Carbon Footprint Report

We Fashion

- Fiscal Year 2015 –

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Date: June 2016

Version: 1.2

For a good understanding and readability, this document contains a lot of figures and tables. Even if conceived to consume as little as possible they still consume a lot of ink and paper if printed. If one only takes the energy consumption into account, it is 80% up to 95% more climate friendly not to print. If all LCA emissions are taken into account however, it is considered to be better to print recto-verso and two pages per sheet once you spend longer than 3 minutes reading per page. Printing one-sided and in colours becomes more interesting if you read longer than 13 minutes per page.

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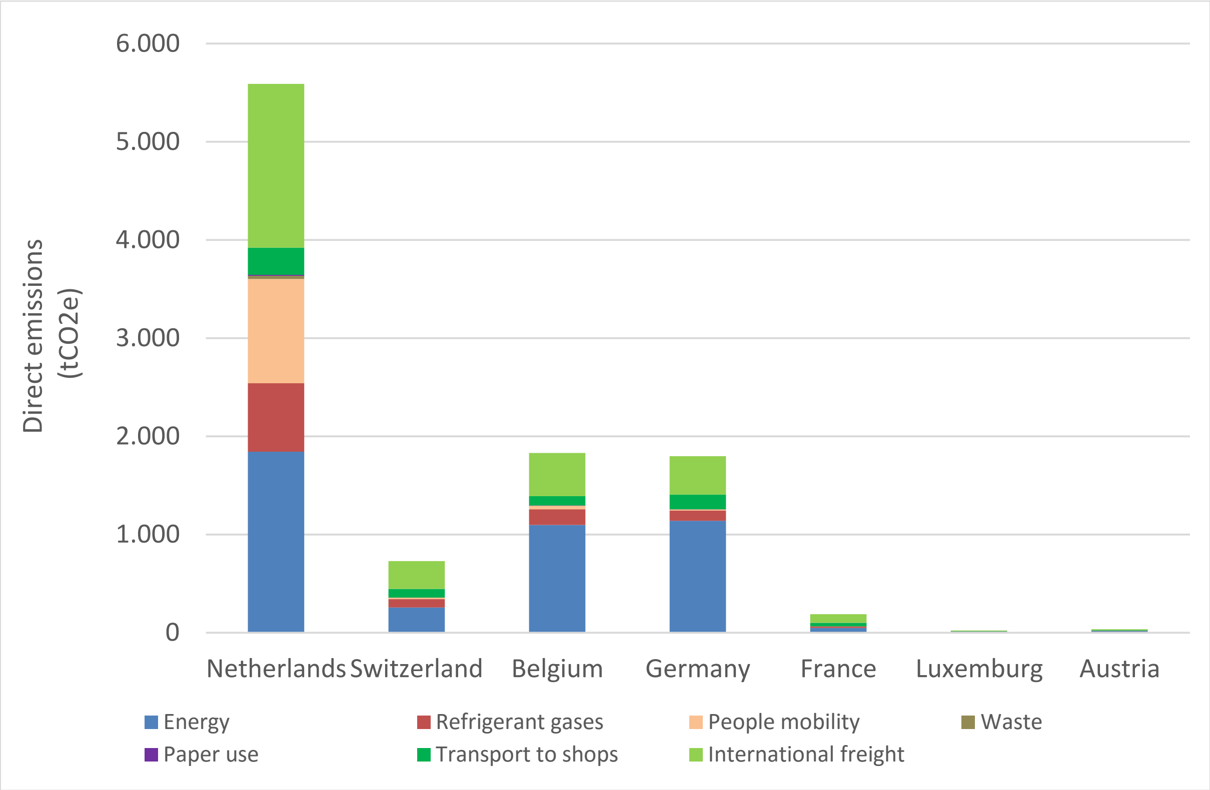
Management summary

In the previous carbon footprint report of 2009, the scope was limited to WE Fashion's activities in the Netherlands. In this report of 2015, We Fashion decided to widen its scope of analysis. Stores and satellite offices from Belgium, Germany, Switzerland, France, Austria and Luxemburg are also taken into account, as well as the emissions from the transport of the value chain.

The total direct emissions of We Fashion are **10.194 tCO_2e for 2015**, with an error margin of 27%. Total emissions, including indirect emissions are 11.416 tCO_2e. Without green electricity, direct emissions would have been 15.462 tCO_2e.

The scope 1 emissions are 4.066 tCO2e, the scope 2 emissions are 1.571 tCO2e and the scope 3 emissions are 5.779 tCO2e.



The overall emissions of 10.194 tCO_2e correspond to driving 1.421 times around the world with an average car, 3.924 return flights Brussels New York, or the emission reduction of the installation of 3.411 efficient cook stoves in Africa.

Energy use for the infrastructure is the highest emission source, responsible for 43% of the emissions. Freight is the second biggest emission source, responsible for 35% of the emissions. People mobility accounts for 11% of the overall emissions. The infrastructure of the Netherlands alone accounts for 18% of the overall emissions, and international freight is responsible for 28% of the emissions.

The Netherlands are responsible for 55% of the emissions, Belgium for 18%, Germany for 18%, Switzerland for 7% and France for 2%. Other countries have a relatively small contribution to the overall emissions.

The emissions have **decreased by 32%** compared to 2009 in the Netherlands, for the corresponding scope. This is due to reduction in gas consumption, electricity and company cars, and a switch to green electricity.

Concerning the relative emissions per ton of clothes delivered to the shops, the Netherlands have an average emission, Belgium, Germany and Luxemburg have a rather high emission per ton of product delivered, while they are very low for France and Switzerland. This is partly due to low emission factors for electricity, and partly due to a high concentration of clothes per square meter shopping space and efficient transportation.

Emissions per square meter of shopping space give a different image. Germany has the highest emissions per square meter. Belgium, France, Luxemburg and Austria have a medium high emission per square meter, while the Netherlands and Switzerland have the lowest emissions per square meter.

The error margin on the results is quite high. For a large amount of the actual emissions, assumptions had to be made (e.g. energy use for offices and shops in other countries than the Netherlands, some parts of freight).

Therefore one of the important next steps for the future is to enhance the data collection in order to obtain more accurate results that will allow a better follow up of emission reduction efforts. Overall conclusions of this report will however stay the same.

Reduction efforts should focus on energy use in the shops and freight. Results for natural gas consumption are already good, and results for electricity consumption are within average values. This shows that reduction efforts can focus on the electricity consumption in the shops. A quick win to reduce the emissions from energy use is a further expansion of the use of green electricity, and this especially in the countries with a high emission factor for electricity, such as Germany and to a lower extend Belgium.

Reduction efforts related to freight are especially related to international transport by airplane. Although most of the international freight is already done by ship, almost all emissions are related to transport by airplane. This means that even a small extra modal shift from airplane to ship has a large emission reduction potential.

Note that the social cost of We Fashion's emissions to society is estimated to be 1.182.736 euro as estimated by the Stern Review. This represents the cost for society to control or repair the damage caused by the total (direct + indirect) emissions of We Fashion. The cost to offset those emissions now by supporting emission reduction initiatives in developing countries is estimated to be 45.602 euro.

Content

Figures

Tables

1 Scope Definition

In the last report of FY 2009, the scope was limited to We Fashion's activities in the Netherlands (including air and train transport from or to the Netherlands) specifically:

- Utrecht head office, Reactorweg 101
- Utrecht distribution centre, Kobaltweg 60
- Utrecht storage place, Kobaltweg 58

In this report for FY 2015, We Fashion decided to extend the organisational scope.

In addition to the Netherlands' activities, We Fashion has satellite offices in Belgium, Germany and Switzerland. Furthermore, they have stores in Belgium, Germany, France, Luxemburg and Austria. The organisational scope is described in the following graph.

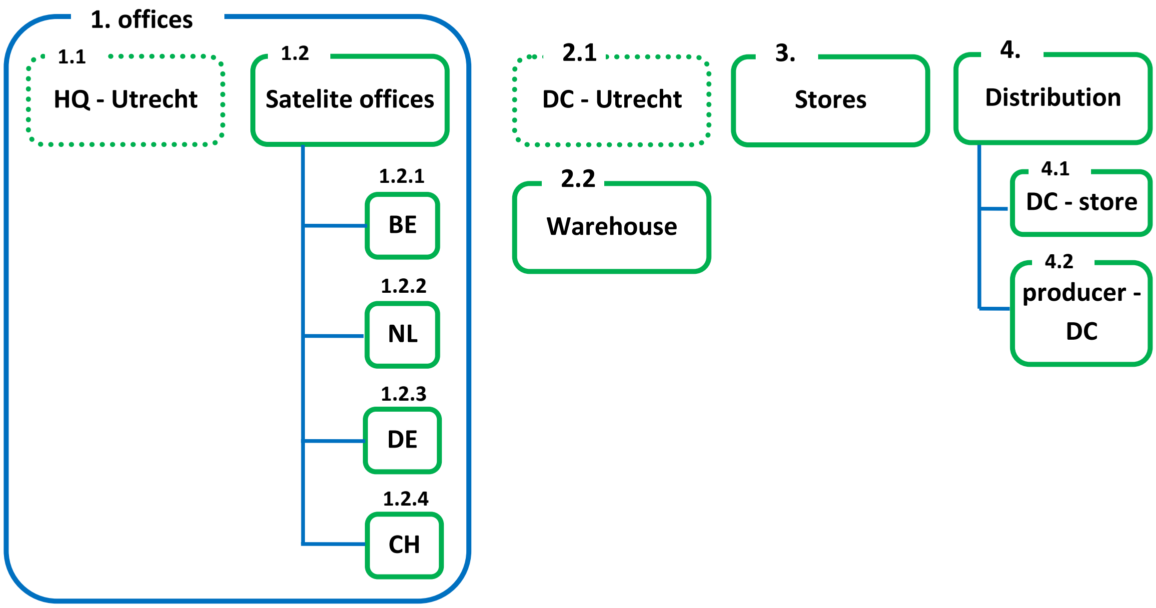


Figure 1: Organisational scope

Scope 1 includes all the items related to the direct activities of We Fashion. It involves:

- The onsite produced energy required to enable the activity
- The refrigerant losses from air conditioning systems
- The company cars owned or leased by the company.

Scope 2 is the electricity consumption.

Scope 3 is not mandatory in a carbon footprint report. We Fashion decided however to include the following items in the scope 3 reporting :

- For incoming materials, paper use
- Home-work commuting
- Waste
- Business travel

- Freight from producers to shops

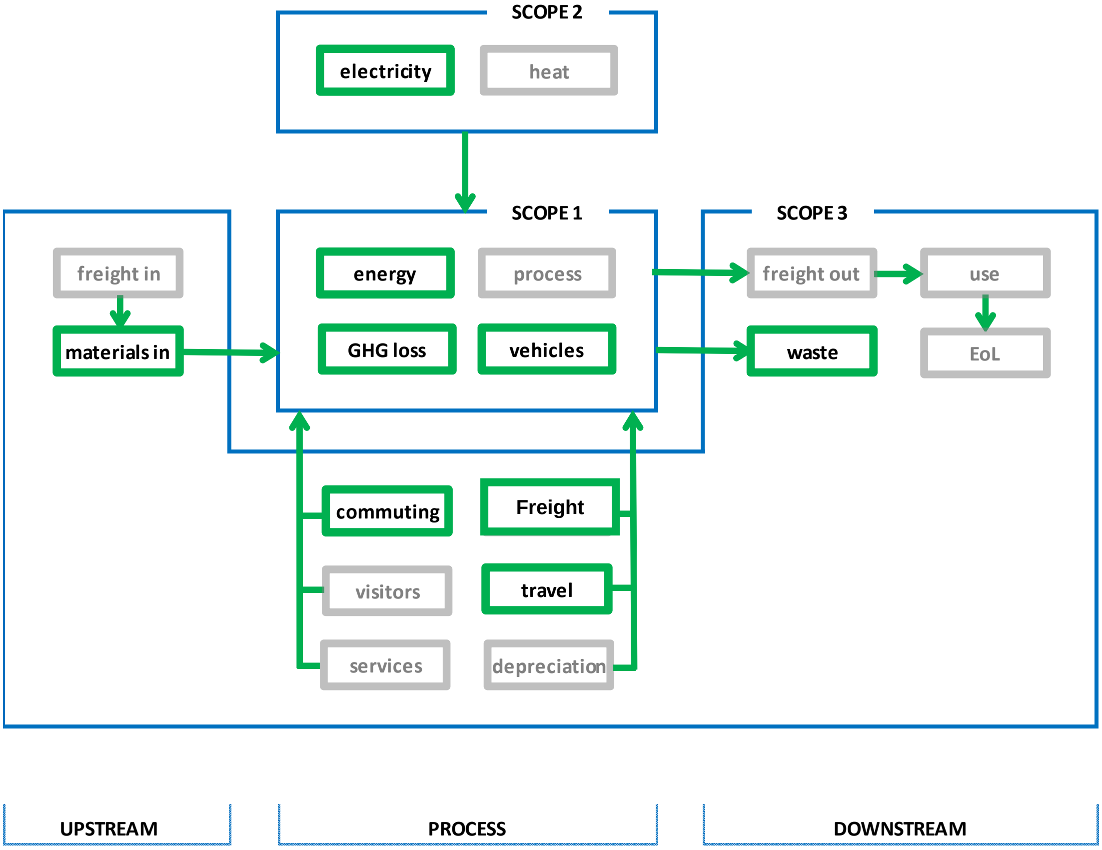


Figure 2: Operational scope

The operational scope as described in the graph here above is not the same for each of the organisational items in the scope. The following table clarifies the operational scope that is used for each item of the organisational scope.

