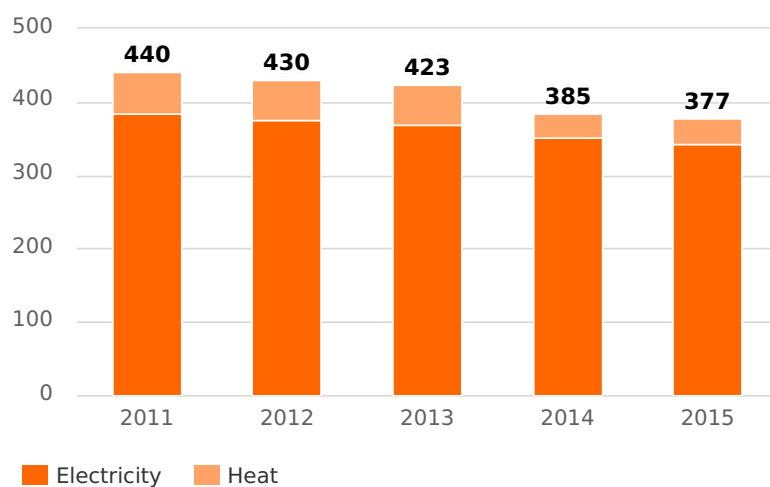
emissions have been cut by 17%. This reduction was largely due to the use of CO2 cooling systems and the switch to LED lighting in the branches.

## Energy consumption, Cooperative Retailing

Electricity consumption Cooperative retail in GWh	2011	2012	2013	2014	2015	Change from previous year	Goal 2020
Electricity	646	647	633	617	611	-1.0%	578

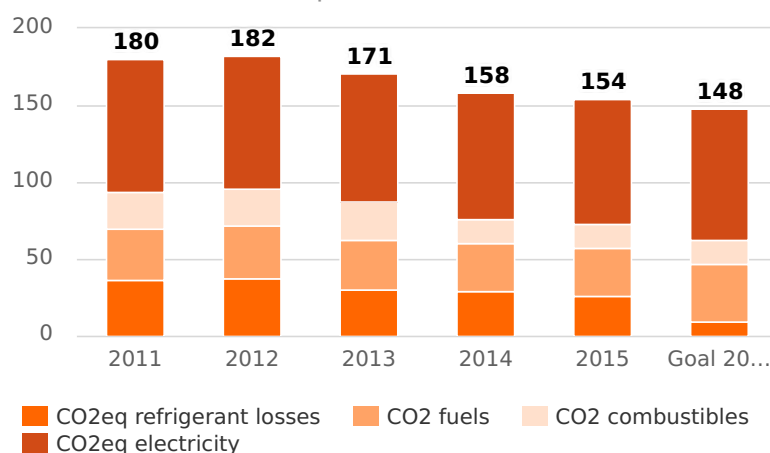
## Specific energy consumption, stores

Specific energy consumption, branches  
in kWh/m<sup>2</sup> sales area



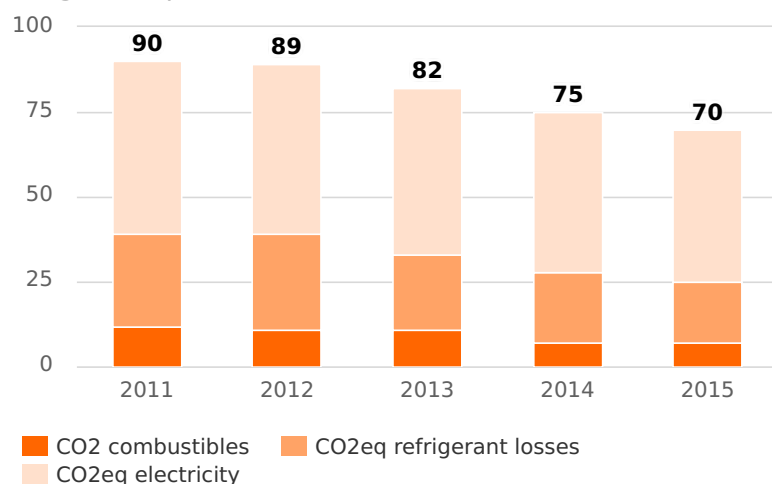
## Greenhouse gas emissions, Cooperative Retailing

