



AARSTIDERNE

Aarstiderne's
CO₂ Reporting
2016 - 2020





CO2 accounts for Aarstiderne's box scheme business 2016 - 2020

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Introduction

1.1 Why a CO2 report?

At Aarstiderne, the quarterly and yearly CO2 accounts are very important management tools allowing the company to work focused on bringing down the CO2 emissions through ever better practices. This is the 2020 report, and it shows the development of the CO2 emissions from 2016 to 2020. The CO2 emissions in tonnes increases 5% over the years due to higher revenue, but in terms of CO2 emissions per DKK'000 of revenue, it decreases by 19%.

1.2 Sources of CO2 emissions

- Inbound freight (from supplier to our packing facility in Barritskov)
- Intermediate transport (from Barritskov to local terminals)
- Distribution (from local terminals to customers)
- Energy (electricity, agro diesel, oil, gas, and coolant)
- Packaging (styrene, in-liner, plastic cups, flow-pack plastic, absorber, etc.)
- Paper (newsletters, recipes, copying paper, activation campaigns, etc.)
- Commuting (cars or public transportation)
- Company travels (cars (private or company), train, plane, and overnight stay).

The CO2 footprint accounted for includes issues from picking up goods at a supplier and all the way to the mealboxes arrives at the doorstep of the customers. The CO2 emissions from the actual production, i.e., in the field, the stable, the greenhouse, the dairy, the vegetable packing room, the mill, etc. are not included. Packaging of products done by Aarstiderne is included, but not packaging used by suppliers.

Transport of goods is the heaviest factor in the CO2 accounts. Combined, inbound freight, intermediate transport and distribution make up 58% of the total emission. If the transport of people, i.e., company travels and commuting are added, the number is 64% – two thirds of the total emissions. Consumption of energy such as electricity, gas, diesel, oil, and coolant makes up 21%, packaging 13% and paper 2% of the total CO2 emissions.

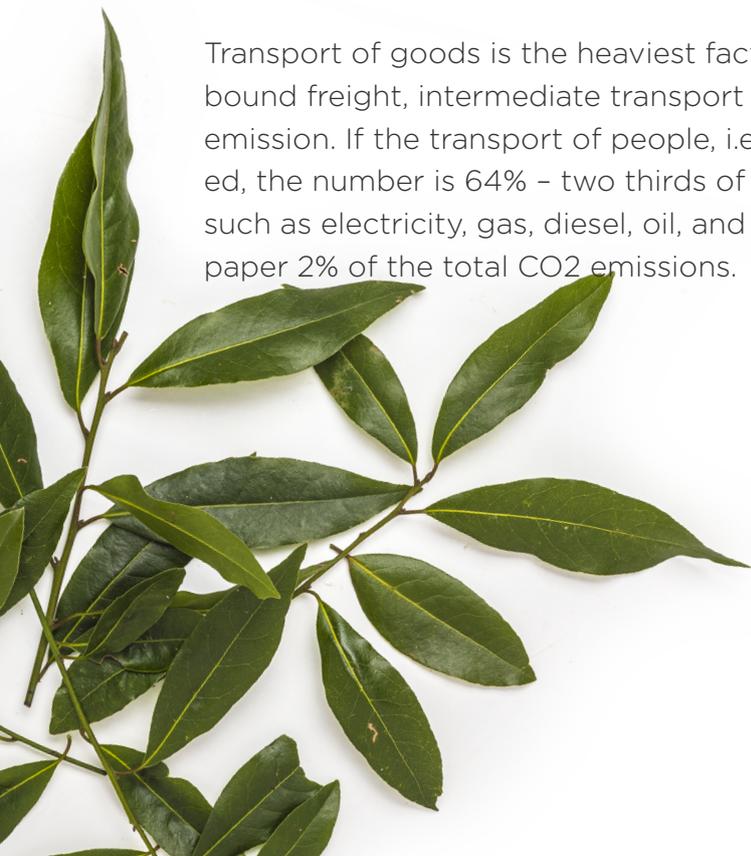
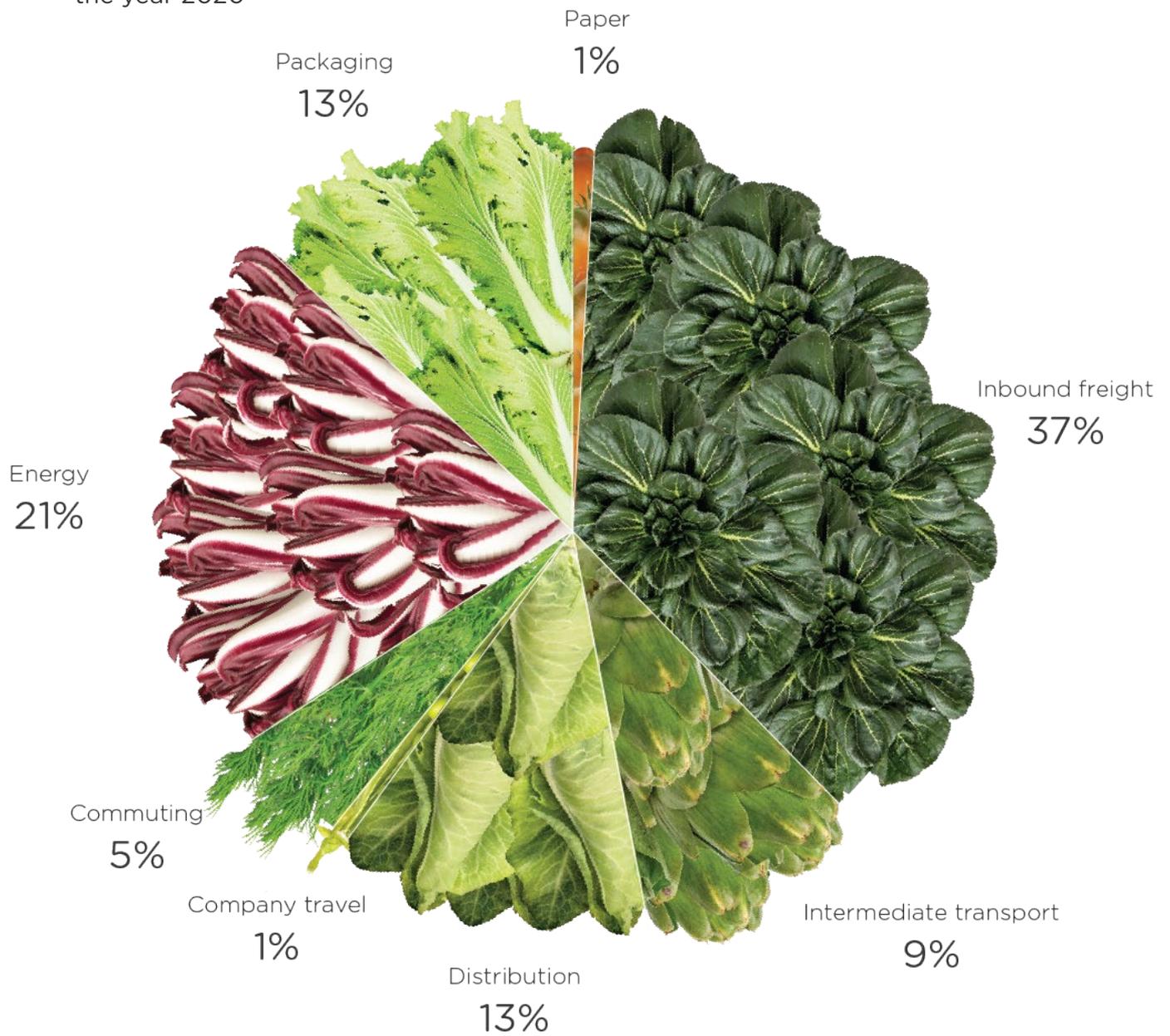