Table 1. Operational scope for different parts of the organisational scope

Scope		HQ Utrecht	Satellite offices	DC Utrecht	Warehouse	Stores	Distribution
1	Energy	x	x	x	x	x	
1	Company cars	x	x	x	x	x	
1	GHG losses	x	x	x	x	x	
2	Electricity	x	x	x	x	x	
3	Commuting	x	x	x	x		
3	Paper use	x	x	x	x		
3	Waste	x	x	x	x		
3	Business travel	x					
3	Freight						x

2 Available data

2.1 Weight of products transported and surface area per country

In 2015, the surface area used in the Netherlands is about 66% of the total surface area in the scope. The second biggest surface can be found in Belgium with about 15% of the total surface. Germany represents 9% of the surface, Switzerland 7% and France 2%. The surface in Luxembourg and Austria is very small compared to the other countries. The difference between the total area and the area of the shops is only significant for the Netherlands, where the offices, the warehouse and the distribution centre occupy an important surface area.

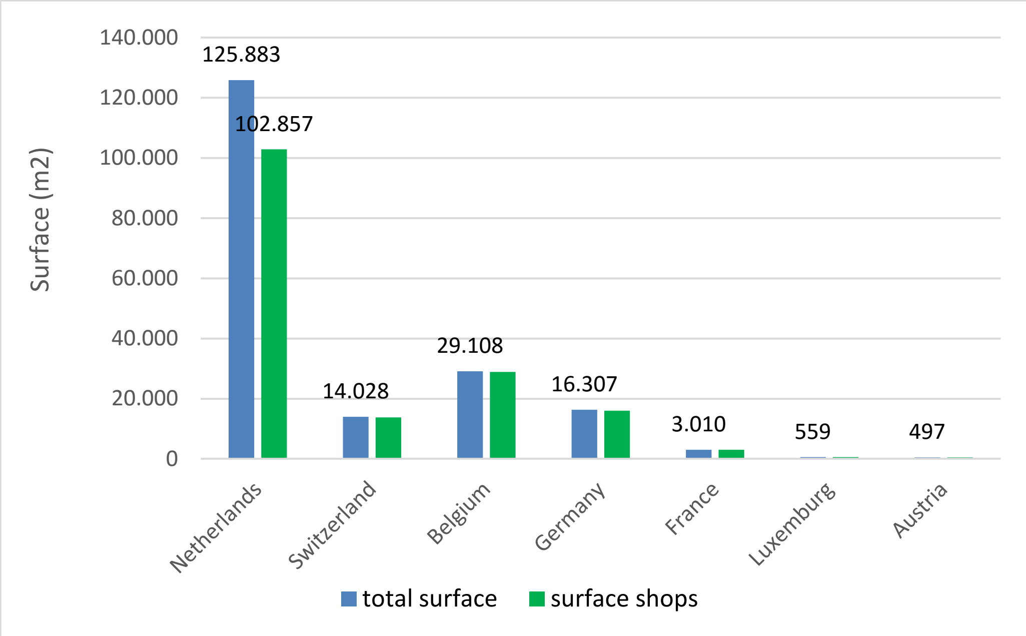


Figure 3: Surface Area (m^2) per country

The weight of clothes delivered to the respective countries shows more or less a similar profile. The Netherlands received 58% of the total amount of clothes, while Belgium receives 15% of the clothes, Germany 13%, Switzerland 10%, France 3%, and Austria and Luxemburg less than 1%.

Note that we did not receive the exact amount of clothes transported to Luxemburg and Austria since they are included in the transport of respectively Belgium and Germany. An estimation was made based on the surface of the shops.

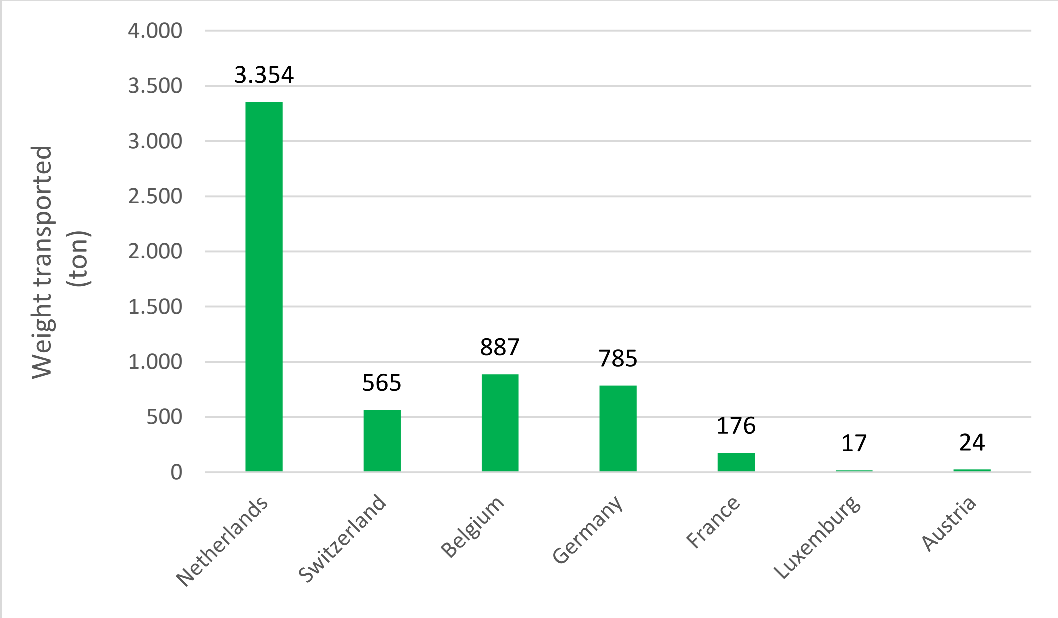


Figure 4 : Weight of products transported to each country

It's also interesting to verify the amount of clothes transported per square meter of surface area. Values are more or less in the same order of magnitude although they are remarkably higher for France, and lower for the Netherlands and Belgium. This can be explained by the fact that in Germany and France the shops are almost exclusively located in shopping centres.

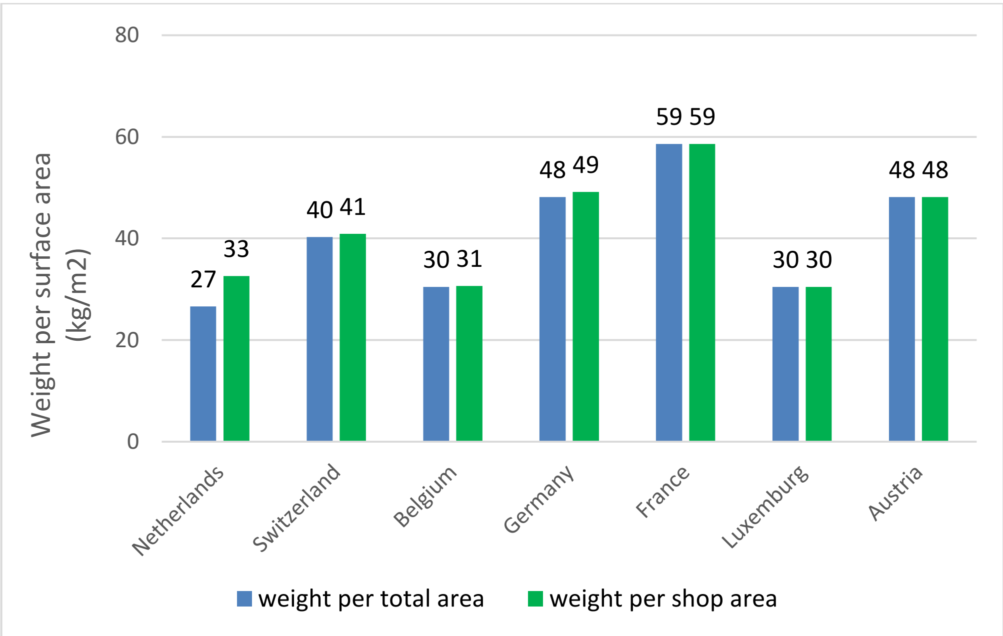


Figure 5 : Weight of products per country per square meter

The surface area and the weight of product are used for the calculation of the relative emissions.

In terms of FTE, employees working in We Fashion **offices** are mentioned below.

Table 2. Amount of FTE in offices per country

FTE	#
Netherlands	239
Belgium	12
Switzerland	10
Germany	5

2.2 Infrastructure – Energy

The energy consumption related to gas and electricity use is shown in the graph below. We obtained primary data for the energy consumption in the Netherlands. For other countries benchmarked values have been used for the offices, and for the shops an extrapolation from the energy consumption of the Dutch shops has been used.

The electricity used in the Netherlands is green except for the warehouse. Also France and Luxemburg use green electricity. All other countries consume grey electricity in their shops and their offices. The total electricity consumption is 18.098 MWh. The Netherlands consumed about 11.582 MWh of electricity in 2015, responsible for 64% of the total electricity. Belgium is the second largest consumer of electricity, responsible for 2.977 MWh in 2015. This is 16% of the total electricity consumption.

A total amount of 13.940 MWh of natural gas was used in 2015. The proportions of consumption by the different countries are similar to electricity use.