Greenhouse gas emissions (GHG) Cooperative  
Retailing  
in 1'000 tonnes CO<sub>2</sub> equivalents



## Specific greenhouse gas emissions, stores

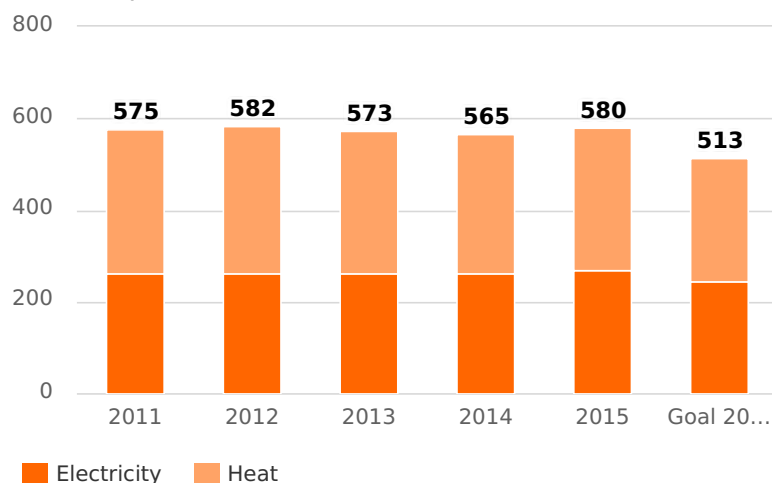
Specific greenhouse gas emissions (GHG), branches  
in kg CO<sub>2</sub>eq/t sales area



The 27 companies of M-Industry pursue the 2020 climate and energy targets which involve **specific reductions per tonne produced**. The industrial enterprises are aiming to reduce power consumption by 0.7% a year and heat consumption by 1.8% per tonne produced. CO<sub>2</sub> emissions from fossil fuels are to be reduced by 10% in absolute terms between 2010 and 2020.

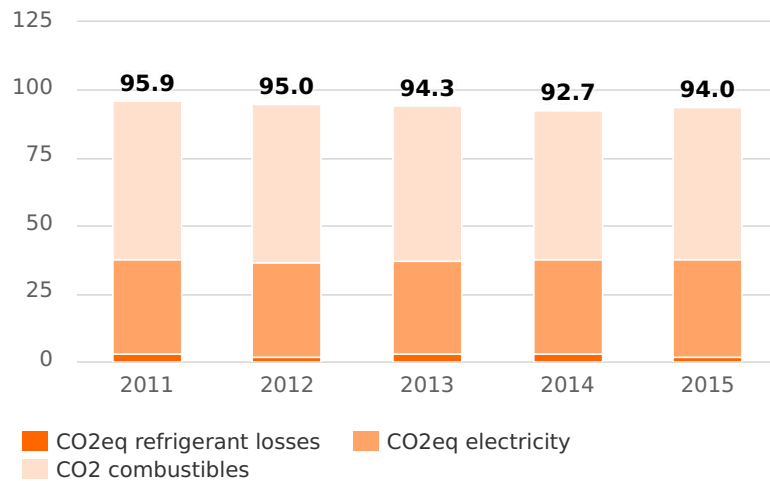
## Specific energy consumption, M-Industry

Specific energy consumption, industry  
in kWh/t production



## Specific greenhouse gas emissions, M-Industry

Specific greenhouse gas emissions (GHG), industry  
in kg CO<sub>2</sub>eq/t production