Figure 1: Per cent distribution of the CO2 emissions for the different categories in the year 2020





Global warming and CO2 equivalents

FACT BOX

CO₂ plays a lead role in global warming. The presence of CO₂ in our atmosphere means that the atmosphere blocks Earth's heat dissipation. Instead, a part of the heat is returned to the surface of the earth and this is the essence of the greenhouse effect. Too high a concentration of CO₂ in our atmosphere makes the temperature rise excessively and the result is global warming.

But CO₂ is not the only contributing factor to global warming. Other greenhouse gasses such as methane, nitrous oxide, and freon are also contributing factors. They do not, however, contribute with equal weight and therefore each of the gasses' contributing factor is calculated in so-called CO₂ equivalents (CO₂e). For example, the emissions of 1 kg methane

have the same impact as 25 kg CO₂. Hence, 1 kg methane equals 25 kg CO₂ equivalents, while freon is as high as 1,300 CO₂ equivalents. Using the CO₂ equivalents as measuring unit makes it possible to compare the pollution of the different gasses.

In this report, all calculations are based on CO₂ equivalents (CO₂e) as provided from the think tank CONCITO (see appendix C). The calculation of CO₂e emissions are estimated for a 5-year period (2016-2020).



2. Key figures

Table 1 shows the development of CO2 emissions in kilos from the various sources in the years 2016-2020 as well as the distribution of these.

The table indicates a relatively stable percentage of distribution with only a few fluctuations. In 2020 the share of inbound freight and energy increased compared to 2019, while company travel and commuting percentage has decreased.

The total kg CO2 emissions have increased steadily over the years but have decreased the past 2 years. 2020 has been especially influenced by the COVID-19-situation - this is described more detailed below.

2.1 Decrease in total CO2 emissions during growth

As revenue increases the total CO2 emissions increase; More boxes produced, more employees, more km on deliveries, more packaging, more cooling etc. This pattern seems to change now. From 2019 to 2020 the numbers show a small decrease in CO2 despite a significant increase in revenue.

Many initiatives have been taken to reduce the CO2 emissions while growing the business. They are described throughout this report.

When measuring our CO2 emissions in this report, four factors repeat themselves in our methods of measuring:

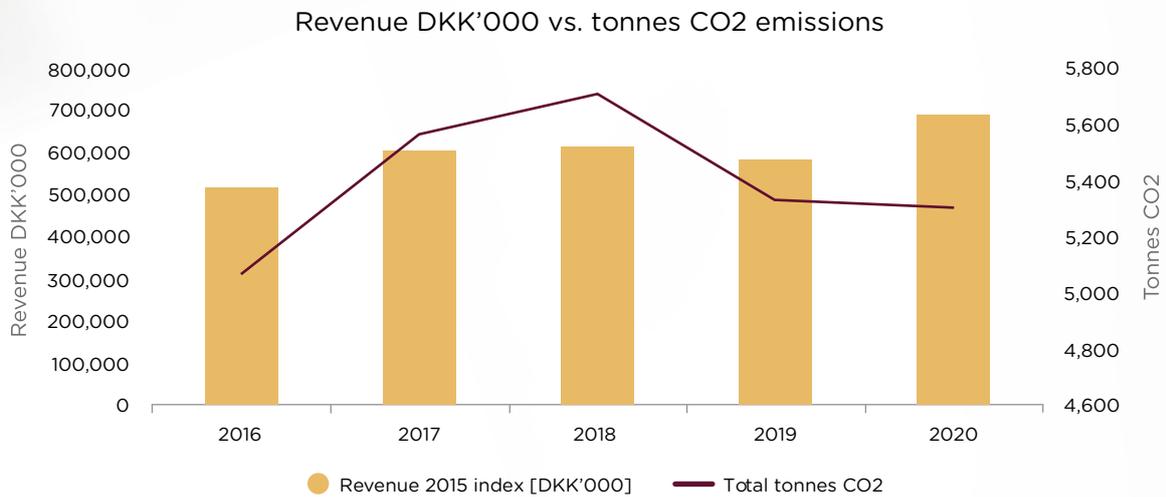
- Total kg CO2 emissions
- Per cent share of the total CO2 emissions
- CO2 emissions per delivery
- CO2 emissions per DKK'000 of revenue.

2016-2020	2016		2017		2018		2019		2020	
	Kg CO ₂	%								
Inbound freight	1.808.231	35,7%	1.974.892	35,5%	2.209.396	36,6%	1.810.354	33,9%	1.974.050	37,2%
Intermediate transport	371.905	7,3%	486.989	8,7%	503.306	8,8%	436.713	8,2%	456.447	8,6%
Distribution	907.193	17,9%	1.033.559	18,6%	737.317	12,9%	683.838	12,8%	670.157	12,6%
Company travel	144.357	2,8%	188.231	3,4%	173.985	3,0%	156.232	2,9%	64.408	1,2%
Commuting	251.429	5,0%	299.025	5,4%	356.755	6,2%	378.883	7,1%	248.947	4,7%
Energy	1.069.569	21,1%	993.740	17,8%	1.082.211	18,9%	1.053.181	19,7%	1.121.556	21,1%
Packaging	451.713	8,9%	508.922	9,1%	572.529	10,0%	730.666	13,7%	692.922	13,1%
Paper	64.141	1,3%	83.276	1,5%	83.424	1,5%	87.604	1,6%	78.052	1,5%
In total	5.068.538	100,0%	5.568.634	100,0%	5.718.923	100,0%	5.337.471	100,0%	5.306.440	100,0%



2. Key figures - continued

Figure 2: Total kg CO2 emissions compared to revenue



2.2 Decrease in emissions per DK´000 of revenue

Figure 1 and table 1 show the distribution of our total CO2 emissions. Table 2 shows the remaining factors - i.e., total tonnes CO2, kg CO2 per delivery and per DKK´000 of revenue (measured in 2016 index).