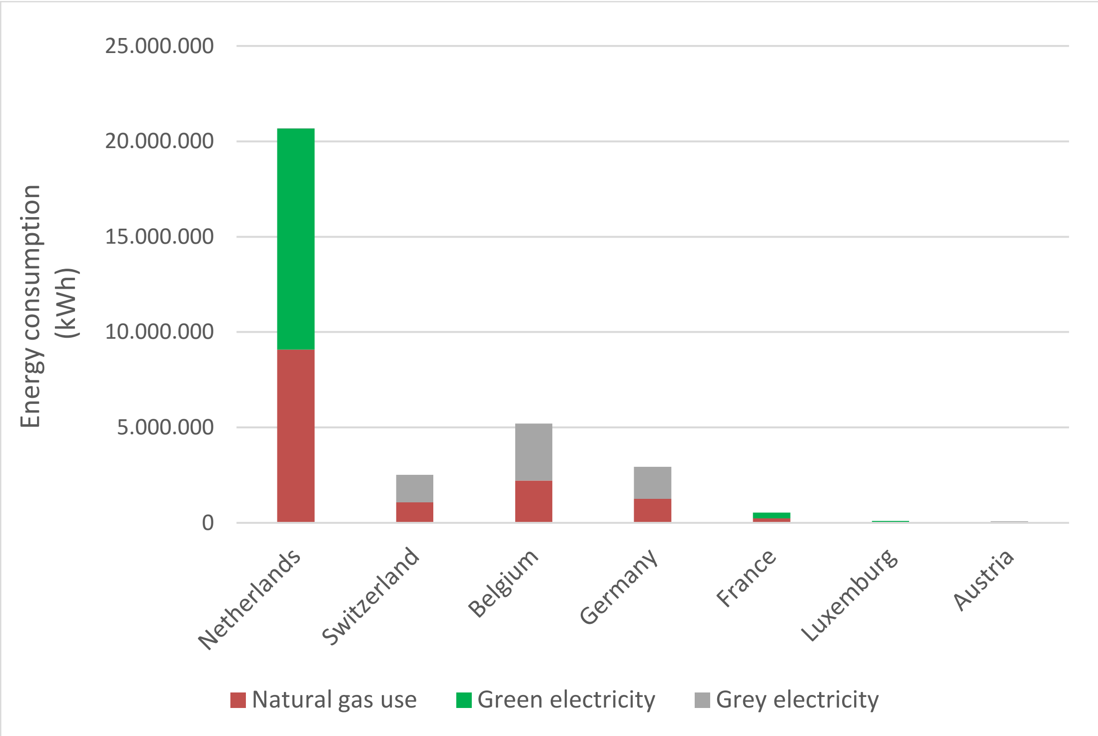


Figure 6: Energy consumption per country

Energy consumption per square meter of surface is almost the same for all countries, since values are based on extrapolated and/or benchmarked values. The values from the Netherlands are lower than those of other countries, since the energy consumption of the headquarters, the warehouse and the distribution centre are also taken into account. If only the shops are taken into account, the electricity consumption and natural gas consumption per square meter are respectively 102 kWh/m^2 and 76 kWh/m^2 (values that have been used for extrapolation). The energy consumption of the headquarters and the distribution centre are not reported separately (no separate meters). The electricity consumption and natural gas consumption per square meter of the headquarters and distribution centre together are both 54 kWh/m^2 .

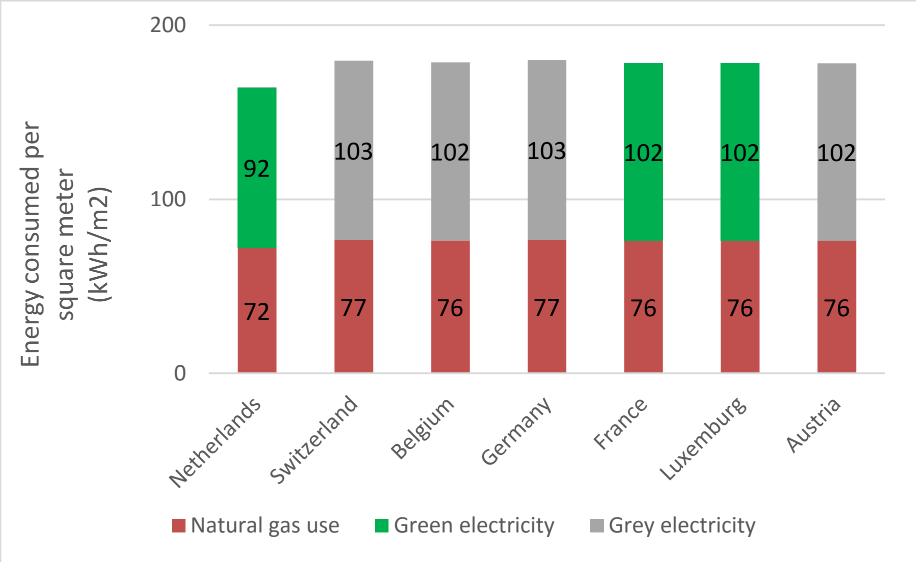


Figure 7 : Energy consumption per square meter (kWh/m^2)

2.1 Infrastructure - Refrigerant losses

As expected, the Netherlands are responsible for 65% of the total amount of refrigerant losses.

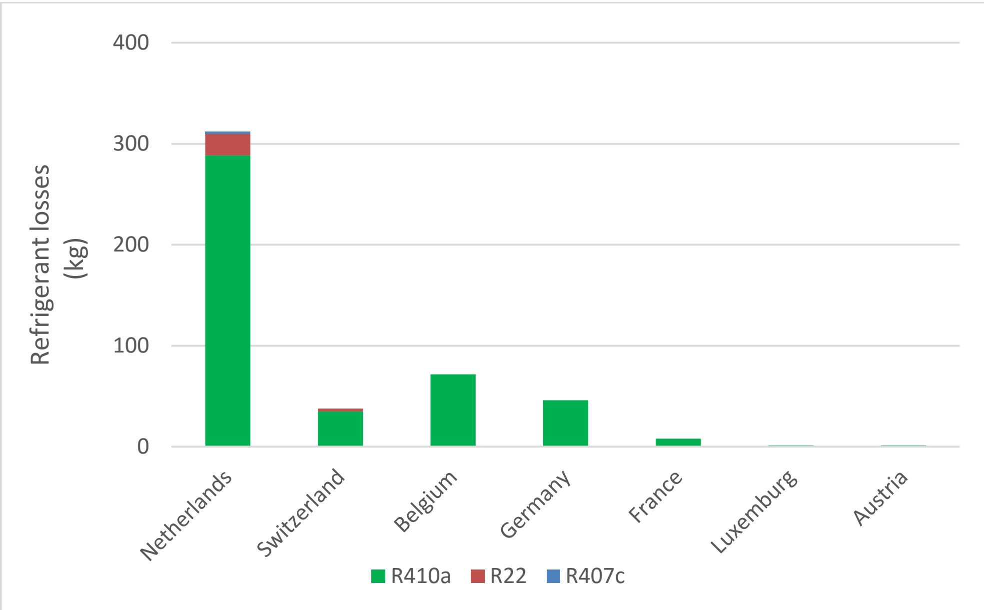


Figure 8 : Refrigerant losses (kg) per country

As illustrated below, the number of air conditioning systems is proportional to the surface of the country.

Some extrapolations have been made, based on the results for the Netherlands. This explains the fact that the results for France, Luxemburg and Austria are the same.

Note that refrigerant losses are estimated based on the average annual losses and not on the measures amount of refrigerant losses.

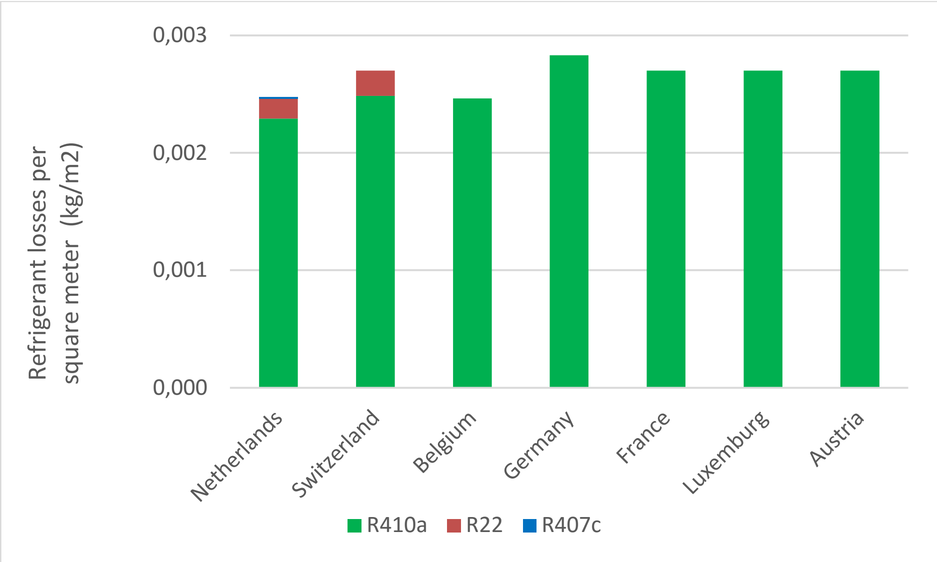


Figure 9 : Refrigerant losses (kg / m2) of surface area

2.2 People mobility

In the following graphs, the distance for home-work commuting (p.km) and company cars (litres consumed) are illustrated. We Fashion decided to broaden the scope of mobility. In the FY 2009 report, only mobility from the headquarters' employees was included. This report also includes mobility in Belgium, Switzerland and Germany.

Business travel (flights and trains) were limited to travel from or to the Netherlands in the FY 2009 report. All the flights and train trips from and to Europe are taken into account in this report. This is the reason why figures jumped in comparison to 2009 (162% of increase for flights and 726% for train trips).

About 85% of homework commuting is related to the Netherlands since there are 20 times more employees than Belgium, Germany and Switzerland. Note that the commuting is only taken into account for the offices, and not for the shops.

Most of the employees use their car for home-work commuting (86%).

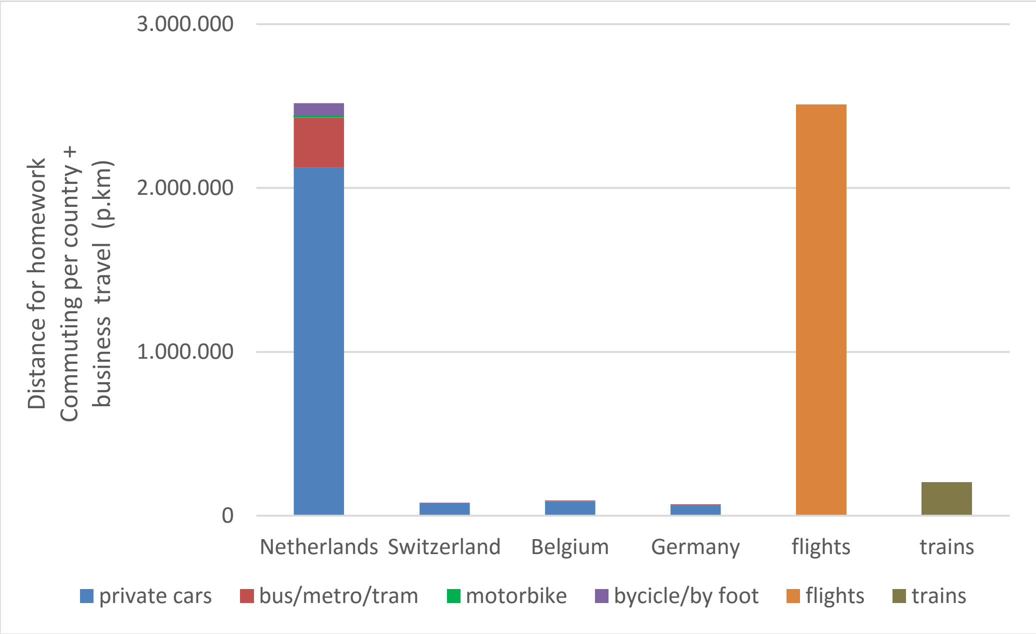


Figure 10: Distance related to home-work commuting

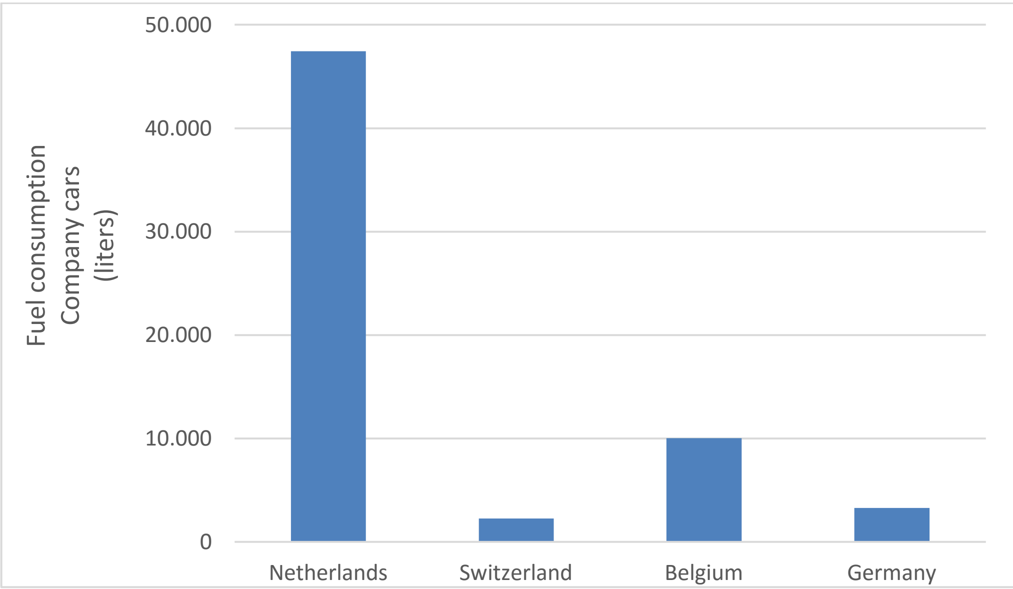


Figure 11:Fuel consumption related to company car use (liter)

Note that the figures for home-work commuting and company cars are an estimation with a relatively high error margin. The data from Belgium and Switzerland are based on some assumptions (average distances per employee).

