Danish Ministry of Defence Carbon Account 2020

The level of activity in the Danish Ministry of Defence impacts the amount of CO_2 -e that is emitted. In 2020 a total of around 230,000 tons of CO_2 -e was emitted.



Foreword

The Ministry of Defence (MoD) is a large organization whose principal objectives require significant amounts of energy. Aircrafts, vehicles and ships consume energy during training and operations in Denmark and abroad. The built estate consumes energy by the use of electricity, water, and heating. A range of our missions are conducted abroad which entails travel activity.

The MoD publishes an annual overview of the energy consumption and climate impact of the entire organization's activities in the Carbon Account. We do this because it is meaningful to have exact knowledge of which resources are used and how they are used. It constitutes a foundation for through and through, documented decision-making that can enable 'greener' management.

In the present Carbon Account for 2020 it is clear that the MoD has had the lowest energy consumption since 2012 when the first Carbon Account was published. The energy consumption of the MoD has been reduced by 1.3 % on average every year since 2012. It is deemed that the climate initiatives of the past years, such as energy optimization of buildings, fuel optimization initiatives, and a focus on 'greener behaviour' among employees, has had a noticeable effect.

2020 has been a unique year. In February, the COVID-19 epidemic reached Europe and few days into March 2020 several sectors of the Danish society went into lock-down. It reduced activity – also in the area of the MoD. In 2020 the energy consumption was 8 % lower than the levels of 2019. The MoD had to reach two goals with respect to the built estate in 2020. Firstly, to save 14 % of energy compared to 2006 levels, as constituted in the [Circular on Energy Efficiency in the Institutions of the State] from the 5th of July 2014. Secondly, to save 20 % of energy compared to 2006 which was established in The 'Danish Ministry of Defence Environment and Energy Strategy 2016-2020'. By the end of 2020 a total of 20,4 % energy had been saved which realized both goals.

The Green Action Plan of the Ministry of Defence 2021-2025 sets a clear and green direction for the MoD in the coming years. We will continue to work on reducing energy consumption, increasing energy efficiency and work on the green transition of the entire organization. That is worth fighting for.

Anders Mærkedahl Pedersen

Major General Head of the Estate Agency of the Danish Ministry of Defence

Summary

The Carbon Account of the Ministry of Defence 2020 documents that the MoD meets the requirements of the [Circular on Energy Efficiency in the Institutions of the State] from the 5th of july 2016

In 2020 the MoD emitted around 230,000 tons $\rm CO_2$ -e.

The majority of the emissions stems from fuels and it make up for 81.1 % of the total emissions of the MoD. The second largest factor of emissions is the built estate which makes up 15.2 % of the total emissions. In addition, travels made up 2.1 % and cooling- and extinguishing agents made up 1.6 % of the total emissions.

The emissions of the MoD have decreased by a total of 10,3 % from 2019 to 2020.

The composition of CO_2 -e emissions across areas has not changed significantly since 2019. Since 2019, the emissions from fuels have decreased by around 2 %. The emissions of the built estate has decreased by 23 % from 2019 to 2020. The emissions from cooling- and extinguishing decreased by 39 % and emissions from travels by 55 %.

The activity of the MoD has emitted around 78,600 kg SO2, which constitutes a drop of 6.6 % since 2019.

There has also been a reduction of NO_x by 25,2 % where a total of around 175,000 kg NO_x were emitted.

In 2020 the MoD emitted 5,500 kg PM_{10} , which constitutes a reduction of 32.2 % compared to 2019.

The MoD's own energy production from solar panels reached 4.3 GWh in 2020, which is 0.1 GWh more than in 2019. The production of electricity constitutes 3.7 % of the total electricity consumption of 2020.

The energy consumption in the built estate made up 312 GWH in 2020 which constitutes savings of 8 % compared to 2019 and 20.4 % compared to the level of 2006. Therefore the MoD meets the requirement of reducing energy consumption with 20 % by the end of 2020 as it was set in [Circular on Energy Efficiency in the Institutions of the State] the 5th of July 2016.