Sales grew 29% over the past five years while CO2 emissions increased with 5%. This shows that there is an important scale of economy on the CO2 emissions in Aarstiderne, when using the production and distribution facilities optimally. Table 2 shows a relative stable CO2 emissions per delivery over the years 2016 - 2019 whilst there is a noticeable decrease in 2020.

Also, when looking at kg CO2 per DK´000 of revenue the emissions in 2016 were 9,61 kg CO2 per Dkk´1000 and in 2020 this number was 7,81 kg CO2 i.e., 19% lower.

2.3 Distribution of CO2 emissions per delivery and per DKK´000 in revenue

As shown in figure 3. especially the emissions from intermediate transport, distribution and packaging are contributing to the lower emissions, when omitting the areas highly affected by COVID-19 such as commuting, and company travels.



2. Key figures - continued

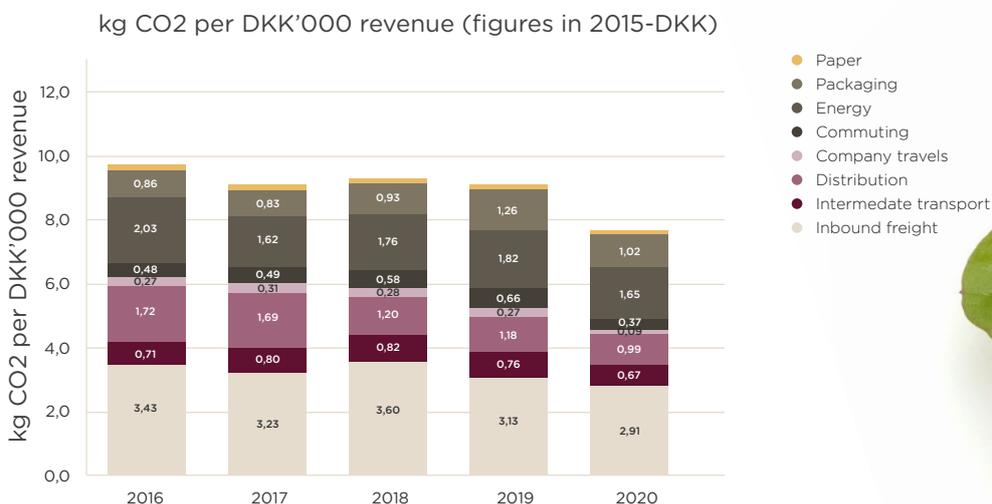
Figure 2: Total kg CO2 emissions compared to revenue

Revenue and CO2 emissions	2016	2017	2018	2019	2020
Revenue 2015 index [DKK'000]	527.336	612.338	613.597	577.740	679.030
Index (revenue compared to 2015)	100	116	116	110	129
Total tonnes CO2	5.069	5.569	5.719	5.337	5.306
Index (development of kg CO2)	100	110	113	105	105
Kg CO2 per delivery	3,40	3,28	3,32	3,34	2,88
Index (development of kg CO2 delivery)	100	96	98	98	85
Kg CO2 per DKK'000 revenue	9,61	9,09	9,32	9,24	7,81
Index (development of kg CO2 per DKK'000 revenue)	100	95	97	96	81

Figure 3: The emissions of different sources measured in kg CO2 per delivery



Figure 4: The emissions of different sources measured in kg CO2 per DKK'000 of revenue





3. Transport of goods

Transport by truck emits 0.107 kg CO₂ per ton*km, whereas transport by ship only emits 0.00243 kg CO₂ per ton*km. It may therefore be CO₂ reducing to pick up goods that were produced close to port areas in the Dominican Republic or Argentina as opposed to transporting them with a truck from e.g., Southern Italy (ship transport from Argentina represents close to the same emission as truck transport from Nantes in France – see appendix B about types of transport). The relatively low emission from ship transportation is evident in figure 5, which also explains why exotic fruits in the boxes are far from the largest climate culprit.

The transport from Italy can be done by freight train, when possible, considering timeliness and freshness of the products. Due to major construction work on this route, it has not been possible to do this for several years, but from 2019 the route has been reopened though not visible in the CO₂ figures yet. The CO₂ emissions from freight per DKK´000 revenue in 2020 are at the lowest level in five years. Figure 5 describes inbound freight only. Figure 6 shows the fluctuations in inbound freight, intermediate transport, and distribution throughout the years.

The inbound freight contribution to CO₂ emissions has decreased in 2019 and further in 2020. Intermediate transport and emissions from distribution have also decreased in relative terms.

The road carriers monitor their driving patterns for specified periods of time, which allows to calculate the number of kilometres driven for each customer. A recent analysis shows that the number of kilometres driven between deliveries is reduced by approx. 40% from 2015 to 2020. The main reason is a higher number of customers, but strong focus on route optimisation, phasing out Thursday deliveries, driving in less traffic at night-time, etc. have also impacted to the positive development.

In December 2019, Aarstiderne acquired a small electrical truck. The truck runs in Copenhagen greater area, delivering company fruit, goods to the farm shops etc. Also, a small part of the company fruit is handled by Chainge – a last mile electrical bike delivery company. Furthermore, one hauler (Nordic Transport and Logistics) has invested in an electrical van running routes since Autumn 2020. This is still too early to be visible in the CO₂ figures, but will have an impact in 2021.



3. Transport of goods - continued

Transport of goods

FACT BOX

In this report, distinction is made between transport of goods and transport of people. Transport of goods comprises inbound freight, intermediate transport, and distribution. The transport of people, which comprises company travels and commuting, represents a much smaller share.

Goods are transported from suppliers in Denmark and abroad to the packing facilities in Barritskov either by truck, ship, or train.

Figure 5: Inbound freight by truck, ship and train - kg CO2 emissions per DKK'000 of revenue