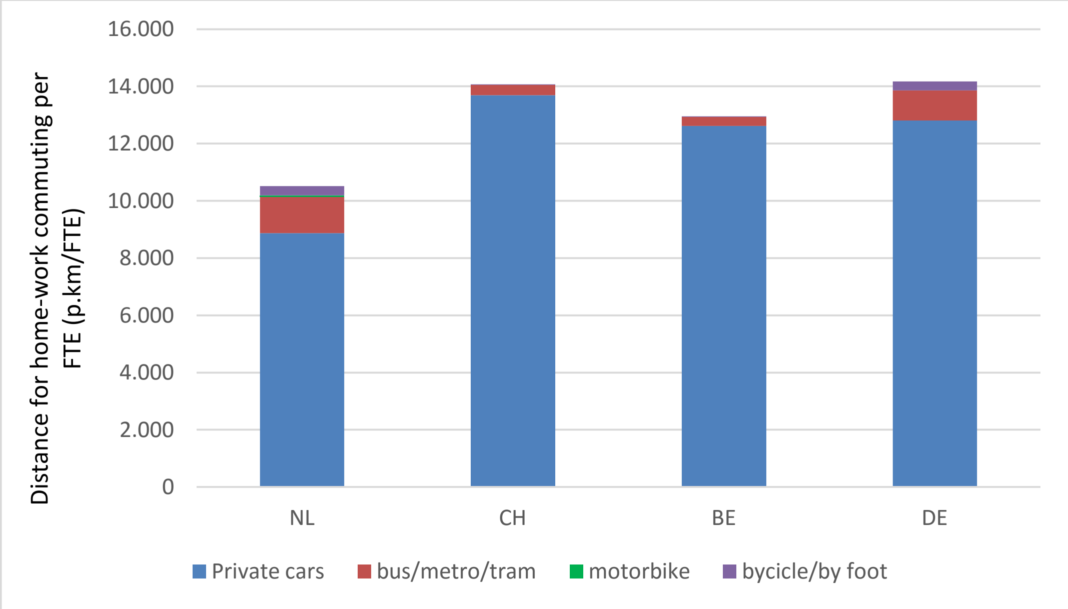


Figure 12: Distance for home-work commuting per FTE (km/FTE)

The average distance is slightly lower for the Netherlands and higher for Switzerland and Germany.

Per employee, there is a high consumption of fuel for company cars in Belgium and Germany. Relatively little employees have a company car in the Netherlands and Switzerland.

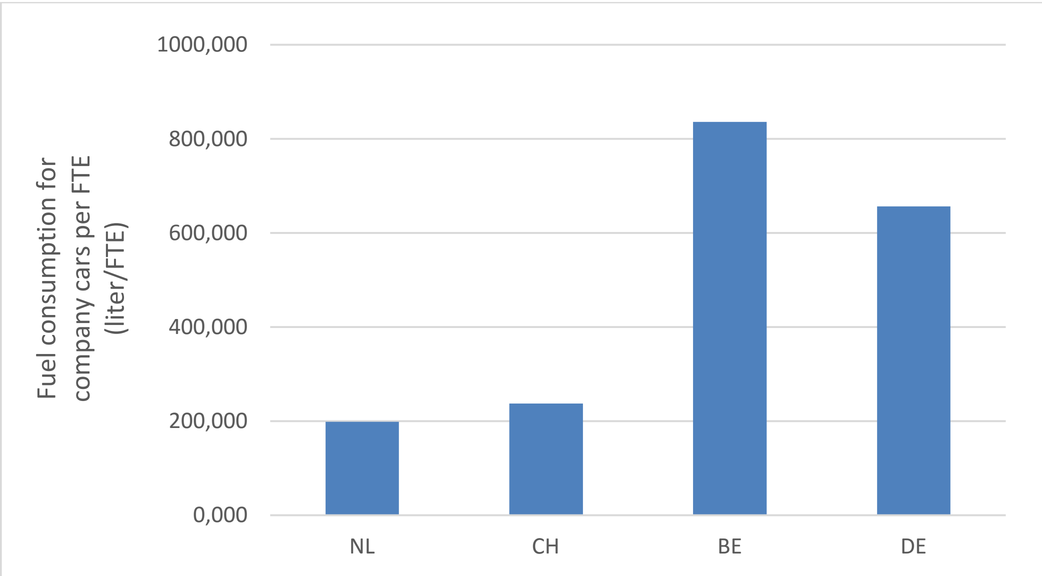


Figure 13: Fuel consumption from company cars per FTE

2.3 Waste and paper use

Paper and cardboard waste are the most important waste streams, responsible for 83% of the total waste.

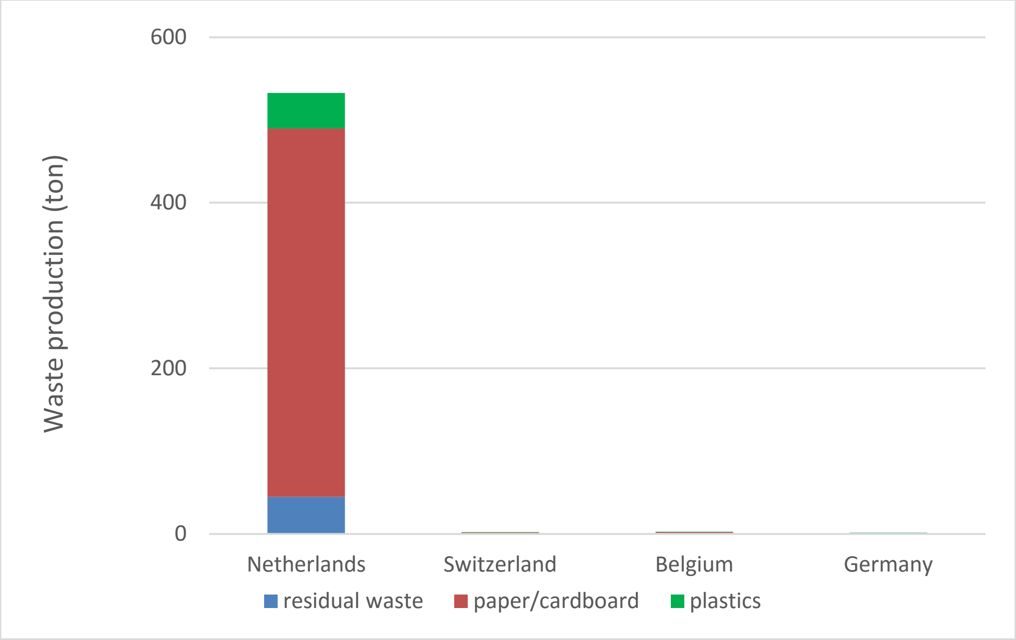


Figure 14: Waste production per country

A total amount of 8 tons of paper was consumed in 2015 at the Headquarter of Utrecht. This is mainly due to the use of paper for marketing.

2.4 Freight

In this category the transportation of goods for We Fashion is taken into account. We have taken the distance from producer to port, from port to distribution centre, and from distribution centre to shops into account.

Most of products are delivered to the Netherlands by boat. An amount of 90 % of all ton.kilometers is transported to the harbour of Rotterdam by boat.

Note that the distance from producer to port is not always the full distance until the producer but the main distance for the trajectory.

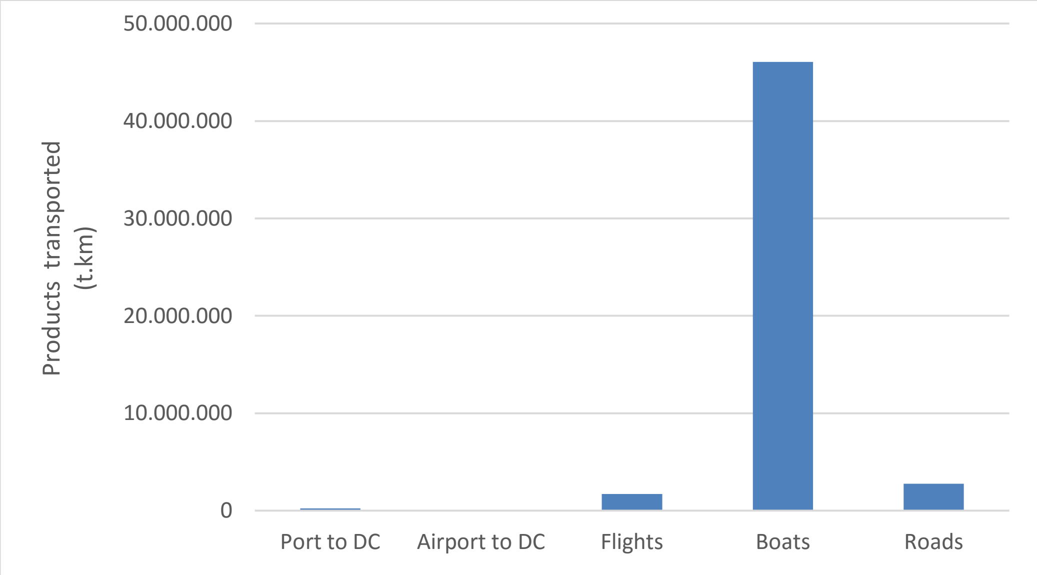


Figure 15 : Products transported from producers (start point) to distribution centrum

The transfer from the DC to the stores required an estimated amount of 249.356 litres of diesel and 9.183 kg CNG in 2015. Transport is done by road. Note that the amounts are estimated based on the distance (km) we have received, the average fuel consumption (liter/km) of the trucks and the amount of clothes transported for WE Fashion by those trucks (%). The amount for Germany was estimated based on the transported amount of clothes, and the location of the shops (km). We have assumed that the amount of clothes is distributed equally from the distribution centre in Essen to all the shops. For the fuel consumption of the trucks, we have taken average values from the Bilan Carbone 7.4 into account. In Switzerland trucks use CNG instead of diesel.

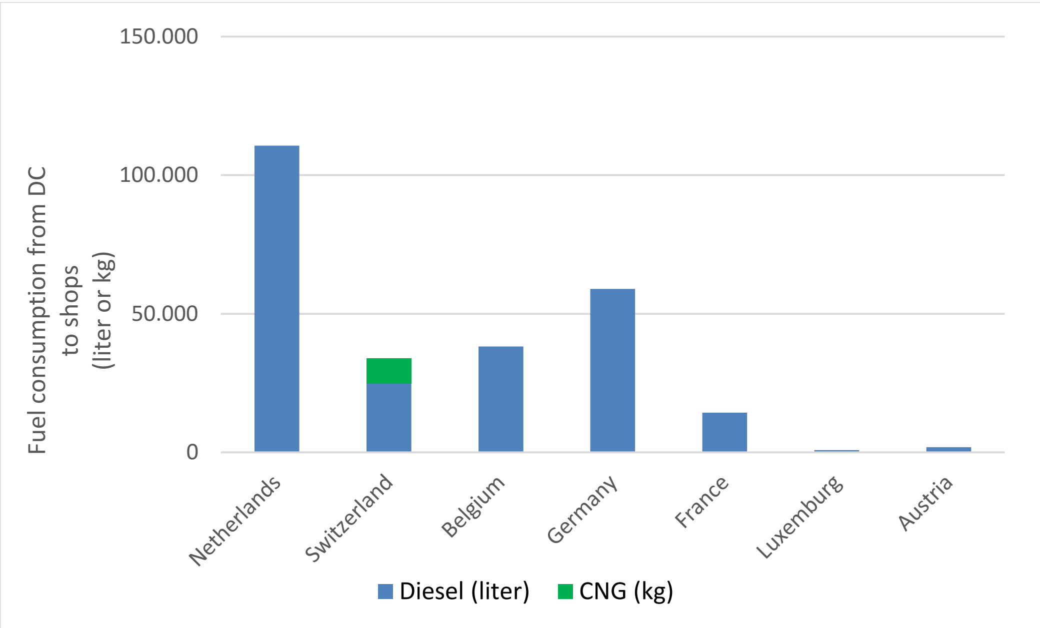


Figure 16 : Fuel consumption for transport of clothes from distribution centre to shops

In the following graph, the fuel consumption per ton of clothes transported is shown. The fuel consumption is lower for Belgium and the Netherlands since distances are lower. Fuel consumption for Germany and France are higher because distances are higher. The fuel consumption for Switzerland is relatively high because the distance is quite high. This might be explained by the fact that the long distance transport is done by efficient and large vehicles, while the distances inside the country are relatively low.