Table of Content

Foreword	5
Summary	6
Table of Content	9
Introduction	11
Readers Guide	12
Delimitation	12
Data Quality	14
Fuels	14
Cooling and Extinguishing Agents	14
Estates	15
Travels	15
Climate Impact of the Danish MoD	17
Fuels	22
Cooling and Extinguishing Agents	28
Estate	28
Energiforbrug	35
Travels	35
The GHG protocol	39
Appendix 1: Emissions Factors	44
Appendix 2: Accounting Data	48





Introduction

The Carbon Account of the Ministry of Defence 2020 presents an overview of the most important sources of greenhouse gas emissions of the activity of the MoD ranging from estate operations and administrative tasks (e.g. office operations and travels) to military activity conducted by the Defence Command Denmark, The Danish Emergency Management Agency, or the Home Guard Command Denmark.

The Carbon Accounts presents and overview of the impact of changes in the activity level of the MoD and the result of the initiatives that the MoD has implement to reduce energy consumption and reduce the negative climate effects. The Carbon Account also makes up the foundation for reporting energy consumption data to the Danish Energy Agency. It also documents our contribution to the reduction of energy consumption across the institutions of the State.

The MoD was affected by the national lock-down events with personnel working from home due to the COVID-19 pandemic. This has had an effect on the energy consumption and emissions from the built estate and activities in 2020. While the Carbon Account provides a retrospective overview, the daily work on environment and energy management in the MoD ensures a continuous push for improvements. The Danish Ministry of Defence: Green Action Plan 2021-2025 is a collection of green initiatives that aim at ensuring a green defence.

The MoD makes use of the Greenhouse Gas Protocol Corporate Standard (GHG Protocol) for reporting on climate impact in its Carbon Account. The GHG protocol divides energy consumption of an organization into three scopes depending on the level of control the organization has over its emissions. The GHG protocol is an internationally acknowledged accounting and reporting standard for greenhouse gasses. The Carbon Account serves as documentation of the reduction in energy consumption across the institutions of the State.



Readers Guide

The Carbon Account 2020 of the Ministry of Defence begins with a description of data quality. An overview of the climate impact of the MoD follows as well as a detailed presentation of energy consumption stemming from fuel, cooling- and extinguishing agents, estate activity and travels.

The Carbon Account includes two appendixes that provides a more detailed deep-dive into the calculation methods and the reasoning underpinning the use of method.

- Appendix 1: Emissions Factors
- Appendix 2: Accounting Data

When the description built estate is used in this Carbon Account it refers to all locations, buildings and sites that are used by the authorities under the MoD. Buildings and employees under the MoD in Greenland and the Faroe Islands are included in the overview. The energy consumption of the buildings of the MoD in Greenland and the Faroe Islands are not included (with the exception of production of electricity and heating from diesel generators on sites such as Station Nord and Grønnedal). This means that data is not available for electricity and heating consumption of the buildings that the MoD administers abroad.

The following chemical abbreviations are used in the Carbon Account of the MoD: Carbon dioxide (CO_2) and carbon dioxide equivalents (CO_2-e) is used to map the greenhouse gas emissions as one single number that covers all types of greenhouse gasses such as methane and CO_2 . Sulfur dioxide (SO_2) , nitrogen compounds (NO_x) and particles (PM_{10}) is used to describe the emissions of the MoD with the greatest impact on the local environment.

Delimitation of Authorities

The Carbon Account of the Ministry of Defence 2020 covers all agencies and authorities under the MoD as illustrated in Figure 1.







Data Quality

It is deemed that the data points underlying the Carbon Account of the Danish Ministry of Defence 2020 gives an accurate overview of the climate impact of the MoD. It is deemed that the data points underlying the Carbon Account of the Danish Ministry of Defence 2020 gives an accurate overview of the climate impact of the MoD.

Fuels

The category fuels covers the consumption of fuels for the operative branches of the MoD including for aircrafts, ships, operative and administrative vehicles. The Danish Ministry of Defence Acquisition and Logistics Organisation is responsible for the procurement and administration of fuels.

The consumption of fuels in diesel generators for electricity and heating purposes on sites such as Station Nord and Grønnedal in Greenland, as well as Danish military camps abroad, are included in the category. The same holds for fuel used for transportation of fuels.