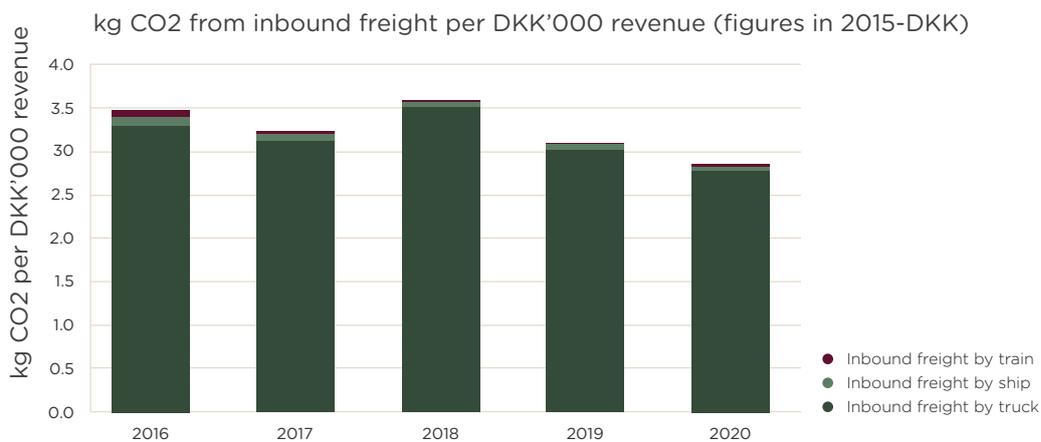
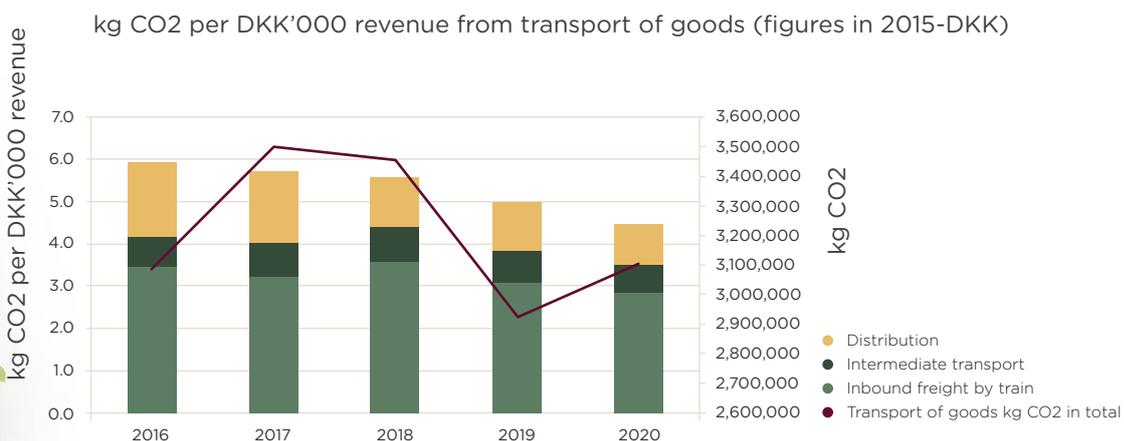


Figure 6: Development in kg CO2 from transport of goods per DKK'000 of revenue (2015 index)





4. Transport of people

In 2020, nothing is “as usual” due to the COVID-19 pandemic. All employees with jobs that could be carried out from home, have been asked to do so. The offices have been almost empty for most of the year. The amount of commuting has therefore been estimated to be one third in Q2 and half of the normal in Q3 and Q4. Likewise, the use of company cars has been estimated to be at a lower level.

From 2020, all new company cars will be either hybrid or fully electric. From Q4-2020 the accounting thus includes 2 hybrid cars. In the calculations the cars are estimated to have CO₂ emissions at a level 15% lower than a diesel car, though this is highly influenced by driving pattern.

Due to the unusual COVID-19-situation the emissions from personal transport and company travels are significantly lower in 2020. This is expected to continue somewhat into 2021. Also, the learnings from holding many more meetings online and working from home will be used when possible both in terms of cooperation with colleagues and employee desires.

Figure 7: kg CO₂ emissions from transport of people and overnight stays





4. Transport of people - continued

Transport of people

FACT BOX

Transport of people includes, for example, commuting, the daily trip to and from work. In 2015 and again in 2018, employees were asked how far they must go for work and how they get to work (by diesel car, petrol car, car-pooling, public transport or bicycle or on foot). The number of employees was multiplied with the average transport pattern. Therefore, the CO₂ emissions from commuting rises proportionally with the number of employees.

Transport of people also covers any travelling by air and train plus overnight stays that employees need in connection with work trips and meetings. Any work-related driving in private cars or company cars in addition to daily commuting is also included.



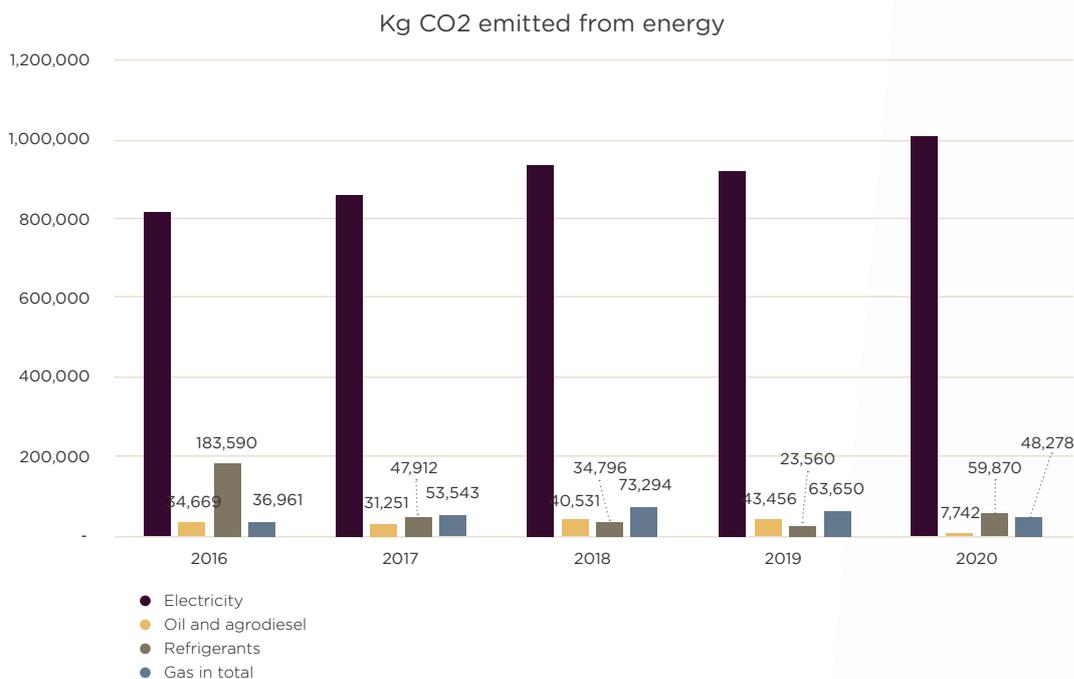
5. Energy

Consumption of electricity is by far the biggest of the energy sources due to the cooling facilities needed in both pack house and terminals; figure 8.

Looking at the CO2 emissions from energy per DKK'000 in revenue the economy of scale is visible (figure 9). On emissions from energy and refrigerants there is a downward trend with a slight increase from 2017 - 2019. 2020 shows a clear drop in the emissions due to a lower level of electricity used per DKK'000.

From 2020 certified sustainable electricity corresponding to our use of electricity will be used.