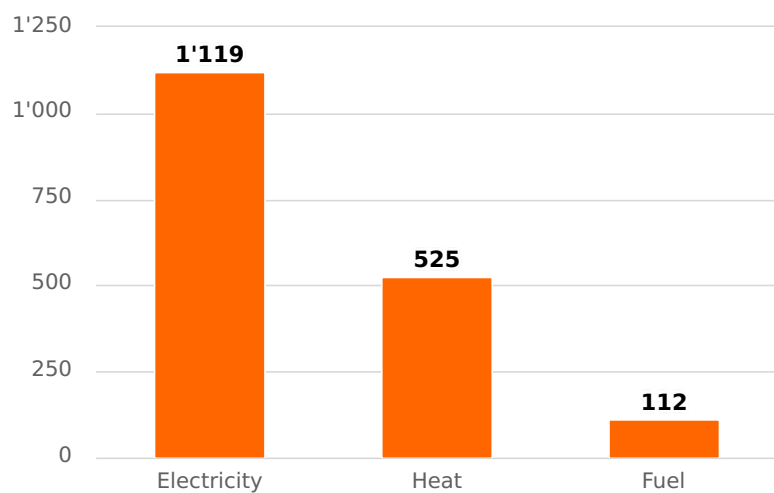


## Commerce, Financial Services & Travel

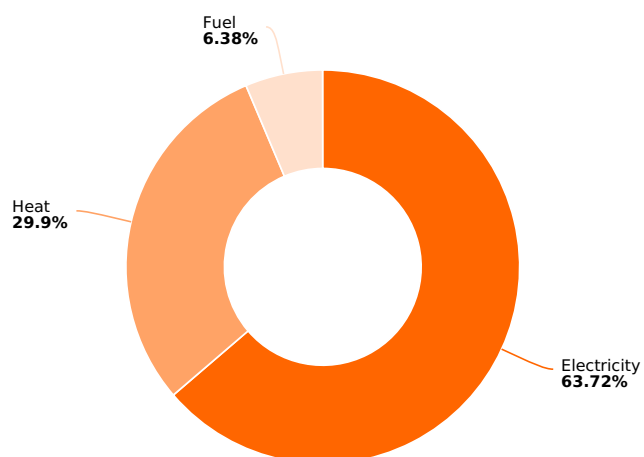
Since 2014, corporate environmental protection has been a component of the basic requirements that apply to **all companies in the Migros Group**. These allow the companies to be gradually incorporated into the group's energy and environmental management and means that they determine measurable targets on the basis of their business model and industry. In 2015, the companies Denner, Migros Bank and Hotelplan Suisse, among others, consolidated their corporate environmental protection strategies.

## Energy consumption Migros Group

Total energy consumption  
in GWh



Share of energy  
in GWh



## Direct and indirect greenhouse gas emissions

Direct and indirect GHG emissions, Migros group, Scope 1, 2 and 3 in tonnes CO <sub>2</sub> -eq <sup>[1]</sup>	Total Coop. Retailing & Industry	Retail <sup>[2]</sup>	Industry	Commerce <sup>[3]</sup>	Financial services & Travel <sup>[4]</sup>	Leisure facilities
<b>Direct GHG emissions (Scope 1)</b>	<b>140'829</b>	<b>69'831</b>	<b>70'997</b>	<b>6'378</b>	<b>203</b>	<b>3'023</b>
Heat	85'365	18'182	67'183	5'005	203	3'023
Fuel <sup>[5]</sup>	27'727	25'872	1'855			
Refrigerants	27'737	25'777	1'959	1'373		
<b>Indirect GHG emissions (Scope 2)</b>	<b>124'921</b>	<b>78'859</b>	<b>46'062</b>	<b>17'045</b>	<b>1'127</b>	<b>4'137</b>
Electricity <sup>[6]</sup>	126'389	81'146	45'243	17'045	1'127	4'064
District heating	-1'468	-2'287	819	0	0	73
<b>Total scope 1+2</b>	<b>265'750</b>	<b>148'690</b>	<b>117'059</b>	<b>23'423</b>	<b>1'331</b>	<b>7'160</b>
<b>Other indirect GHG emissions (Scope 3)</b>	<b>33'046</b>	<b>24'856</b>	<b>8'190</b>		<b>278</b>	
Third-party transport <sup>[7]</sup>	4'805	4'805				
Operational waste <sup>[8]</sup>	25'580	18'243	7'338			
Passenger flights <sup>[9]</sup>	2'661	1'809	852		278	

1 Scope of greenhouse gas emissions according to Greenhouse Gas Protocol.

2 Branches, operating centres, distribution centres and FMC

3 Based on data of the retailers Globus, Interio, Migrol and Denner (contains some projections and previous year's figures)

4 Based on data of Migros Bank and Hotelplan Switzerland

5 Own vehicle fleets of the Migros Cooperatives and Saviva

6 In accordance with Swiss consumption mix at 132.9g CO<sub>2</sub> eq/kWh power

7 Goods transportation by lorry through transport partners of the Migros Cooperatives

8 Calculation based on 2010 emission factors of Swiss greenhouse gas statistics; in industrial production, less rubbish but mainly CO<sub>2</sub>-neutral organic waste is generated.