Refuelling from the MoD's own fuel system allows for direct registration of fuel consumption of each unit such as a vehicle of an aircraft. This process results in an exact registration of the consumption because the fuel system is digitalized in the MoD's database. Refueling amounts from other suppliers are registered when the MoD receives and invoice for refueling. This might result in minor data inaccuracies and delays in the carbon account, which will be evened out between carbon accounts.

The emissions from fuels with respect to personal transportation in one's own vehicle, in work related travels, is accounted for in the category 'travels'.

Cooling and Extinguishing Agents

The Emergency Management Agency reports on its own consumption of cooling and extinguishing agents while the Danish Ministry of Defence Acquisition and Logistics Organisation reports on the amount of cooling and extinguishing agents used in the rest of the MoD. The emission calculations of cooling and extinguishing agents are based on the Intergovernmental Panel of Climate Change Assessment Report.

It is assumed all purchases are consumed immediately in this category.

Estate

The Danish Ministry of Defence Estate Agency assess the consumption of energy from the establishments. The majority of the Danish MoD's consumption of electricity is calculated by remote reading and settled according to the actual consumption. The remaining part, which primarily are in cases, where The MoD has rented into a building with more tenants, are calculated according to a fixed share based on, how big as part of the building the MoD is using.

The consumption of water and heating is extracted by a customer login from the different suppliers' home pages. After this, the information is validated by a review of the MoD's consumptions bills. Those places, where electricity is used to heating, either through heat pumps or as direct electric heating, the heating consumption will count as a part of the electricity consumption, and not the heat consumption. The reason is, that the input is electricity, but also because the MoD does not have meter data from those places, where electricity is used for heating.

There is in the Ministry of Defences Carbon Account 2020 calculated individual emission factors on the five biggest district heating suppliers to the Ministry of Defences estates, which amounts to approximately 53 % of the total district heating supply. The five district heating suppliers are:

- HOFOR (Utility Services of the Capitol Region).
- SK-Forsyning (Slagelse og Korsør Utilities).
- Aalborg Forsyning (Aalborg Utilities).
- Fredericia Fjernvarme (Fredericia District Heating).
- Frederikshavn Fjernvarme (Frederikshavn District Heating).

The Carbon Account 2020 is provided through a long manual process by collection of data, which poses a risk of human error in the process. It builds on collection of bills. There is a small chance there can be a meter, which is missing in the account. Likewise there can be a meter, that no longer belongs to the MoD. Overall, the data in this category are considered slightly more uncertain than the account of fuels.

Travels

Danish Ministry of Defence Accounting Agency generates an ac-

count of travels made in the MoD based on travels completed in the MoDs digital travel management module. The accounts builds on travels converted to person kilometres. Under some travel postings, the economy from the transport is gathered with other travel expenses. It can be additional costs, which is not directly related to the promoted numbers of kilometres. It is not possible exclude these additional costs, and therefore the account will be higher than the actual consumption.

It is assumed, that [pool vehicles], rented vehicles and private cars in average drives like a car in energy class b. It is further assumed, that 75 % is on high way, 15 % on country road and 10 % as city driving.

The data in this category is considered of middle quality, because the account is based on a series of assumptions and conversions. The statement is prepared according to the same principles as in previous years. As the calculation method is similar to previous years, the trend in travel activity is considered accurate.



Climate Impact of the Danish MoD

In 2020 the Danish MoD has reduced its CO_2 -e emissions on all measured parameters compared to 2019.

The energy consumption of the MoDs estates were in 2020 the lowest since 2015. The reduction has been enough for the MoD to meet the requirements of energy savings constituted in the [Circular on Energy Efficiency in the Institutions of the State] with the goal that the energy consumption of the heated building mass must be reduced by 14 % from 2006 to 2020.

The use of fuels were reduced in 2020 compared to 2019. It is a general development, that the MoD reduce its use of fuel a bit every year. It is only 2018, that stands out, which is due to an extra bill from the use of fuel to international operations.

The lock-down due to the COV-ID-19 epidemic led to travel restrictions, which is reflected in a lower level of travel activity within the MoDs area.