Figure 8: kg CO2 emissions from energy



Energy

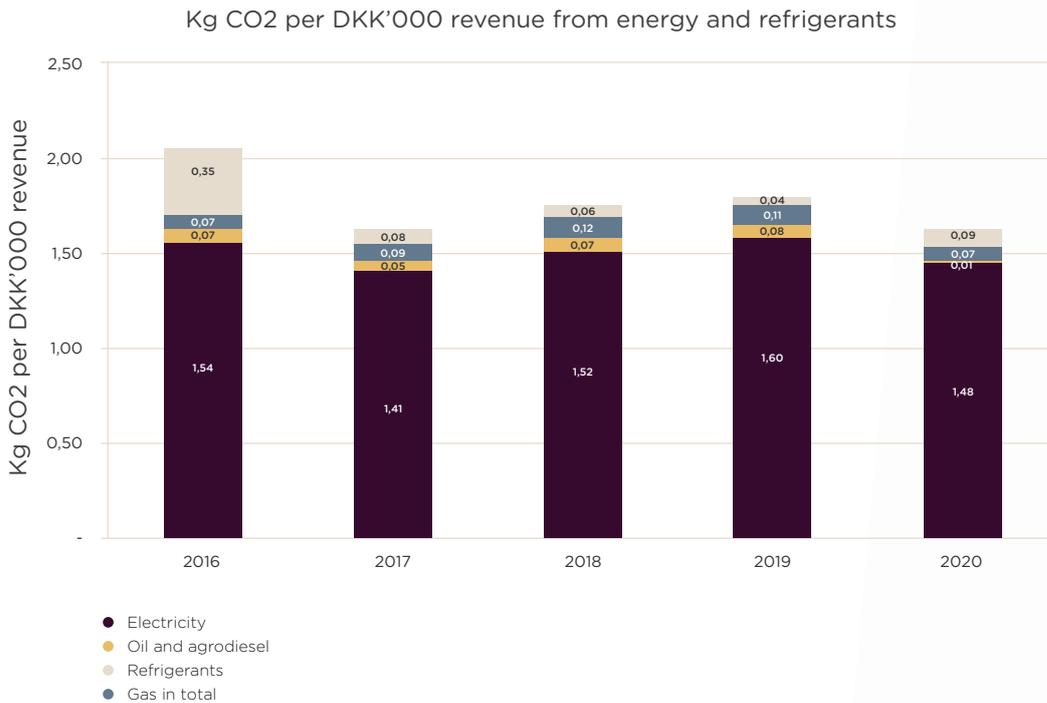
FACT BOX

Energy includes the consumption of electricity at our different locations, agro diesel (for agricultural machines) and oil for an oil burner that takes over if the woodchip fired installation is out of order. Energy also covers coolants for the cooling facility as well as natural and bottled gas used for heating, forklifts, and kitchens.



5. Energy - continued

Figure 9: kg CO2 per DKK'000 of revenue from electricity, agro-diesel, oil, gas and refrigerants



CO2 as coolant

FACT BOX

CO2 is one of the original coolants widely used, but it was phased out with the arrival of synthetic coolants around Second World War. As it became clear that the CFC coolants had a catastrophic effect on the ozone layer and that the substitutes HCFC and HFC coolants contributed to global warming, there was a renewed interest in CO2 as a coolant.

The CO2 emissions from coolants depends highly on the need to fill the facilities with coolants. In 2016 a new cooling facility at Barritskov was filled with coolants hence the high level. Earlier the cooling facilities mainly used freon, but since the emission factor is high on freon (se appendix C - emissions factors), the coolant was changed to CO2 at the end of 2017 and beginning of 2018.



6. Packaging

Only packaging used at Aarstiderne is included in this report, and not the packaging used by suppliers.

The total CO2 emissions from packaging have increased from 2016 to 2019 due to increasing revenue (figure 10). From 2020 the consumption has decreased despite the higher revenue.

On one hand the following factors increases the emissions:

- Bigger part of the boxes are packed for one- and two-persons households, increasing the amount of packaging
- More products, such as herbs, beans, spinach, etc. are bought in bulk to reduce the use of plastic and to manage shelf life better.
- The emissions increase the higher the volume packed in-house
- The packaging of products from The Green Workshop also results in more packaging in the Aarstiderne accounts.

On the other hand, several initiatives have been done to minimise the amount of packaging:

- When packing in batches (e.g., rice, bulgur, or pea sprouts) the bag used is as small as possible and reduces the use of plastic by approx. 50%
- When possible, herbs are bought in bulk with a band instead of a plastic bag
- Weekly reporting keeps track of the batches of vegetables, fruit and berries packed in plastic and keeps focus on reducing the use of packaging
- A new half size foam box has been introduced to be used in the smaller meal boxes.

Re-use of boxes

FACT BOX

The styrene box is used for products in need of cooling where they are packed with ice to keep the correct temperature until the customer unpacks the box. The styrene boxes are returned from the customers and are cleaned with UV-light and then used again. When worn out they are sent for recycling.

The iconic wooden boxes are not included in the above figures as wood is a renewable resource. When the wooden boxes are worn out, they are chopped up and used in the wood chip heater at Barritskov to heat the buildings.



6. Packaging - continued

Following thorough research on shelf life, plastic has been removed from, among other, broccoli, cucumbers, and tomatoes by the suppliers. Plastic can however still be found on these items in cases where a supplier cannot deliver, and the product must be exchanged. These are not initiatives that are registered in the CO2 accounts since only own packaging is accounted for.

All together, it seems that the focus on minimising packaging is leading to a reduction of the CO2 emissions. It will though be difficult to continue the reduction as more and more processing and packaging of products in the Green Workshop is insourced to gain higher and unique quality.