9 Business flights of employees; offsetting via myclimate

## Energy efficiency as the top priority

The Migros Group produces 297'663t of greenhouse gas emissions each year. In order to reduce its emissions, Migros' first and most important measure is to **save energy**. In addition to **sustainable construction**, it invests in **energy-efficient store installations and equipment as well as new technology**, and it trains its employees to **be more economical**.

## LED lighting in all stores

Cooperative Retailing has been using **LED lighting technology** in all new buildings and conversions of Migros branches and specialist markets since 2015. This cuts power consumption for lighting in a branch by half. Out of a total of 804 Migros branches and specialist markets, 201 had been fully and approx. 140 partially equipped with LED in the sales area by the end of 2015. More locations are being converted to LED all the time.

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branches were fitted entirely with LED lights in the sales area by the end of 2015.

## More training in catering services

Correct **use and operation** of machinery is essential for exploiting potential savings to the full. That is why Migros invests in training its employees. In 2015, more training courses were held for staff in the area of catering services. The branches are making increasing use of **state-of-the-art** dishwashers and cookers that require less energy, water and chemicals. It is hoped that these measures will reduce power consumption by 10% between 2010 and 2020.

## Mibelle uses energy-efficient production process

Migros is always on the look-out for **potential savings**, including in M-Industry. For example, Mibelle introduced a new **emulsion production** method in 2015. This **energy-efficient process** uses cold instead of hot water when producing many of the cosmetics, which reduces energy consumption by up to 46'000 kWh per year. Mibelle is already producing around 30% of its emulsions in this way, with more to follow.

## Climate workshop for apprentices

When searching for potential savings, Migros also encourages its apprentices to get involved in this issue. Several Migros companies offer their apprentices the chance to take part in a climate workshop organised by the **myclimate foundation**, during which they work on projects in the areas of **climate protection, energy conservation, energy efficiency** and **renewable energy**.

In 2015, a polymechanics apprentice at Jowa AG won the climate workshop's national project competition in the energy category. He developed a procedure that can considerably reduce the amount of **compressed air used by production equipment**. The method will enable Jowa AG to use less energy and save money.

## Active promotion of renewable energy

Migros not only reduces its greenhouse gas emissions through **better energy efficiency** but also by replacing fossil fuels with **renewable energy**. Eleven out of the 13 logistics centres use heat from biomass, district heating from incineration plants or waste heat.

## Migros replacing fossil fuels

Since 2014, **waste heat** is being used to prepare **all hot and warm water** in



the deep-freeze warehouse of Bischofszell Nahrungsmittel AG in Sitterdorf (TG). An additional **heat storage system** captures the waste heat from the compressors, which eliminates the need for fossil fuels.

Since 2014, Bischofszell Nahrungsmittel AG has also been diverting the steam used to peel potatoes back into a tank, where hot water and central heating water are produced via two heat exchangers. As a result of the investment, the amount of heat required in 2015 was 470 MWh lower than in the previous year, which corresponds to 50'000l of heating oil.

Since 2015, Migros-Verteilbetrieb Neuendorf AG (MVN) has been using the waste heat from its cooling systems in frozen goods logistics to heat the building, **produce hot water** and operate the underfloor heating in the warehouse. Heating oil had previously been used for this purpose. The system will start to show its full potential this year. MVN AG calculates that it saves 290'000 litres of heating oil per year (around 96% of annual consumption) and cuts CO2 emissions by 765t per year.

Jowa AG will also start using renewable energy in the future. In the reporting year, it decided to invest CHF 7 million in the **construction of a wood-fired heating plant**, which will enable the company to reduce its CO2 emissions by 3'000t to 11'000t per year across all locations. The wood-fired heating plant will guarantee a **constant supply of heat** and cover more than 60% of the energy required for heating purposes. Natural gas will continue to be used for energy peaks. The wood-fired heating plant is due for completion in 2017.

## Migros uses solar energy

**Switzerland's biggest solar power plant**, with an output of 6.7 megawatt peak (MWp), is located on the roofs of Migros-Verteilbetrieb Neuendorf AG (MVN). In 2015, the plant was extended to the roof of a new warehouse and can now produce close to 30% more electricity than before. The system consists of close to **26'000 solar panels** across an area of more than **46'000m<sup>2</sup>** – equivalent to 177 tennis courts.