Table 1: Data for Figure 2, 3, 4 and 5

	Unit	2016	2017	2018	2019	2020
Electricity	[GWh]	119,9	119,7	121,5	123,9	117,0
Heating normalised by degree days	[GWh]	211,8	217,1	224,5	215,2	194,6
Total energy consumption	[GWh]	331,7	336,8	346,0	339,2	311,7
Fuels [mio. I]	[mio. l]	81,2	80,1	94,2	74,0	71,5
Cooling and extinguishing agents	[tons]	4,0	2,3	2,5	2,8	1,5
Travels	[mio. km]	94,1	101,2	103,3	99,8	42,8



Table 2: Data for Figure 6.

	Unit	2016	2017	2018	2019	2020
Electricity	[tons CO ₂ -e]	30.552	22.289	23.691	17.836	14.093
Heating	[tons CO ₂ -e]	30.491	28.829	29.387	27.509	20.970
Fuels	[tons CO ₂ -e]	211.621	210.706	244.565	191.594	187.624
Cooling and extinguishing agents	[tons CO ₂ -e]	14.203	7.677	9.077	6.150	3.750
Travels	[tons CO ₂ -e]	12.575	10.650	10.641	10.678	4.844
Total	[tons CO ₂ -e]	299.442	280.152	317.361	253.767	231.281



Table 3: Data for Figure 7.

Total	Unit	SO ₂	NO _x	PM ₁₀
2016	[tons]	85	254	9
2017	[tons]	91	243	8
2018	[tons]	86	242	8
2019	[tons]	84	219	7
2020	[tons]	79	175	6



Fuels

The account of fuels contains the fuel, that the capacities of the MoDs consumes and the amount of fuel, which is used to generate heating, cooling and electricity, e.g. in camps with Danish soldiers, Sirius patrols stations and Danish contributions to international missions.

The use of fuel was in 2020 a little bit smaller than previous years. It is the ships and vehicles, which used less fuel. It is especially the ABSALON-class that has used less fuel, whereas the F-16 flights has used a little more, but at the same time the EH101 helicoptors and Challenger planes has used a little less. The MoD's ships consumption of fuel is similar to the previous years without large fluctuations on the various ship classes with the exception of the mentioned ABSALOB-class.

The land-based Vehicles had a lower consumption of fuel compared to 2019.













Figure 13: The consumption of fuels of the most consuming capacities [millions litres]

Luft: F-16, C130J Hercules, EH101 Helikopter og CL-604 Challenger. Maritim: THETIS-, ABSALON-, KNUD RASMUSSEN- og DIANA-klassen. Jord: Køretøjer. Andet dækker over øvrige kapaciteter. Betegnelsen dækker over både luft, maritime og landbaserede kapaciteter.





Cooling and Extinguishing Agents

The MoD use cooling agents in operational vehicles, ships and aircrafts. The consumption (purchase) is accounted for through Danish Ministry of Defence Acquisition and Logistics Organisations overview over purchase of cooling- and extinguishing agents. In general, the purchase of cooling- and extinguishing agents were on normal level compared to previous years. However, as always, there are large fluctuations in some of the items, which is mainly due to large purchases and actual consumption.







Estates

The energy consumption of the estates of the MoD was reduced by 8 % in 2020 compared to 2019.

The emission of CO_2 -e of the estates has fallen 22,7 % in 2020 compared to 2019. This was partly due to an effort to convert fossil fuels into greener alternatives. The energy consumption of estates, where fossil fuels has been a part of the heating, is also lower due to the COVID-19 lockdown. The emission of NO_x , SO_2 and PM_{10} were also less in 2020, because these emissions are linked to the reduced energy consumption. The emissions of PM_{10} and NO_x are 36 % and 26 % less compared to 2019. This was largely due to the decentralized heating source on the closing estates with emergency preparedness and partly the year's composition on electricity.