Figure 10: kg CO2 emissions from packaging

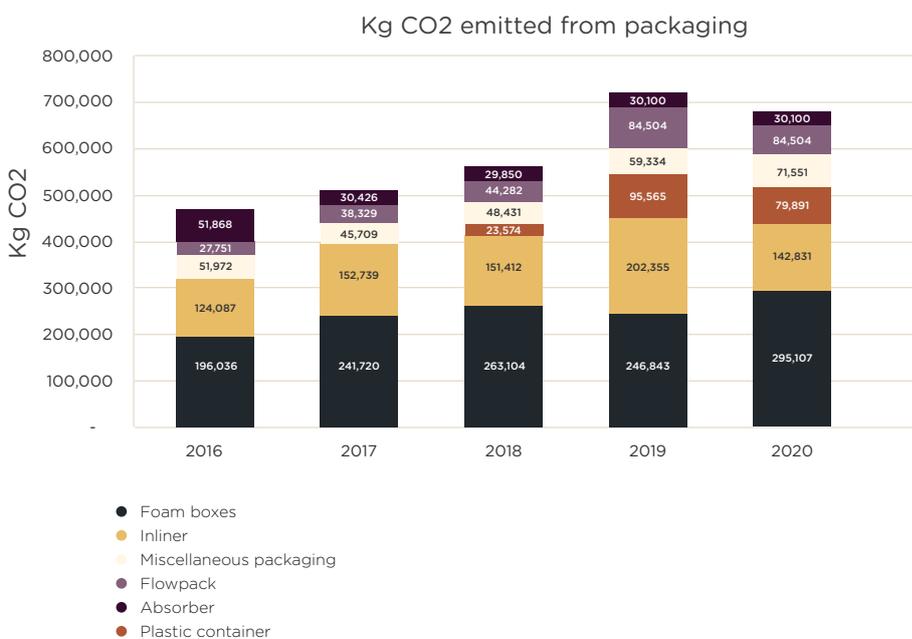


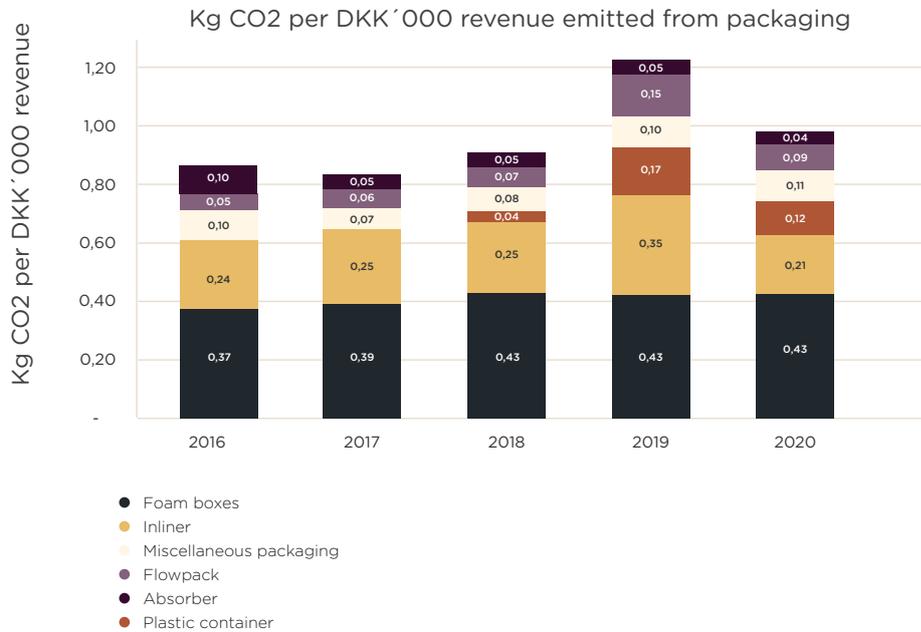
Table 3: No. Reuses of boxes.

Reuse of boxes	2015	2016	2017	2018	2019	2020
Wooden boxes	-	3.5	3.7	3.9	3.2	3.1
Foam boxes	3.3	3.9	4.2	4.1	3.9	3.7



6. Packaging - continued

Figure 11: Kg CO2 per DKK'000 of revenue from packaging



Types of packaging

FACT BOX

The wooded boxes contain a so-called inliner, a large plastic bag that keeps the items in the mealboxes together and keeps the moisture inside and the sunlight and bugs out. For meat and dairy products, a styrene box is used. Flow-pack bags are transparent plastic bags, used for products like couscous, rice, and nuts, etc. The plastic containers refer to the packaging used in The Green Workshop for items like chopped mixed greens.

Part of the fruits and greens are delivered in large boxes and are repacked in the so-called lettuce bags that go under the category of miscellaneous packaging. This category also comprises the brown paper bags used for end delivery of e.g., a bag of fruit or other items in addition to the mealbox as well as the cardboard boxes used for items like tomatoes, made of recycled pulp.



7. Paper

Figure 12 shows the development in the total CO2 emissions from consumption of paper. The total emissions from paper have increased since 2016 but decreases in 2020. The use of copy paper has grown, with more customers, but the use of flyers and campaign material has decreased.

Figure 12: kg CO2 emissions from paper

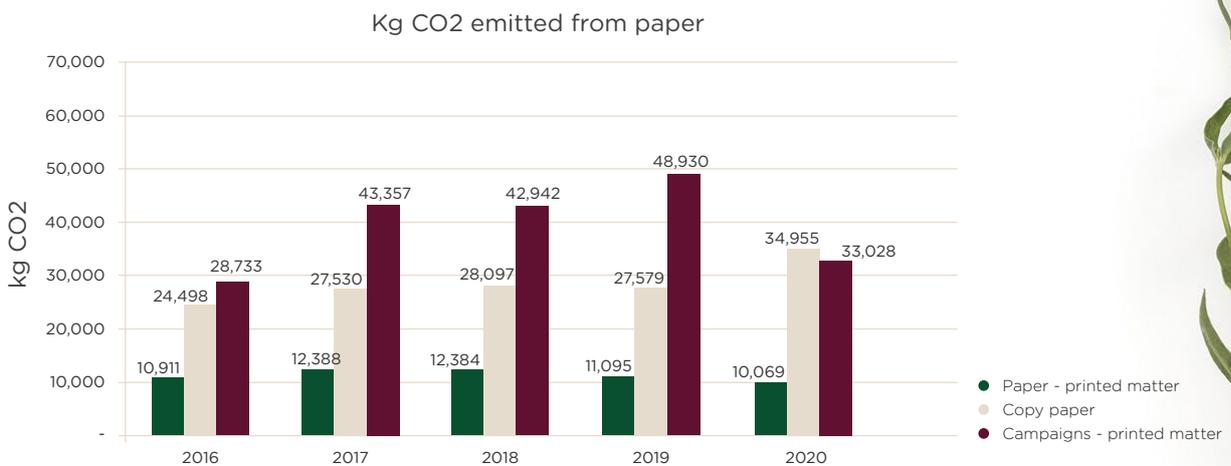
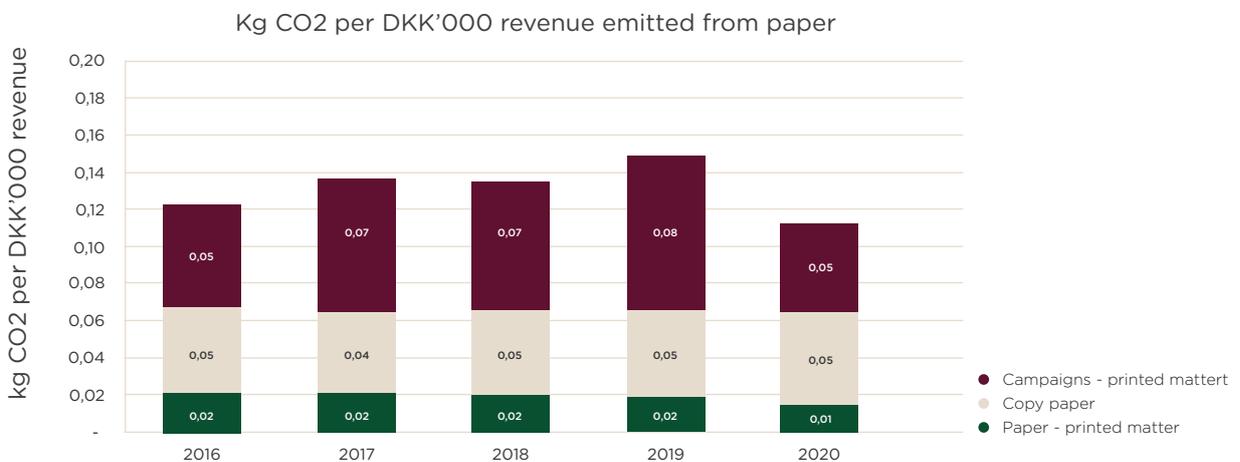