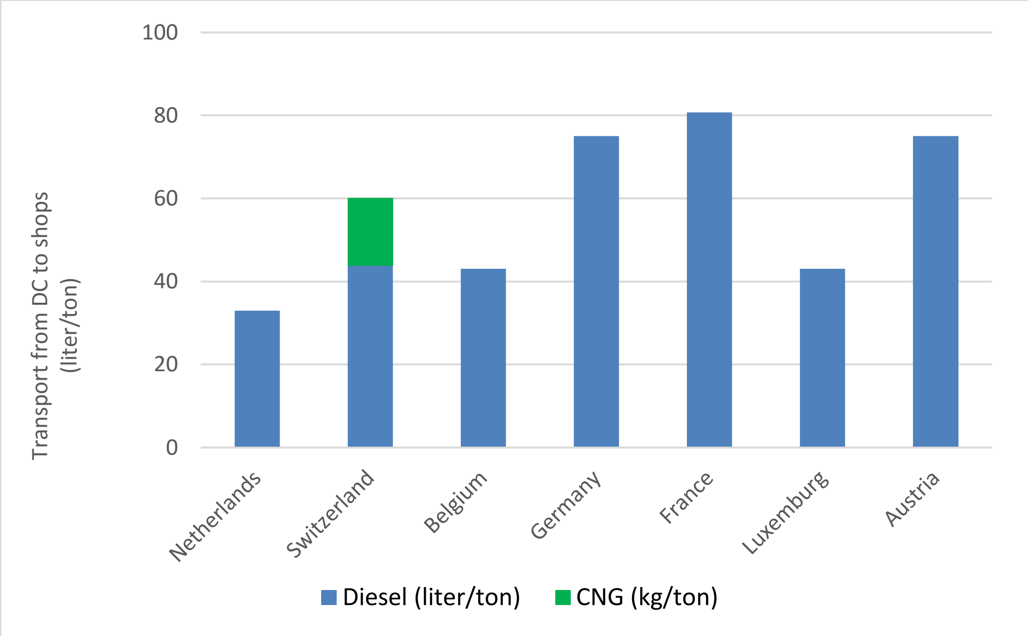


Figure 17 : Fuel consumption from distribution centres to shops *per ton of clothes transported*

2.5 Comparison 2009 – 2015

In the table here below, the evolution of the received data is represented. As can be seen, there is a very large reduction in the fuel use for company cars, gas use and electricity use. The emissions from commuting have however increased. A possible explanation for this can be the fact that less people have a company car, meaning that there is a shift from company cars to private cars for commuting. Business trips on the other hand have increased considerably, as well for flights as for trains.

Table 3. Comparison 2009 with 2015

	Quantity			
Mobility	**2009**	**2015**	**Unit**	**Evolution**
Company cars	155.544	47.428	l	-70%
Commuting	1.999.425	2.517.105	p.km	26%
Business Flights	958.184	2.508.546	p.km	162%
Business Train	24.760	204.407	p.km	726%
Energy				
Electricity	1.765.925	1.103.442	kWh	-38%
Gas	1.364.228	1.244.487	kWh	-9%
Total	**3.130.153**	**2.347.929**		-25%

Note that the amount of degree days was 17% lower in 2014 compared to 2009. This means that it was 17% hotter in 2014 compared to 2009, reducing the need for heating. This partly explains the reduction in natural gas use.

3 Carbon Footprint

3.1 Overall emissions

The total amount of direct emissions of We Fashion is estimated to **10.194** tons of carbon dioxide equivalent (tCO_2e) for the considered scope. This becomes 11.416 tCO_2e if the indirect emissions are included. The error margin is estimated to be +/- 27% (2.791 tCO_2e).

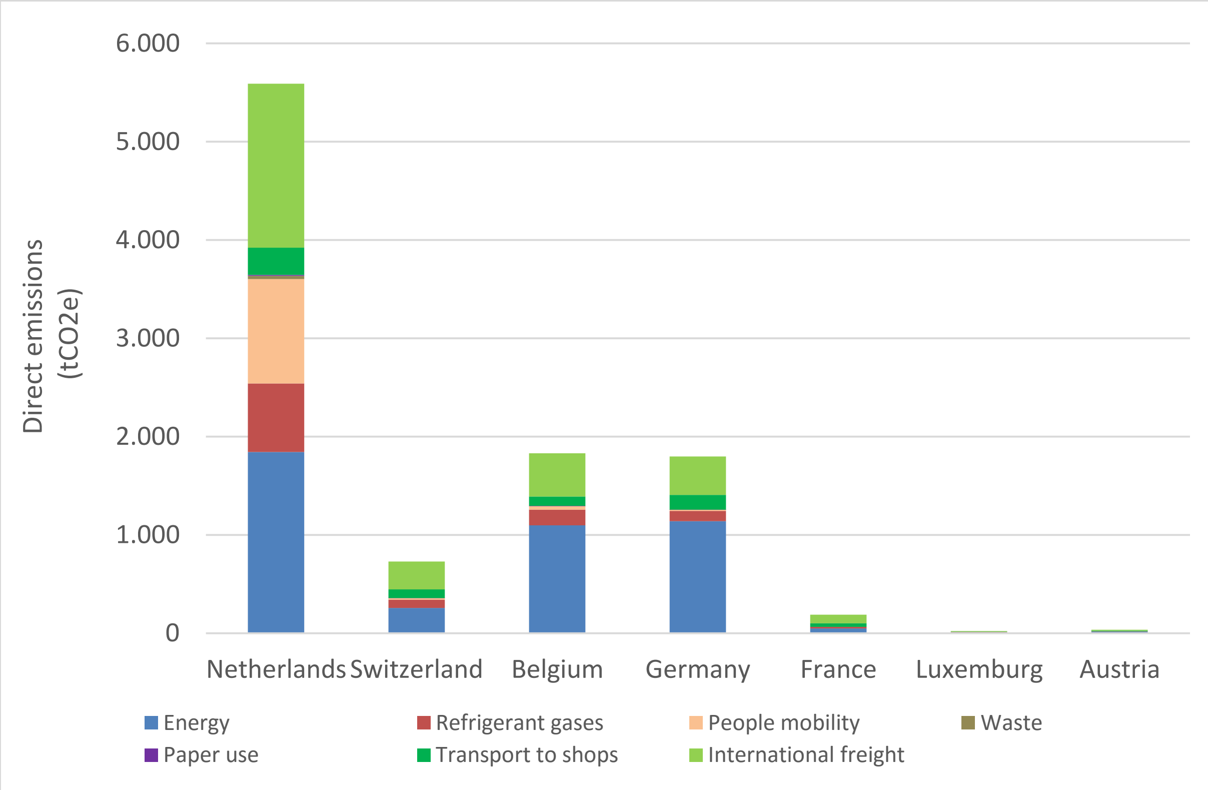


Figure 18 : Overall direct emissions per country

The Netherlands are responsible for 55% of the overall emissions. Switzerland accounts for 7%, Belgium for 18%, Germany for 18%, France only for 2%, while Luxemburg and Austria have a contribution of less than 1%.

Energy is responsible for 43% of the overall emissions. Refrigerant losses account for 10% of the overall greenhouse gas emissions. People mobility (excl. freight) account for 11% of the emissions. Freight accounts for 35% of the overall emission. International freight alone is responsible for 28% of the overall emissions, and distribution to the shops for 6%. The emissions due to waste and paper use are very small compared to the other emission sources. The relative influence of the different emission sources per country can be found in annex.

If we look at the emissions per ton of product delivered to the stores, we see more or less similar values for all countries. People mobility plays a more important role in the Netherlands. This is because there are a lot more employees working in the headquarters. Energy emissions remain however low due to the use of renewable electricity in the Netherlands. Emissions from Belgium and Germany are very similar. The emissions from Switzerland, and Austria are on the average. In the case of Switzerland this is due to a very low emission factor for electricity. In the case of Austria this is due to a high amount of clothes for a relatively small shopping space. The emissions per ton of clothes are very low for France and Luxemburg due to the combination of the previous two factors. France has uses green electricity, and at the same time the amount of clothes per square meter of shopping space is high. Emissions are low for Luxemburg due to the use of green electricity.

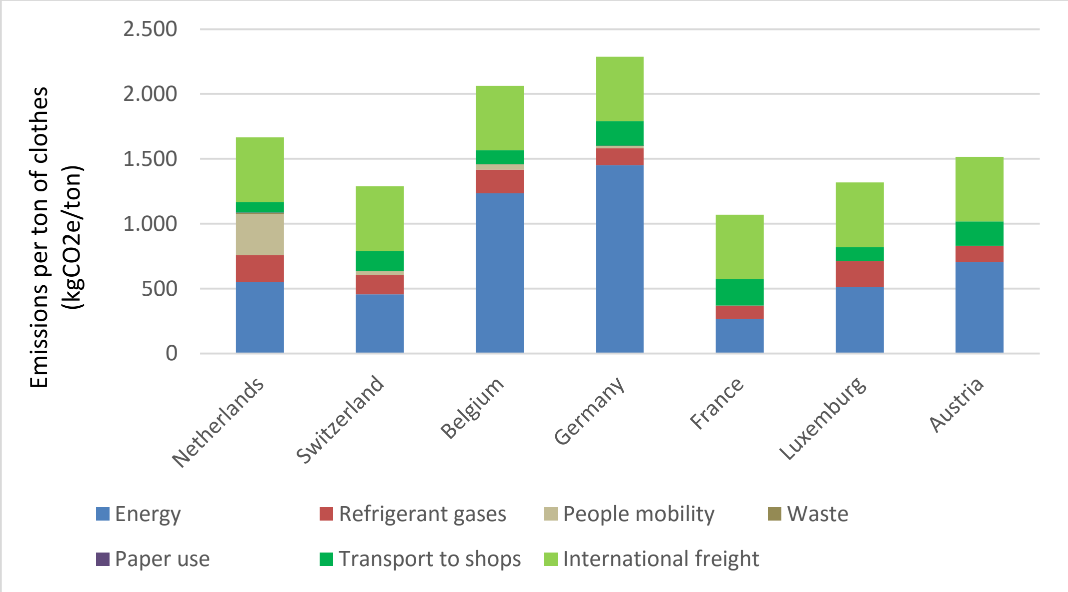


Figure 19 : Direct emissions per ton of product transported

The emissions per square meter of surface area *for shops* are slightly different. Germany clearly has the highest emissions per square meter. This is due to a high emission factor for electricity in Germany because the energy use per square meter is similar to other countries. All other differences are mostly explained by this difference in the emission factor for electricity. The emissions from transport to the shops are high for France, because the amount of square meters is relatively small for the transported amount of clothes. The emissions from the Netherlands are lower than the other countries because of the use of green electricity but a little bit higher due to a lot of people mobility. Emissions from France and Luxemburg are lower due to the use of green electricity.