Table 4: Data for Figure 19 and 20

	Unit	2016	2017	2018	2019	2020
Electricity	[GWh]	119,9	119,7	121,5	123,9	117,0
Heating normalised by degree days	[GWh]	211,8	217,1	224,5	215,2	194,6
Total energy consumption	[GWh]	331,7	336,8	346,0	339,1	311,6



Table 5: Data for Figure 21

	2016	2017	2018	2019	2020
Electricity	1,3 %	-0,2 %	1,5 %	2,0 %	-5,6 %
Heating normalised by degree days	4,2 %	2,5 %	3,4 %	-4,2 %	-9,6 %
Total energy consumption	3,1 %	1,5 %	2,7 %	-2,0 %	-8,1 %

Table 6: Man-years and the heated building mass

	Unit	2016	2017	2018	2019	2020
Man-years	[number]	22.902	22.806	23.061	23.078	23.966
Heated building mass	[m²]	1.750.609	1.773.788	1.702.231	1.789.966	1.687.209



Table 7: Data for Figure 22

Consumption/Man-year	Unit	2016	2017	2018	2019	2020
Heating/Man-year [kWh]	[kWh]	5.237	5.247	5.269	5.371	4.884
Varme/årsværk	[kWh]	9.248	9.488	9.736	9.325	8.122
CO ₂ -e/Man-year (incl. fuels)	[kg]	13.075	12.284	13.761	10.996	9.650



Table 8: Data for Figure 23

Consumption/heated building mass	Unit	2016	2017	2018	2019	2020
Electricity/m ²	[kWh]	69	67	71	69	69
Heating/m ²	[kWh]	121	122	132	120	115
CO ₂ -e/m ² (excluding fuels)	[kg]	35	29	31	17	21

Table 9: Emissions from the MoDs estates

Etablissementer	Unit	2016	2017	2018	2019	2020
SO ₂	[kg]	25,316	25,64	24,399	23,986	23,251
NO _x	[kg]	59,705	57,719	59,548	63,765	46,618
PM ₁₀	[kg]	5,395	4,776	5,05	4,884	3,123











Figure 26: The MoDs estates energy consumption in relation to the 2020 energy consumption target [kWh]

Consumption of Energy

The MoD is coved by the [Circular on Energy Efficiency in the Institutions of the State], which imposes the Danish ministries to reduce the energy consumption of the heated building mass with 14 % by the end of 2020 compared to 2006. As shown in figure 26, the goal has been reached.

In addition, the MoD had a goal of achieving an energy reduction of 20 % by the end of 2020 compared to 2006. As shown in figure 26, the target has been is met with an overall reduction of 20,4 % during the period.

Travels

The MoD has long made an effort to ensure that employees travel less and use video meeting and video conferences increasingly. There has been significantly less activity in this area in 2020.



Table 9: Data fro Figure 27

Means of transportation [personel km]	2016	2017	2018	2019	2020
Car	18.223.708	23.251.630	24.261.160	26.111.401	18.591.782
Plane	75.301.472	77.615.193	78.929.444	73.497.920	24.158.829
Taxi	585.742	352.676	145.977	170.584	69.043



Table 10: Data for Figure 28

Means of transpotation	Unit	2016	2017	2018	2019	2020
Car	[tons CO ₂ -e]	2.576	3.286	3.429	3.690	2.628
Plane	[tons CO ₂ -e]	9.923	7.318	7.194	6.965	2.208
Taxi	[tons CO ₂ -e]	76	46	19	22	9



GHG Protocols

Scope 1 Direct emissions from fuel consumption, individual heating and use of cooling- and extinguishing agents.

Scope 2 Indirect emissions related to the production of electricity and district heating.

Scope 3 Indirect emissions related to travels, purchase of materials and the transport of goods The MoD use the Green House Gas protocol as a basis for the MoDs carbon accounts. After this standard the MoD divide it's emission into three scopes depending on how direct influence the MoD has on the extent of the emission. By dividing the emissions is becomes easier to identify, where the potential for improvement is biggest.

Scope 1 contains the MoDs indirect climate impacts. Scope 1 is fuels, cooling- and extinguishing agents and individual heating of the estates of the MoD.

Scope 1 is the primary source of CO_2 emissions of the MoD, and it is primarily related to the operative activities.