Figure 13 shows the kg CO2 emissions from paper consumption per DKK'000 of revenue. The emissions have been a little higher in 2019 but for 2020 the emissions are substandard from earlier years. The use of paper does not influence the emissions a lot being 0.11 kilograms per DKK'000.

Figure 13: kg CO2 per DKK'000 of revenue from paper





7. Paper - continued

Paper and certifications

FACT BOX

The meal boxes contains a newsletter (paper – printed matter) and recipes (copy paper) and paper is used for activation campaigns, for example as inserts in daily papers. This all requires different kinds of paper and includes printing costs.



The FSC label:

The FSC label (Forest Stewardship Council) is a certification of a sustainable choice of paper from FSC labelled forest, where only the amount of wood that the forest can reproduce is cut down. Animals and plant life enjoy protection and education, safety gear and a proper pay is secured for the people working in the forest.



Cradle to Cradle:

Cradle to Cradle is one of the world's most ambitious environmental certifications with high demands for the entire life cycle of a product. Paper and printing ink are produced without the use of harmful chemistry, heavy metals or hormone disrupting substances. This means that all printed matter in principle can be composted and used as fertilizer.

Only FSC certified paper is used for newsletters, recipes, copying paper and activation campaigns etc. In addition, our printing house, KLS Pure Print, is Cradle to Cradle certified.





8. Summary

Table 4 shows the development of the different sources of CO2 based on a comparison of the total kg CO2 emissions in 2019 and 2020 respectively.

It is, of course, very positive to see an overall decrease in the CO2 emissions in a period with growth in revenue. Parts of this is due to the changes that COVID-19 has brought in terms of working from home, digital meetings, and less driving. At the same time, the COVID-19 has also given the business favourable conditions with an increase in the general online sales, hence the data should be interpreted with caution.

The primary improvements have been achieved in the transport areas most noticeable on the distribution, but also the moderate increase in the energy consumption and the direct decrease in the use of packaging and paper.

It takes many different and continued initiatives to reduce the CO2 emissions and an ongoing focus on how to do better always.

Figure 13: kg CO2 per DKK'000 of revenue from paper

Revenue	2019: DKK 586,286m	2020: DKK 692,648m	18% increase	
Source of CO2 emissions:	Total kg CO2 2019	Total kg CO2 2020	Development 2019-2020	Why this development?
Inbound freight	1,810,354	1,974,050	+9%	More produce sourced closer to Barritskov and more produce from Italy transported by train.
Intermediate transport	436,713	456,444	+4%	Pallets are stacked higher, and a small flamingo box was introduced
Distribution	683,838	670,157	+2%	Route optimization, shorter distances between customers. Introduction of electrical truck, van and bicycles.
Company travels	156,232	64,408	-59%	Employees working from home, fewer meetings and less air travels.
Commuting	378,883	248,947	-34%	Employees working from home.
Energy	1,053,181	1,121,556	+6%	Economy of scale in the packhouse being more effective as revenue grew.
Packaging	730,666	692,822	-5%	More packaging used inhouse (the Green Workshop a.o.) but often with none or less packaging.
Paper	87,604	78,052	-10%	Lower consumption on campaigns
Total	5,337,471	5,306,440	-0.5%	A small decrease but achieved in a year of significant growth and hence a sign of better efficiency.



9. Initiatives to reduce CO2 emissions

At the end of 2019 Aarstiderne promised to have a CO2 account in balance from 2020 and onwards.

An agreement has therefore been made with National Capital Partners to buy 16,000 tonnes of VCS's (verified carbon standard) CO2 credits, in order to offset the CO2 footprint for the next 3 - 4 years in projects in East Africa, Chile and Colombia. The VCS credits are of the highest standards available. Besides the compensation for the emissions through offsetting it is of course apparent that the focus on reducing the emissions should have the highest focus and likewise the possibility to inset in Aarstiderne's own supply chain.

The following are initiatives going forward.

- On the *transport* area, focus is on filling up the vans and optimising the routes to save energy. For this reason, it is not possible for a customer to choose the time of arrival on their purchase.
- Using *alternative propellants* such as electricity or gas. The aim is to follow up on the successful introduction of both electrical vans and bikes, though this is challenged by lack of technological development.
- From 2019 to Christmas of 2020, a trial on *growing vegetables* in a nonheated and nonlighted greenhouse in Køge has taken place. The trial has challenged how many Danish leaf vegetable types can be grown in the cold part of the year. The experiences show that the Danish growing season can be prolonged with up to 6 - 8 weeks. With an otherwise average 20-week growing period, this is substantial. In the coming year this knowledge will be used to hopefully increase the share of Danish produce in the assortment and at the same time lower the need for inbound freight, hence a lot less kilometres driven by truck.
- Regarding *transport of people*, an intranet app is used to secure that cars are filled up. Since 2020, it is required that all new company cars are either hybrid or fully electric. So far two hybrid cars have been acquired and more electrical cars are ordered for 2021. Business travels by flight are minimised, but occasionally there is a need to go overseas to meet with suppliers etc.
- Regarding the *energy consumption* several issues on heating have been addressed over the past years. In 2021, it is the plan to install heat pumps to make use of the surplus heat from cooling the cold storages.
- *Packaging* has been described as one of the areas with great focus on improving in order to reduce size and thickness of the packaging materials.



9. Initiatives to reduce CO2 emissions

- continued

This report solely covers Aarstiderne's own CO2 emissions, from collecting the products at the suppliers to the box arrives at the doorstep of the customers. The CO2 emissions from the suppliers' production of goods are not included. This means that as more *production* is insourced, the level of CO2 emissions will increase at Aarstiderne. The alternative is to have more goods produced and packed at the suppliers which in total would most likely result in a higher total CO2 emission.