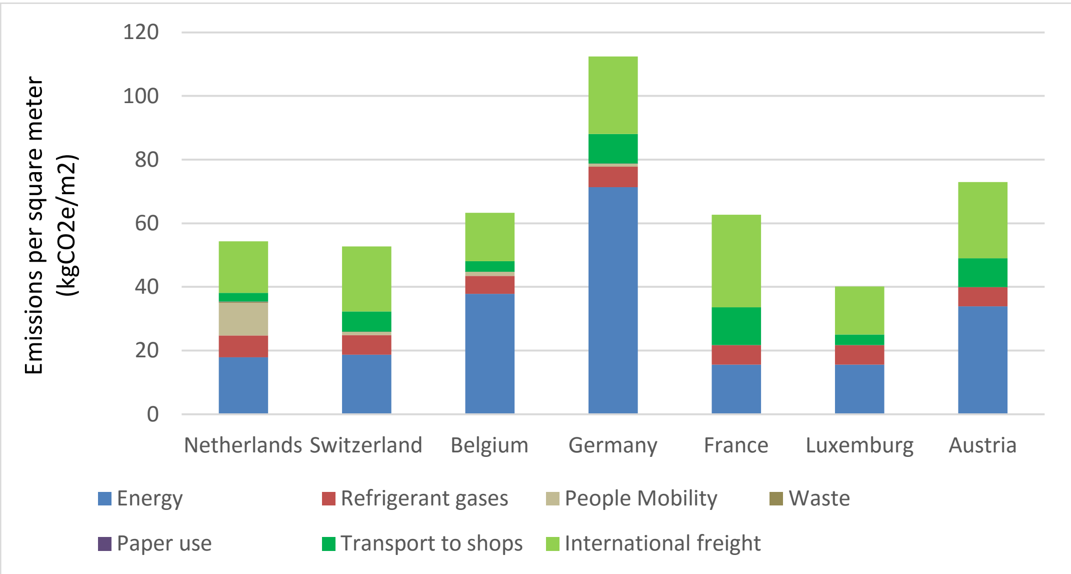


Figure 20 : Emissions per m^2 of shopping area

The average emission per square meter of shopping space is **62 kgCO_2e/m2** for the considered scope. Scope 1 & 2 emissions per square meter are in average **34 kgCO_2e/m2**.

Table 4. Summary of the emissions

Source	Direct emissions		Incl. upstream
	tCO2e	%	tCO2e
Natural gas	2.838	28%	3.380
Electricity	1.570	15%	1.787
Refrigerant losses	1.073	11%	1.073
Company cars (CC)	155	2%	195
Home-work commuting	399	4%	419
Flights	563	6%	588
Train	14	0%	15
Waste	33	0%	33
Paper	8	0%	8
Freight by plane	1.882	18%	1.967
Freight by boat	789	8%	916
Freight by road	870	9%	1.034
TOTAL	**10.194**	**100%**	**11.416**
(TOTAL grey elec)	**(15.462)**		

Comparing 2009 and 2015 greenhouse gas emissions, based on a similar scope, a decrease of 32% in 6 years can be observed. Despite the fact that business travel and home-work commuting has increased considerably in 2015, overall emissions have decreased by 32% This is due to a very high decrease from emissions of company cars, electricity and gas consumption. The decrease for electricity is partly due to the switch to green electricity.

Table 5. Comparison of emissions in 2009 and 2015

	Emissions			
	2009	**2015**	**Unit**	**evolution**
Company cars	406	116	tCO2e	-71%
Commuting	316	371	tCO2e	17%
Business Flights	209	563	tCO2e	169%
Business Train	1	14	tCO2e	1007%
Total	**932**	**1063**		**14%**
Electricity	715	1	tCO2e	-100%
Gas	280	252	tCO2e	-10%
Total	**995**	**254**		**-74%**
Total	**1.927**	**1.317**		**-32%**

3.2 Infrastructure - Energy

Emissions related to the infrastructure are caused by the use of energy and by the leakage of refrigerant losses in airconditioning installations. Remember that the emissions from energy use are responsible for 44% of the overall emissions and refrigerant losses for 11%.

The emissions caused by the use of energy in buildings are clearly dominated by the Netherlands. They are almost exclusively determined by natural gas combustion to heat the buildings since all Dutch sites except from the warehouse use green electricity. Belgium and Germany are the second largest emitters in this category. In Germany it is especially determined by a high emission factor for electricity.

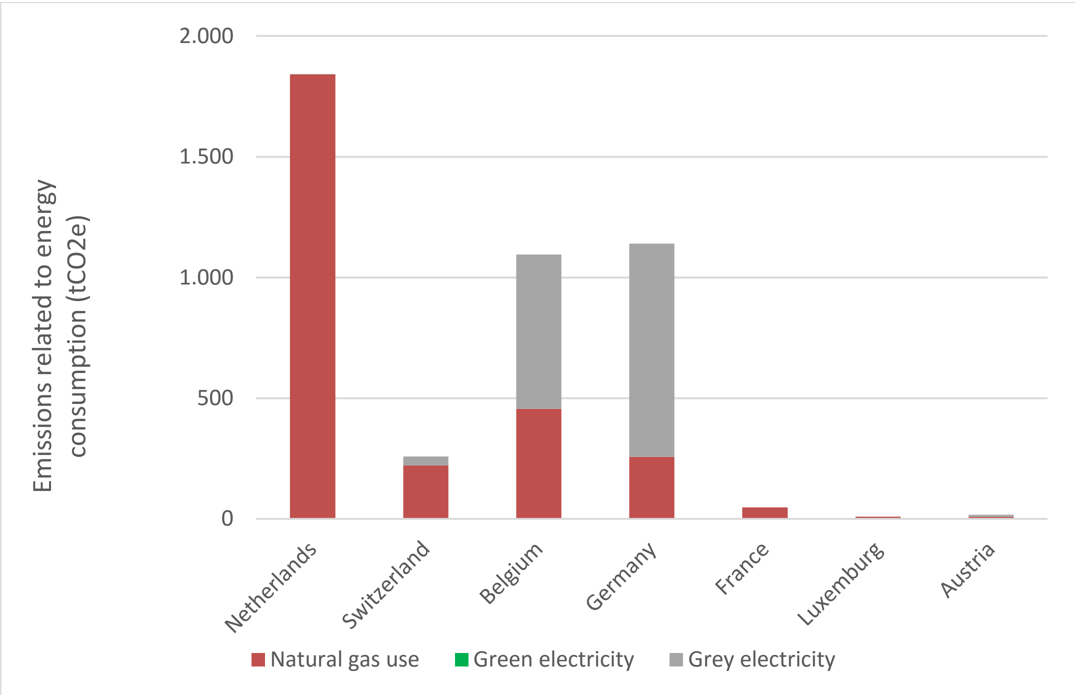


Figure 21 : Emissions related to energy consumption infrastructure

If we look at the relative emissions per square meter of surface area the difference in emission factors for electricity becomes even more obvious. While the emissions for natural gas use remain the same for most countries (they are based on average values), we clearly observe the differences for the electricity mix.

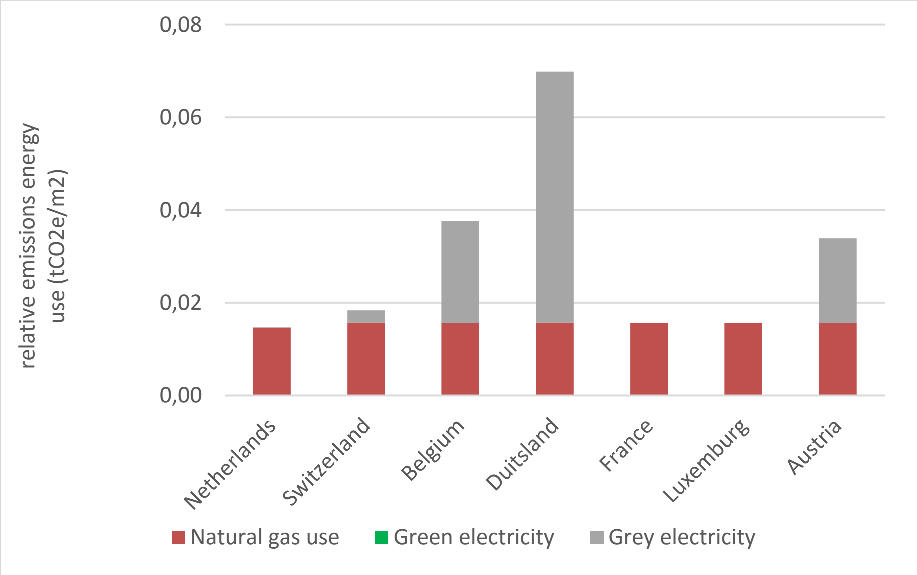


Figure 22 : Emissions energy use infrastructure per square meter (total area)

If we look at the emissions per ton of product sold, Germany stays one of the countries with high emissions, followed by Belgium. Switzerland, Austria and especially France and Luxemburg have low emissions. This is due to a combination of the amount of products sold per square meter, and the emission factors for electricity of the corresponding countries (green electricity for France and Luxemburg).

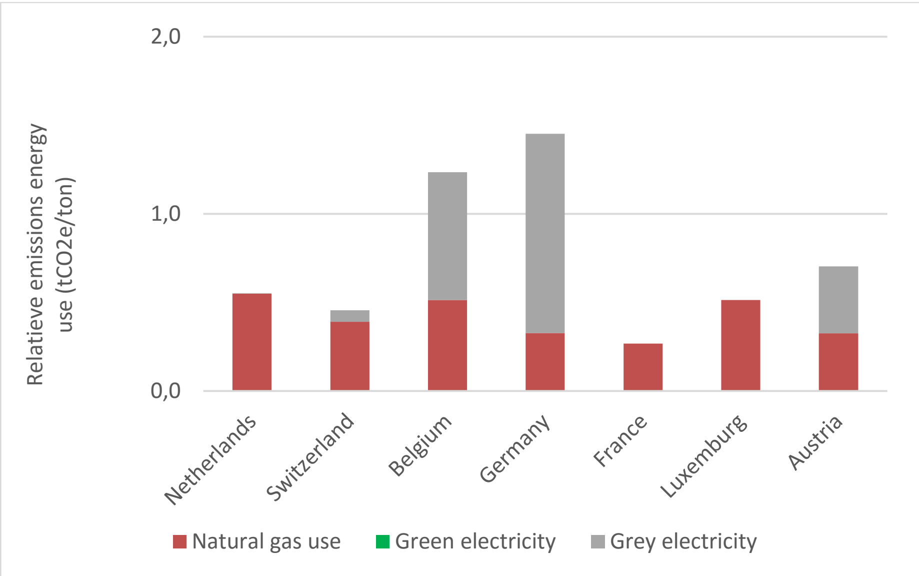


Figure 23 : Emissions from infrastrucuture energy use per ton

3.3 Infrastructure – Refrigerant losses

Emissions from refrigerant losses are linked to the used surface, and therefore they are highest for the Netherlands.

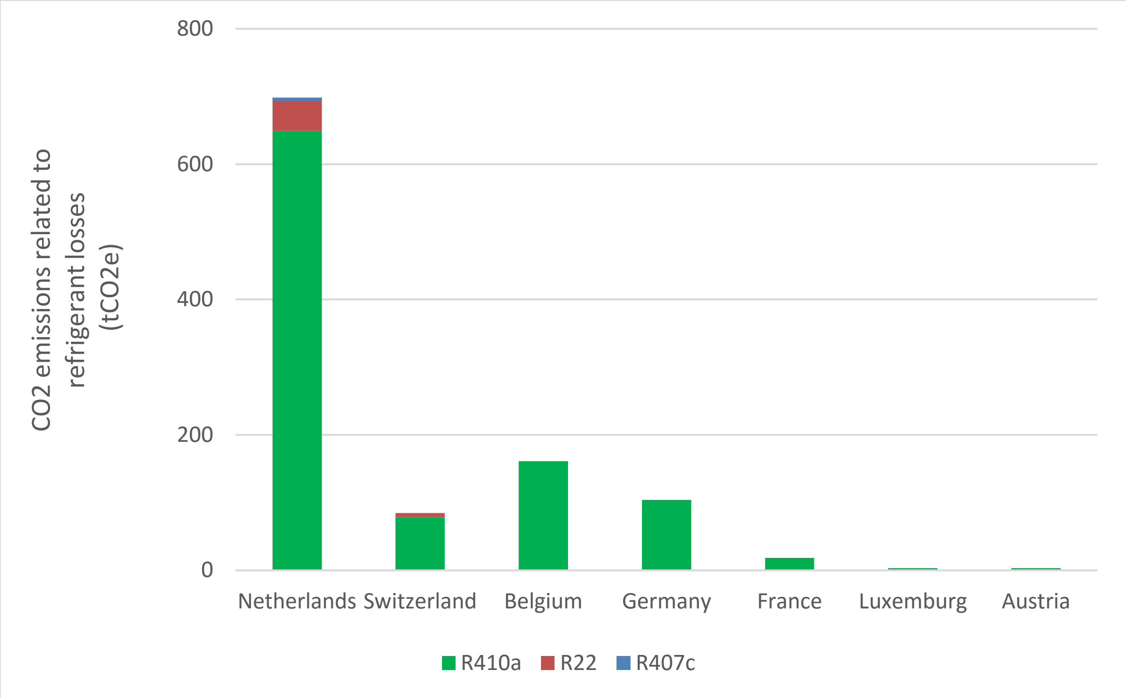


Figure 24 : Emissions from refrigerant losses

The relative emissions from refrigerant losses per square meter are shown in the following graph. They are all more or less the same.