Scope 2 is the MoDs indirect climate impacts through purchase of e.g. electricity and district heating. In scope 2, the emissions have fallen despite increased energy consumption. This is due to a reduced fossil warming and a cleaner electricity production in Denmark. The MoDs own solar cells contributed in 2020 with a production of 4,3 GWh, which corresponds to 3,7 % of the MoDs total energy consumption.

Scope 3 so far covers the MoDs travels. There has been a slight decrease in scope 3 compared to 2019 due to a declining travel activity.

Scope	Unit	2016	2017	2018	2019	2020
Scope 1	[tonnes CO ₂ -e]	241.092	232.956	269.867	211.990	199.656
Scope 2	[tonnes CO ₂ -e]	45.775	36.546	36.852	31.099	26.781
Scope 3	[tonnes CO ₂ -e]	12.575	10.650	10.641	10.678	4.844
Total	[tonnes CO ₂ -e]	299.442	280.152	317.360	253.767	231.281

Table 11: Data for Figure 29



Figure 30: Scope 1 [tonnes CO₂-e]





```
Figure 32: Scope 3 [tonnes CO<sub>2</sub>-e]
```





Appendix

Appendix 1: Emissions Factors Appendix 2: Accounting Data

Appendix 1: Emissions Factors

Table 12: Emissions from electricity, source Danish Energy Authrorities [kg/kWh]

Electricity	Unit	2016	2017	2018	2019	2020
CO₂-e	[kg/kWh]	0,260	0,193	0,202	0,153	0,125
CO ₂	[kg/kWh]	0,256	0,190	0,199	0,150	0,122
SO ₂	[kg/kWh]	0,00004	0,00004	0,00004	0,00003	0,00004
NO _x	[kg/kWh]	0,00018	0,00017	0,00017	0,00020	0,00016
Particulate Matter (PM ₁₀)	[kg/kWh]	0,0000105	0,0000100	0,0000100	0,0000100	0,0000100

-		
District heating	Unit	2020
CO ₂ -e	[kg/kWh]	0,15
CO ₂	[kg/kWh]	0,15
SO ₂	[kg/kWh]	0,00024
NO _x	[kg/kWh]	0,00032
Particulate Matter (PM ₁₀)	[kg/kWh]	0,000015

Table 13: Emissions from district heating, national average,source Danish District Heating Association [kg/kWh]

Table 14: Emissions from the largest suppliers of district heation to the MoD's estates, sources the individual providers carbon accounts [kg/kWh]

District heating	Unit	HOFOR	SK- Forsyning	Aalborg Forsyning	Fredericia Forsyning	Frederiks- havn Forsyning
CO ₂ -e	[kg/kWh]	0,094	0,150	0,091	0,124	0,000
CO2	[kg/kWh]	0,093	0,150	0,091	0,124	0,000
SO ₂	[kg/kWh]	0,00001	0,00024	0,00000	0,00000	0,00000
NO _x	[kg/kWh]	0,00010	0,00032	0,00002	0,00014	0,00000
Particulate Matter (PM ₁₀)	[kg/kWh]	0,000008	0,000015	0,000000	0,000001	0,000000

Decentralised heating	Unit	Natural Gas	Gas oil solie	Biomass
CO ₂ -e	[kg/kWh]	0,22	0,289	0,001
CO2	[kg/kWh]	0,219	0,288	0,000
SO ₂	[kg/kWh]	0,000002	0,000303	0,000031
NO _x	[kg/kWh]	0,0000985	0,000181	0,000434
Particulate Matter (PM ₁₀)	[kg/kWh]	0,0000004	0,0000180	0,0001480

Table 15: Emissions from decentralised heating, source the Danish Energy Authrorities

Table 16: Nomalisation of degree days, source the Danish Meteorological Institute

Degree days	Unit	2016	2017	2018	2019	2020
Normal year	Degree hours	3382	3382	3382	3382	3382
Current year	Degree hours	2998	2970	2900	2847	2430
Normalising factor	Degree hours	1,1281	1,1387	1,1662	1,1878	1,3918
Actual consumption of heating	[kWh]	190.999.659	194.217.270	196.738.765	185.583.114	146.023.320
Normalised consumption of heat	[kWh]	211.794.285	217.111.576	224.533.204	215.206.476	194.649.687