The mealboxes contain substantially less meat than an average Danish meal. The chefs in Aarstiderne strive to design meals based on the *80/20 principle*, where 20% of the energy is animal based and 80% is plant based. In 2019, a method has been developed to measure the kcal combination of the boxes. A regular Danish evening meal typically consists of 60% energy from plants and 40% energy from animals. On average, the meals in our mealboxes in 2020 was 74% plant-based and 26% animal-based. Customers claim to be eating greener after having used the mealboxes. This work of inspiring our customers to eat greener is one of the biggest impacts Aarstiderne has on the climate.

Our Supply Chain

FACT BOX

Food production and delivery does have a CO2 footprint and Aarstiderne lower this through the supply chain as follows:

- The Aarstiderne supply chain is very short. The time from harvest in the field to the customer only takes a few days.
- There are not many products in the storage waiting to get to a store to be sold.
- Most customers are subscribers, making it possible to forecast the sales in detail.
- In cooperation with selected farmers, yearly and quarterly planning for parts of the products is done. The farmer forecasts the amount of produce expected, and an agreement of a minimum demand from Aarstiderne is made. This way, a long-term relationship is built with the suppliers.
- The customers trusts he chefs in Aarstiderne to decide what to put on the plate – not everything is available at all times hereby minimizing the risk of food waste.
- The recipes are created from what is available and planned around the seasons.
- A small cauliflower fits the box for 2 people and the bigger ones the box for 5 people = less waste
- Defined portion sizes are also a mean of lowering the food waste. If only one leak is necessary for a dish this is what the customer gets and not a whole bundle.
- This way of organising the business minimizes the total emissions on the food delivered and is a step on the way to a shorter and more direct supply chain aiming to significantly lower the CO2 footprint on food.

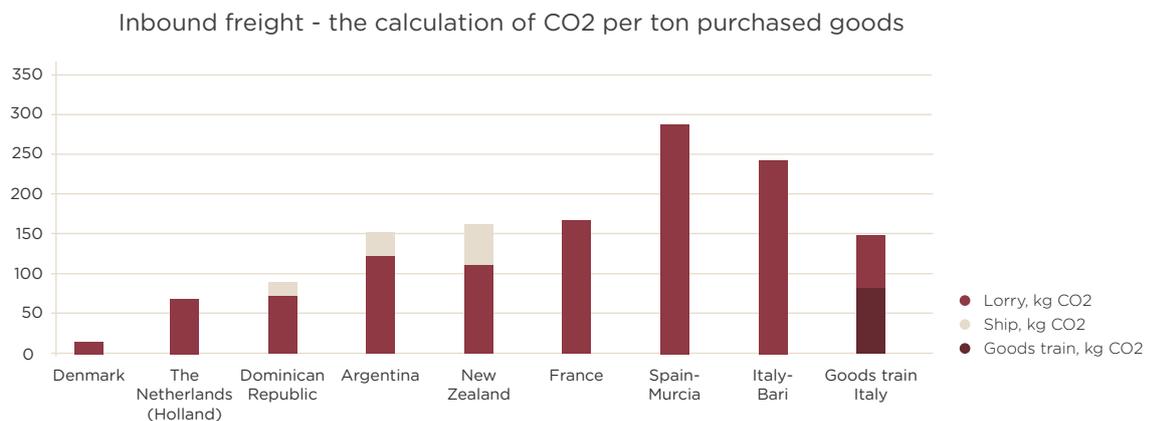


10. Appendices

Appendix A: The Danish and Danish/Swedish/German share of bread/flour, fish, fruit, vegetables, groceries, meat, dairy products and eggs for the years 2016-2020

Danish share	2016	2017	2018	2019	2020		Total purchase (Tonnes)
	DK %	DK+SE+DE%					
Bread/Flour	-	-	-	-	62.4	69.7	496.1
Fish	-	-	-	-	95.2	95.2	244.7
Fruit	7.8	6.2	6.8	2.2	8.6	13.1	2,793.6
Vegetables	34.5	38.9	33.7	35.0	35.9	36.3	6,917.2
Groceries	-	-	-	-	31.3	32.0	1,513.5
Meat	65.5	60.3	49.1	69.0	65.9	79.7	769.0
Dairy products	-	-	-	-	94.1	94.1	445.4
Egg	-	-	-	-	92.0	100.0	53.8
Total					35.6	38.0	13,233.3

Appendix B: Kg CO2 for inbound freight per ton of goods from selected countries with different means of transport.





10. Appendices - continued

Appendix C: Emission factors from Concito applied for the calculation of emission expressed in CO2 equivalents (CO2e).

Emission factors CO2 (CONCITO)		
Transport:	kg/unit	Description:
Inbound freight and intermediate transport - lorry	0.107	Lorry > 32 ton [ton*km]
Inbound freight - LNG trucks	0.102	Lorry > 32 ton [ton*km]
Inbound freight by ship	0.00243	Ship transport [ton*km]
Inbound freight in by train	0.05	Train [ton*km]
Distribution	0.28	Delivery van [km]
Distribution - Electric truck	0.25	Estimate of load capacity and electric consump. [km]
Distribution - Electric van	0.22	Estimate of short routes [km]
Distribution - Electric bike	0.01	Estimate from supplier
Company cars - diesel	0.13	Car [km]
Company cars - electric - Tesla	0.08	Electric car [km]
Company cars - hybrid	0.11	Combined electric and gasoline [km]
Company cars - electric - others	0.06	Electric car [km]
Air travels business meetings	250	Flight [per hour/passenger]
Overnight stays	60	Hotel [per night]
Train transport	0.05	Train [km]
Transport by own car	0.14	
Commuting:	kg/unit	Description:
Car - Gasoline	0.15	Car [km]
Car - Diesel	0.13	Car [km]
Train	0.05	Train (person) [km]
Energy:	kg/unit	Description:
Electricity consumption	0.5	Electricity consumption [kWh]
Oil consumption	2.8	Oil for heating [L]
Gas for heating	2.2	Natural gas [M3]
Gas for the kitchen and forklift truck	2.9	Bottled gas [kg]
Refrigerant - HFC	1774	HFC [kg]
Refrigerant - Freon	1300	Freon [kg]
Refrigerant - R404A/R744	3922	R404A/R744 [kg]
Refrigerant - CO2	1	CO2 [kg]
Packaging:	kg/unit	Description:
Foam boxes	3.5	Polystyren [kg]
Plastic container	4.4	Polypropylen/rPET [kg]
Inliner, flowpack, cup labels and other labels	3.07	HDPE (high density polyethylen) [kg]
Cellophane and transfer oil	2.5	LLDPE (Polyethylen) [kg]
Strapex	4.2	Polypropylen [kg]
Carrying tray and bag with handles	0.3	Recycle pulp [kg]
Absorber	2.01	30 % Polypropylen & 30 % polyethylen
Paper:	kg/unit	Description:
Paper - printed matter	1.3	C2C paper [kg]
Copy paper	0.82	C2C paper [kg]