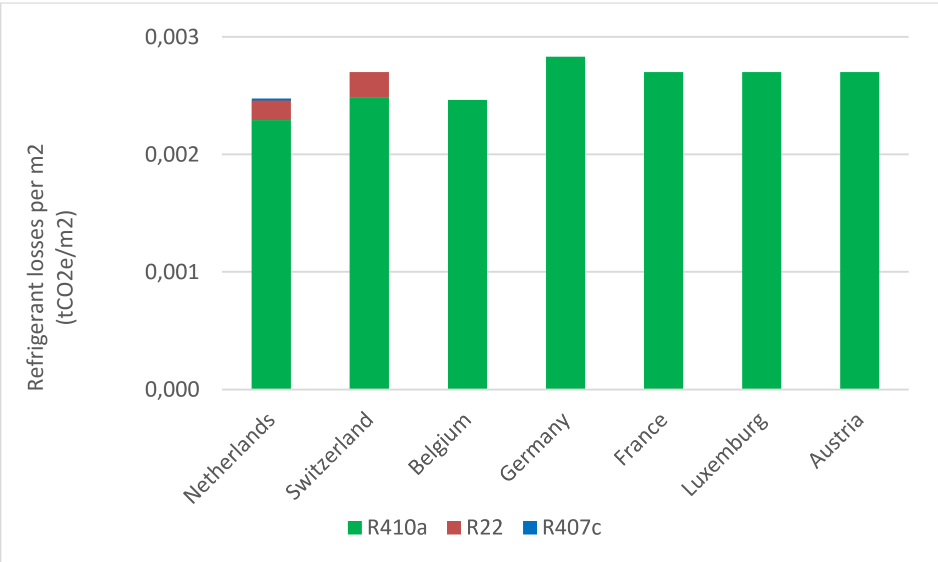


Figure 25. Emissions from refrigerant losses per square meter (total area)

3.4 People mobility

Mobility (commuting, company cars & business travel) is responsible for 11% of the overall emissions. Most of them are due to the business travel (airplane and train), responsible for 51% of the emissions from mobility. Emissions from home-work commuting are also quite high since most employees use their private car for commuting. Almost all emissions related to mobility are attributed to the Netherlands.

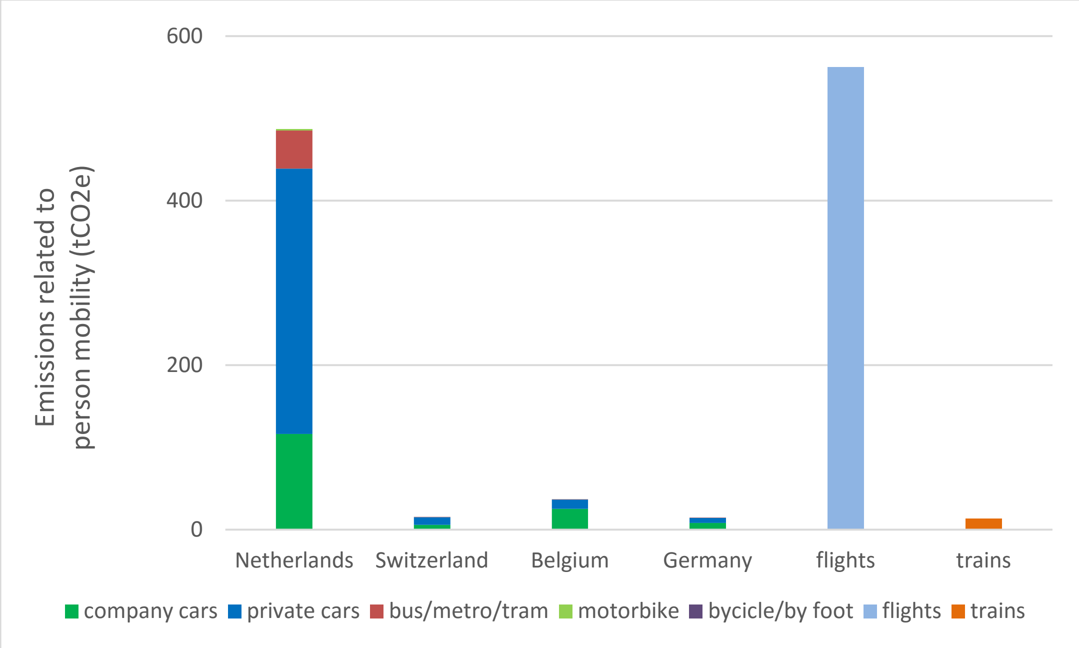


Figure 26 : Emissions from people mobility

Compared to 2009, the number of company cars decreased by half and the related emissions decreased by 70%. Home-work commuting increased by 39%. It could be explained by the decrease of company cars and the employees that need their own car to go to work.

3.5 Waste

The CO_2e emissions are coherent with the waste production per country. A majority is produced in the Netherlands due to the headquarter, warehouse and the distribution centre. Note that waste production from shops are not taken into account.

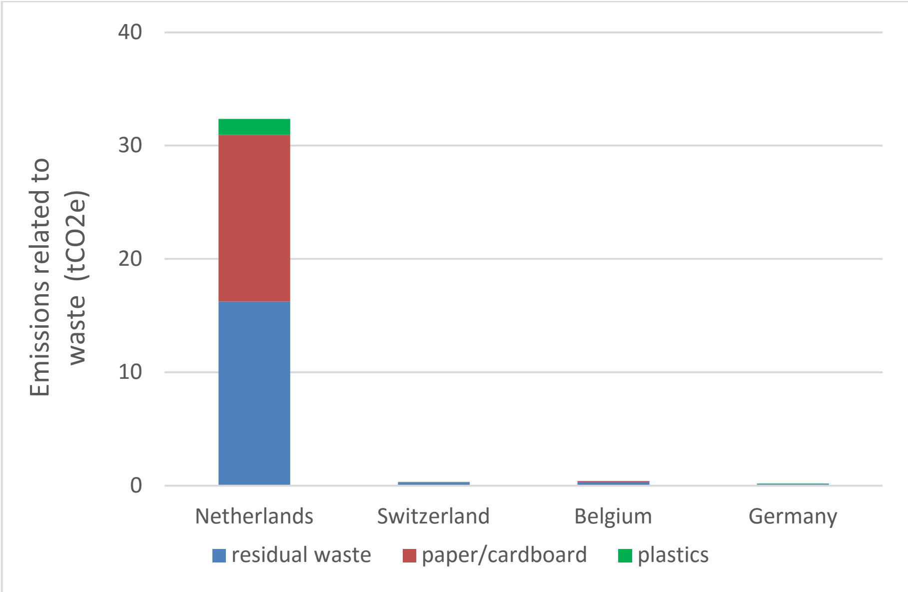


Figure 27 : Emissions related to waste production

Differences are so big, that conclusions remain the same for relative emissions.

3.6 Freight

Even if most of products are transported by boat, flights have the highest climate impact. Transport from producers to port clearly has the biggest impact and is responsible for 91% of the emissions from freight. Emissions from DC to the shops are responsible for 9%.

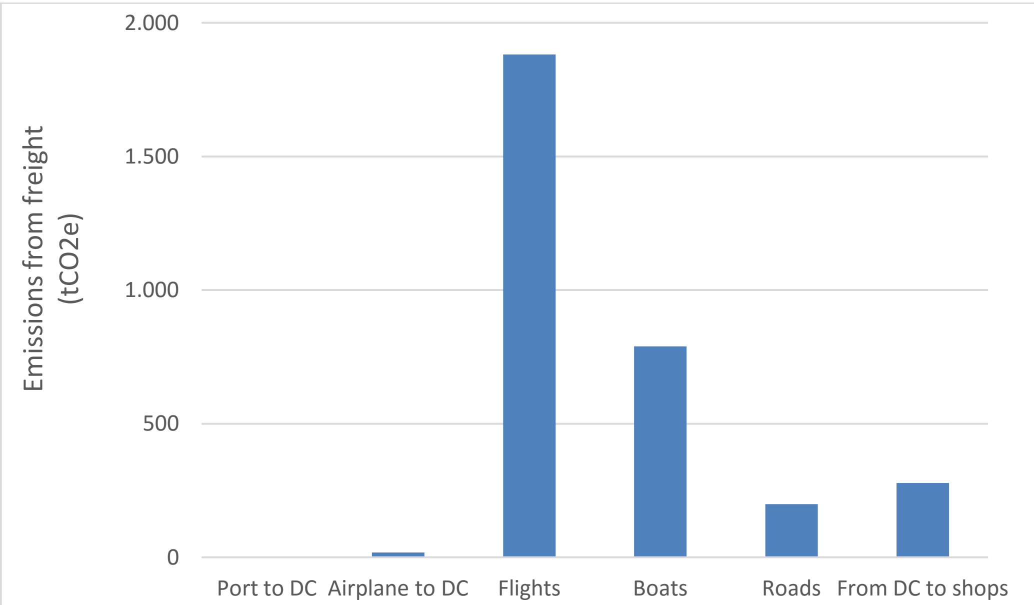


Figure 28 : Emissions related to freight from producer to DC

The emissions from the distribution to the shops arise for 43% in the Netherlands. About 14% of the emissions come from distribution to Switzerland, 15% for distribution to Belgium, 23% for Germany and 5% France. Emissions for distribution to Austria and Luxemburg are together responsible for 1% only.

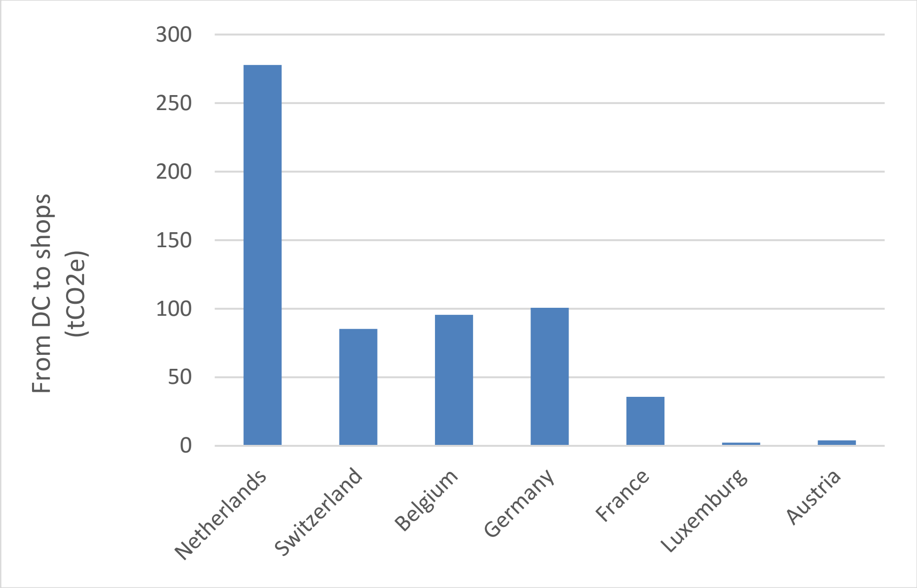


Figure 29 : Emissions between DC and stores

Germany and France have the highest relative emissions per ton of product transported. This is due to the longer distance that has to be travelled. In the case of Switzerland, the emissions are lower although the distance is quite long as well. This is due to efficient long distance transport and the use of CNG for small distribution within the country.