Table 17: Emisions from cooling and extinguishing agents, source IPPC AR5

Cooling agents 2018	Unit	IPPC AR5
Halon 1211	[kg CO ₂ -e/kg]	1.750
Halon 1301	[kg CO ₂ -e/kg]	6.290
Extinguishing agents	Unit	IPPC AR5
1,1,1,3,3,3-hexaflourpropan	[kg CO ₂ -e/kg]	6.300
R134	[kg CO ₂ -e/kg]	1.300
R22	[kg CO ₂ -e/kg]	1.810
R404A	[kg CO ₂ -e/kg]	3.943
R407C	[kg CO ₂ -e/kg]	1.624
R410A	[kg CO ₂ -e/kg]	1.924

Appendix 2: Accounting Data

Appendix 2: Accounting Data

Data	Units	2016	2017	2018	2019	2020
Master Data						
Personel	Man-years	22.902	22.806	23.061	23.078	23.966
Building Mass	[m²]	2.419.630	2.457.466	2.477.061	2.590.498	2.454.516
Heated Building Mass	[m²]	1.750.609	1.773.788	1.702.231	1.789.966	1.687.209

Estates						
Water consumption	[m³]	513.405	479.002	470.236	472.678	234.185
Electricity Consumption	[kWh]	119.931.253	119.662.864	121.502.336	123.944.927	117.048.796
CO ₂ -e	[tons]	30.552	22.289	23.691	17.836	14.093
District Heating - Actual Consumption	[kWh]	108.062.231	113.564.672	105.543.226	105.076.564	103.521.744
CO ₂ -e	[tons]	15.223	14.257	13.162	13.263	12.688
Individuel Heating - Actual Consumption	[kWh]	82.937.428	80.652.598	91.195.539	80.506.550	42.501.576
CO ₂ -e	[tons]	15.268	14.572	16.226	14.246	8.282
Total Heating - Actual Consumption	[kWh]	190.999.659	194.217.270	196.738.765	185.583.114	146.023.320
Total Heating - Heating normalised by degree days	[kWh]	211.794.285	217.111.576	224.533.204	215.206.476	194.649.687
CO ₂ -e from Estates	[tons]	61.043	51.118	53.078	45.345	35.063
Total Energy Consumption	[kWh]	331.725.538	336.774.440	346.035.540	339.151.403	311.698.483

Master Data	Units	2016	2017	2018	2019	2020
Cooling- and Extinguishing Agents						
CO ₂ -e from Cooling- and Extinguishing Agents	[tons]	14.203	7.677	9.077	6.150	3.750

Fuels						
Fuel Consumption	[liter]	81.212.425	80.066.940	94.193.282	73.987.124	71.485.880
CO ₂ -e from Fuels	[tons]	211.621	210.706	244.565	191.594	187.624
Energiforbrug	[kWh]	797.676.534	788.713.768	922.005.978	728.282.436	702.681.390

Travels, total		94.110.922	101.219.499	103.336.581	99.779.905	42.819.654
Tjenesterejser by Plane	[km]	75.301.472	77.615.193	78.929.444	73.497.920	24.158.829
Tjenesterejser by Car	[km]	18.809.450	23.604.306	24.407.137	26.281.985	18.660.825
CO ₂ -e	[tons]	12.575	10.650	10.641	10.678	4.844

Key Figures						
Energy Consumption from Estates and Fuels	[kWh]	1.129.402.072	1.125.488.208	1.268.041.518	1.067.433.839	1.014.379.872
CO ₂ -e total	[tons]	299.442	280.152	317.361	253.767	231.281
CO ₂ -e total	[tons CO ₂ -e / man-year]	13	12	14	11	10
CO ₂ -e total	[tons CO ₂ -e / heated m ²]	0,17	0,16	0,19	0,14	0,14



Danish Ministry of Defence Estate Agency Arsenalvej 55, 9800 Hjorring

Tlf: +45 7281 3000 www.ejendomsstyrelsen.dk