For all new buildings and conversions, the Migros Cooperative Eastern Switzerland assesses the viability of photovoltaic systems as standard. An energy-neutral branch that is operated entirely with solar energy was opened in Zuzwil in 2015.

A total of 88 solar power plants with an installed output of 26'271 kWp could be found on the roofs of Migros buildings at the end of 2015. They generate some 25'360 MWh of power annually, which corresponds to the power consumption of around 7'000 average households.

The Minergie-certified surface area within the Migros Group amounts to 885'275 m<sup>2</sup>.

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solar power plants can be found on the roofs of Migros buildings, with an installed output of 26'271 kWp.

## Minergie and solar power, Migros Group

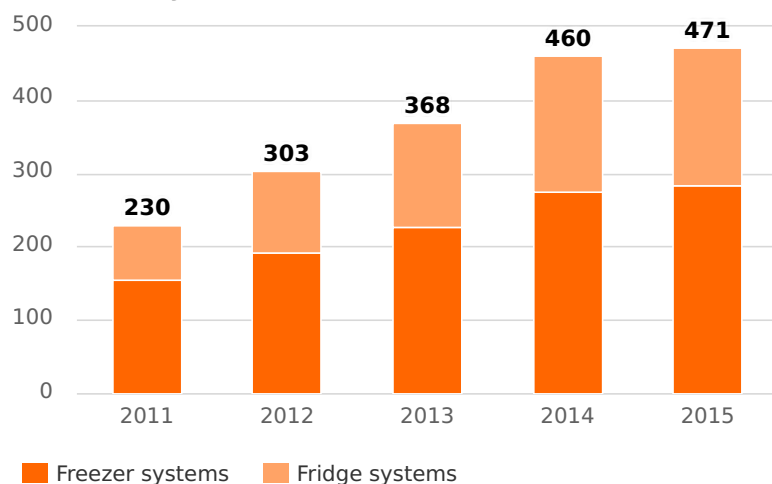
	2011	2012	2013	2014	2015	Change from previous year
Minergie and solar energies, Migros Group						
Minergie-certified area (in 1'000 m2)	790	822	872	878	885	0.9%
Solar power plants (installed capacity on Migros roofs in kilowatt peak)	3'222	3'691	11'882	16'817	26'271	56.2%

## Efficient cooling technology

In 2015, Migros used the **natural refrigerant CO2** to operate around 25% of the cooling systems in the branches of Cooperative Retailing; this corresponds to 470 of the approximately 1'900 systems in its branches.

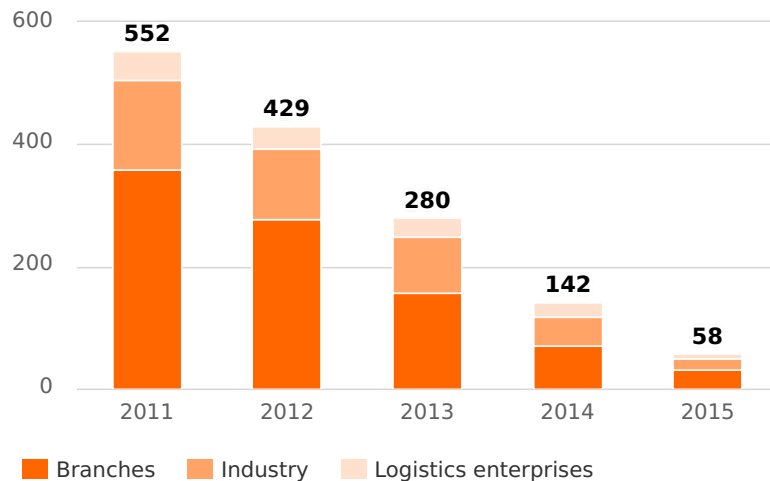
## CO2 cooling systems, stores

CO2 cooling systems, branches  
number of systems



## HCFC cooling systems

HCFC cooling systems  
number of systems



In 2011, Migros became the first retailer in Switzerland to use **glass doors on its refrigeration cabinets**, reducing power consumption for cooling by 30-45%. Migros has since fitted 189 branches with glass doors (fully or partially), with more conversions to follow. This corresponds to **6'570 running metres of cooling units**.

## Award for innovative cooling system

In 2015, the cooling system in Mythen-Center Schwyz (Migros Cooperative Lucerne) won an award in the innovation category at the **international energy management congress EHI** in Cologne, Germany.