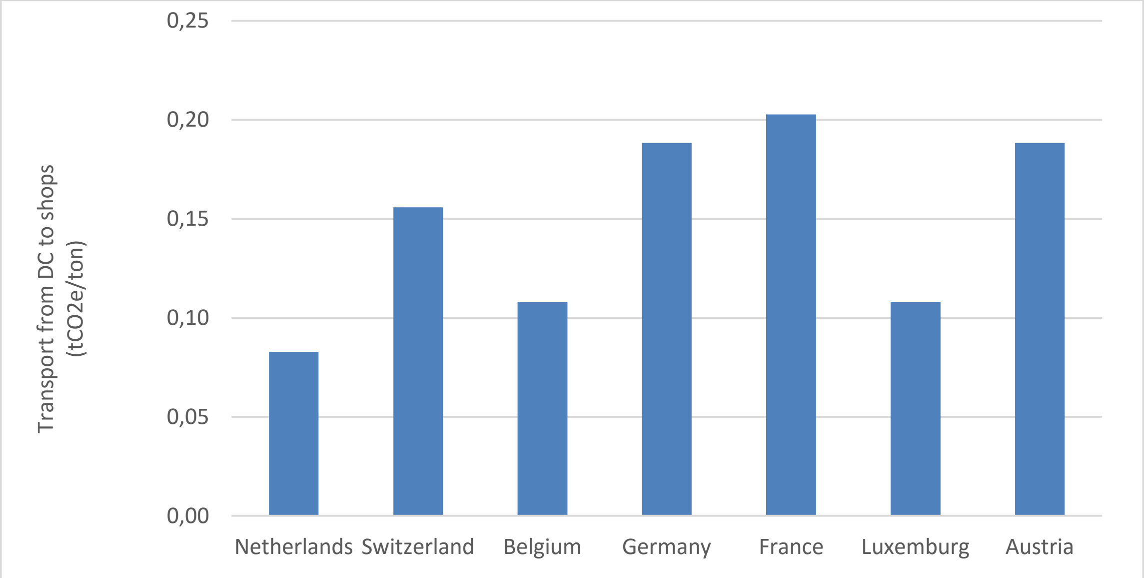


Figure 30 : Emissions freight between DC and schops per ton of product transported

4 Benchmark

The average energy consumption for shops (<5000 m^2) in Brussels is 101 kWh/m^2 of electricity and 115 kWh/m^2 of natural gas. We Fashions shops in the Netherlands are found to consume 102 kWh/m^2 of electricity and 76 kWh/m^2 of natural gas. This means that the electricity consumption is equal to the average and the natural gas consumption is 34% below the benchmark.

Esprit mentions in its 2014/2015 sustainability report an electricity consumption of 432 kWh/m2 for an old store and 98 kWh/m2 for a new store. This equals the average electricity consumption of We Fashion's stores.

For Esprit's headquarters and distribution centre the electricity consumption is respectively 115 kWh/m^2 and 132 kWh/m^2, while the natural gas consumption is respectively 68 kWh/m^2 and 15 kWh/m^2. The split between headquarters and distribution centre is not possible for We Fashion (no separate meter installed). The electricity consumption and natural gas consumption per square meter for the headquarters and the distribution centre together is 54 kWh/m^2 for both. For Esprit this is 34 kWh/m^2 for gas consumption and 126 kWh/m^2 for electricity consumption. Note that the average private office (5000 m^2) in Brussels consumes 150 kWh/m^2 of electricity and 103 kWh/m^2 of natural gas.

H&M communicates about its carbon footprint in its sustainability report and on the Carbon Disclosure Project (CDP). Transport represents 6% and sales 10% of the carbon footprint of garment. Raw materials account for 12%, fabric and yarn production for 36%, the production of the garment itself for 6%, and the remaining (26%) in the use phase. This means for the actual scope that just includes shops and transport, the contribution of freight would be 37%. This fairly equals what is found in this report (35%).

H&M communicated a scope 1 & 2 emission of 97 tCO2/store in 2014, and 1,72 tCO2/million SEK (it was still 2,05 tCO2/million SEK in 2013). This has been reduced to 0,69 tCO_2e/million SEK. Note that their total emissions where 356.373 tCO_2e in 2013 and are now 151.753 tCO_2e for an amount of respectively 3.132 and 3.924 stores. This brings the emissions per store on **39 tCO_2e/store** (scope 1 &2). The scope 1 & 2 emissions per store are **25 tCO_2e/store for We fashion.** This means 46% lower. H&M uses 78% renewable electricity in 2015, while We Fashion uses 64% renewable electricity.

C&A reports on the greenhouse gas emissions of business travel, energy consumption and freight (logistics). They use 45% of green electricity. Logistics is responsible for 26% of their carbon footprint (35% for We Fashion). Reported greenhouse gas emissions per store are 159 tCO_2e/shop in 2013.

Inditex (from amongst others Zara), reports absolute greenhouse gas emissions and emissions per garment released on the market. This is 362 gCO2e/garment in 2012 (scope 1&2 and logistics). The amount of emissions per kg of garment is known and corresponds to 1,76 kgCO_2e/kg of garment. Since the average amount of garment per kg of garment is 240 gram/garment, the emissions per garment are found to be 422 gCO2/garment. Note that the weight of garment varies from 70 grams for underwear to 800 grams for a jeans or even 1.800 grams for a winter jacket. The average weight of garment therefore depends a lot on the type of garment sold.

5 Conclusions

The total direct emissions of We Fashion are 10.194 tCO_2e for 2015, with an error margin of 27%. Total emissions, including indirect emissions are 11.416 tCO_2e. Without green electricity, direct emissions would have been 15.462 tCO_2e.

The scope 1 emissions are 4.066 tCO2e, the scope 2 emissions are 1.571 tCO2e and the scope 3 emissions are 5.779 tCO2e.

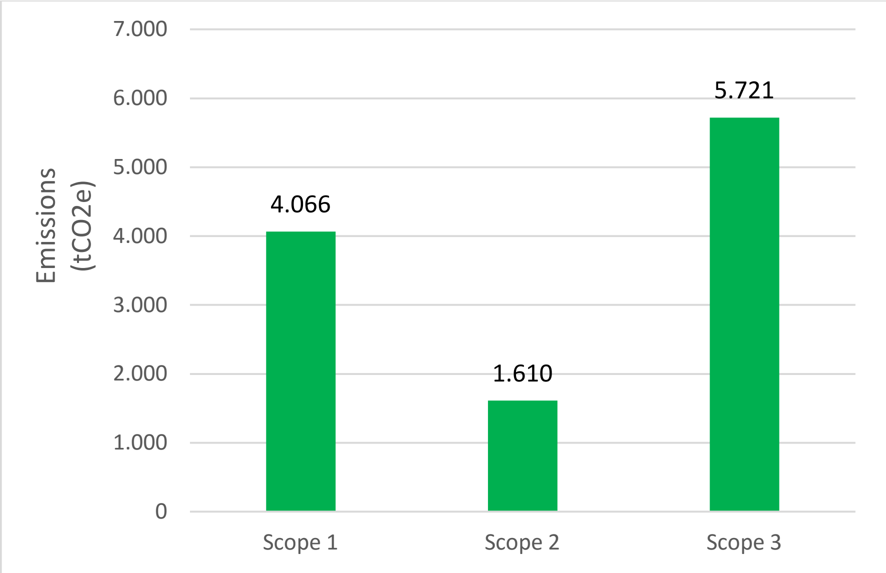


Figure 31: emissions of We Fashion for FY 2014 according to the scopes

This corresponds to an emission of 25 tCO_2e per shop.

The overall emissions of 10.194 tCO_2e correspond to driving 1.421 times around the world with an average car, 3.924 return flights Brussels New York, or the emission reduction of the installation of 3.411 efficient cook stoves in Africa.

Energy use for the infrastructure is the highest emission source, responsible for 43% of the emissions. Freight is the second biggest emission source, responsible for 35% of the emissions. People mobility accounts for 11% of the overall emissions. The infrastructure of the Netherlands alone accounts for 18% of the overall emissions, and international freight is responsible for 28% of the emissions.

The Netherlands are responsible for 55% of the emissions, Belgium for 18%, Germany for 18%, Switzerland for 7% and France for 2%. Other countries have a relatively small contribution to the overall emissions.

The emissions have **decreased by 32%** compared to 2009 in the Netherlands, for the corresponding scope. This is due to reduction in gas consumption, electricity and company cars, and a switch to green electricity.

Concerning the relative emissions per ton of clothes delivered to the shops, the Netherlands have an average emission, Belgium, Germany and Luxemburg have a rather high emission per ton of product delivered, while they are very low for France and Switzerland. This is partly due to low emission factors for electricity, and partly due to a high concentration of clothes per square meter shopping space and efficient transportation.

Emissions per square meter of shopping space give a different image. Germany has the highest emissions per square meter. Belgium, France, Luxemburg and Austria have a medium high emission per square meter, while the Netherlands and Switzerland have the lowest emissions per square meter.

The error margin on the results is quite high. For a large amount of the actual emissions, assumptions had to be made (e.g. energy use for offices and shops in other countries than the Netherlands, some parts of freight).

Therefore one of the important next steps for the future is to enhance the data collection in order to obtain more accurate results that will allow a better follow up of emission reduction efforts. Overall conclusions of this report will however stay the same.

Reduction efforts should focus on energy use in the shops and freight. Results for natural gas consumption are already good, and results for electricity consumption are within average values. This shows that reduction efforts can focus on the electricity consumption in the shops. A quick win to reduce the emissions from energy use is a further expansion of the use of green electricity, and this especially in the countries with a high emission factor for electricity, such as Germany and to a lower extend Belgium.

Reduction efforts related to freight are especially related to international transport by airplane. Although most of the international freight is already done by ship, almost all emissions are related to transport by airplane. This means that even a small extra modal shift from airplane to ship has a large emission reduction potential.

Note that the social cost of We Fashion’s emissions to society is estimated to be 1.182.736 euro as estimated by the Stern Review. This represents the cost for society to control or repair the damage caused by the total (direct + indirect) emissions of We Fashion. The cost to offset those emissions now by supporting emission reduction initiatives in developing countries is estimated to be 45.602 euro.

6 References

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7 Key terms

Carbon dioxide equivalent (CO_2e). An internationally accepted measure that, by means of agreed conversion factors, expresses the global warming capacity of different greenhouse gases in terms of the amount of carbon dioxide that would have the same global warming potential (GWP).

Greenhouse gas (GHG). Any gas, such as carbon dioxide (CO_2), methane (CH_4) or water vapour (H_2O) that gives rise to a greenhouse global warming impact.

Radiative forcing. In climate science, defined as the difference between the incoming radiation energy and the outgoing radiation energy in a given climate system. A positive forcing (more incoming energy) tends to warm the system, while a negative forcing (more outgoing energy) tends to cool it. Possible sources of radiative forcing are changes in insolation (incident solar radiation), or the effects of variations in the amount of radiatively active GHG gases present.

FY. Financial/Fiscal Year

v.km = vehicle.kilometres

p.km = person.kilometers

8 Annex

Table 6. Direct emissons per country

	Netherlands		Switzerland		Belgium		Germany		France		Luxemburg		Austria	
	tCO2e	%	tCO2e	%	tCO2e	%	tCO2e	%	tCO2e	%	tCO2e	%	tCO2e	%
Energy	1.843	33%	258	35%	1.096	60%	1.139	63%	47	25%	9	39%	17	46%
Refrigerant gases	698	12%	85	12%	161	9%	104	6%	18	10%	3	15%	3	8%
People mobility	1.063	19%	16	2%	37	2%	15	1%	-	0%	-	0%	-	0%
Waste	32	1%	0	0%	0	0%	0	0%	-	0%	-	0%	-	0%
Paper use	7	0%	0	0%	0	0%	0	0%	-	0%	-	0%	-	0%
Transport to shops	278	5%	88	12%	96	5%	148	8%	36	19%	2	8%	5	12%
International freight	1.668	30%	281	39%	441	24%	391	22%	88	46%	8	38%	12	33%