Equipping the branch with this new system will make it considerably **more energy efficient**. This is due to three factors: the use of liquid refrigerants, groundwater cooling, and special ejectors in the CO2 cooling system. Thanks to the system, the branch will reduce the amount of energy used in refrigeration and freezing by 25%.

"The system applies new research findings in practice and thereby makes an important contribution to the technical development of CO2 cooling technology."

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Judges panel of the EHI Energy Management Award

## tegut...: Germany's first climate-friendly branch

The **climate-friendly tegut... branch** in Marburg-Cappel (Hesse) has been awarded the Blue Angel, which distinguishes it as a highly energy-efficient operation. The branch uses only **climate-friendly, natural refrigerants**, and its energy consumption is 30% lower than comparable older branches.

## Sustainable construction

Since 2014, Migros has aimed to construct all new buildings and conversions of Migros branches in accordance with the sustainable construction standard **Nachhaltiges Bauen Migros**, thereby making them even more environmentally friendly.

In the reporting year, Migros made further efforts to refine its **tool for measuring adherence to the standard**. The new version, which features

optimised processes and is easier to use, will be available to all Cooperatives from this year. In 2015, **36 new buildings or conversions were constructed in accordance with the standard.**

These include the new **Minergie-certified branch** in Eglisau (ZH). In comparison to the old branch, it consumes almost 43% less energy per square metre of store space and more than 50% less per running metre of cooling units. In addition to energy-efficient construction, an innovative cooling system, featuring a heat pump and a function for producing cold water for air conditioning, also helps to save energy. A 1'490 m<sup>2</sup>, 245 kilowatt peak (kWp) photovoltaic system covers more than half of the branch's electricity requirement.

## Habitat for animals and plants

To promote biodiversity, Migros made a promise under the Generation M sustainability programme to create at least 2.5 million m<sup>2</sup> of near-natural habitat by the end of 2015. A total of 24 company premises and more than 2.7 million m<sup>2</sup> were certified as near-natural habitat by the **Nature & Business Foundation**. Migros thereby met its promise.

In front of the Zugerland shopping centre in Steinhausen, for example, a 340 m<sup>2</sup> wild bee paradise with nesting sites and flowering plants was built in 2015 as a food source for bees. In addition, three bee hives with 150'000 honey bees were installed on the roof of the Neuchâtel/Fribourg Cooperative's Marin Centre. The shopping centre is surrounded by 26'000 m<sup>2</sup> of premises featuring a near-natural design and an **insect hotel**. To highlight Migros' commitment in this area, a **natural garden roadshow** was held in three large shopping centres of the Lucerne Cooperative.

2.7 million m<sup>2</sup> of near-natural habitat was created.

2.7 million m<sup>2</sup>

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of near-natural habitat was created.

## Sustainable construction symposium

In 2015, the annual **internal symposium** Immobilien was dedicated to the topic of sustainable construction. Around a hundred participants from all Migros Group companies spent a full day addressing the latest concepts and their impact on the economy.

These included the climate and energy policy, the 2'000-Watt Society and the Network of Sustainable Construction. Representatives from IKEA, Suva and Migros presented their strategies, along with specific practical examples for the real estate area. One speaker showed how waste will be used as a commodity and construction material in the future.

## First Migros plus-energy branch opened

In 2015, Migros opened its first plus-energy branch in Zuzwil (SG). The branch of the Eastern Switzerland Cooperative covers its annual energy requirement with a 279 kWp **photovoltaic plant**. There is special focus on **energy-efficient construction** according to the **Minergie standard** and Migros' own Nachhaltiges Bauen standard for sustainable construction.

It is not just the construction method that is highly energy-efficient but also the branch operations and all building systems. The branch uses the **natural**

Calculated over the course of a year, the plus-energy branch

**refrigerant CO2** to operate its fridges and freezer units. As a by-product of commercial food refrigeration, a considerable amount of **heating energy is generated, which is used to heat the building**. To generate hot water, the branch uses heat pump boilers – no fossil fuels are used. The intelligent building management system automates many of the processes. For example, the energy-saving 100% LED lighting is controlled via time-switch channels, and all heating, ventilation and air conditioning (HVAC) processes are automated.

produces more electricity than  
it consumes.

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