SDU Climate account

2018-2025

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01 Introduction

01.01 Purpose

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01.01 Introduction and purpose

Climate change is a significant and complex societal challenge that requires action, knowledge and innovation. With 24,000 students and over 4,300 employees, SDU has a special responsibility to actively contribute to the green transition - both through research and education and by reducing the university's own greenhouse gas emissions in line with research. From 2025, climate work is anchored in SDU's Climate Plan 2.0, which sets the direction towards 2030 and applies for the period 2025-2027.

Climate Plan 2.0 aims to avoid greenhouse gas emissions in scope 1 and scope 2 by 2030. For scope 3, differentiated targets have been set, including a 57% reduction for work-related trips and a 15% reduction for procurement of goods and services compared to 2018. The targets reflect both areas with direct impact and areas where the transition requires collaboration, new solutions and changed practices.

The development of the university - including new degree programmes, more external funding, a geographical shift to the west and new innovation environments - requires sustainability to be considered from the start. The green transition is closely linked to innovation and the willingness to rethink workflows, partnerships and priorities. Through the annual climate report, SDU ensures transparency and follow-up on the goals and strengthens the basis for continued ambitious and innovative climate efforts.

01.02 Method

SDU utilizes the methodology of the Greenhouse Gas Protocol (GHG Protocol) as the foundation for its climate accounts. This is an internationally recognized and widely adopted standard for calculating CO2 emissions for businesses, organizations, and other universities. This methodology is recommended by the European Commission and the cross-sectoral cooperation within the government's climate partnerships.

In the GHG Protocol, emissions are diveded intro three scopes:

Scope	Type af emissioner	Definition
Scope 1	Direct emissions	All direct emissions from sources owned or controlled by SDU, including cars and other vehicles, as well as emissions resulting from SDU's own activities, such as gases used for research and education.
Scope 2	Indirect emissions	Indirect emissions from electricity or district heating consumed by SDU.
Scope 3	Other indirect emissions	Other indirect emissions from SDU's activities, arising from sources that SDU does not own or control. This includes emissions related to the entire value chain – which should be understood as both 'upstream', including emissions from procurement, and 'downstream', which are emissions associated with the use and disposal of products.

According to the GHG Protocol, reporting on both scope 1 and scope 2 is mandatory, while reporting on categories within scope 3 is voluntary. The Danish climate target set in the Climate Act applies to scope 1 and 2, as required by the GHG Protocol.

SDU's climate accounts are continuously developed to ensure accurate statements and a better basis for decision-making. New methods and data sources mean that previous climate accounts cannot be directly compared, but the approach will ensure that SDU continuously optimises its climate efforts. In this year's climate report, the refrigerants category has been included in scope 1.

02 Results

40.781
total tonnes of CO_2e

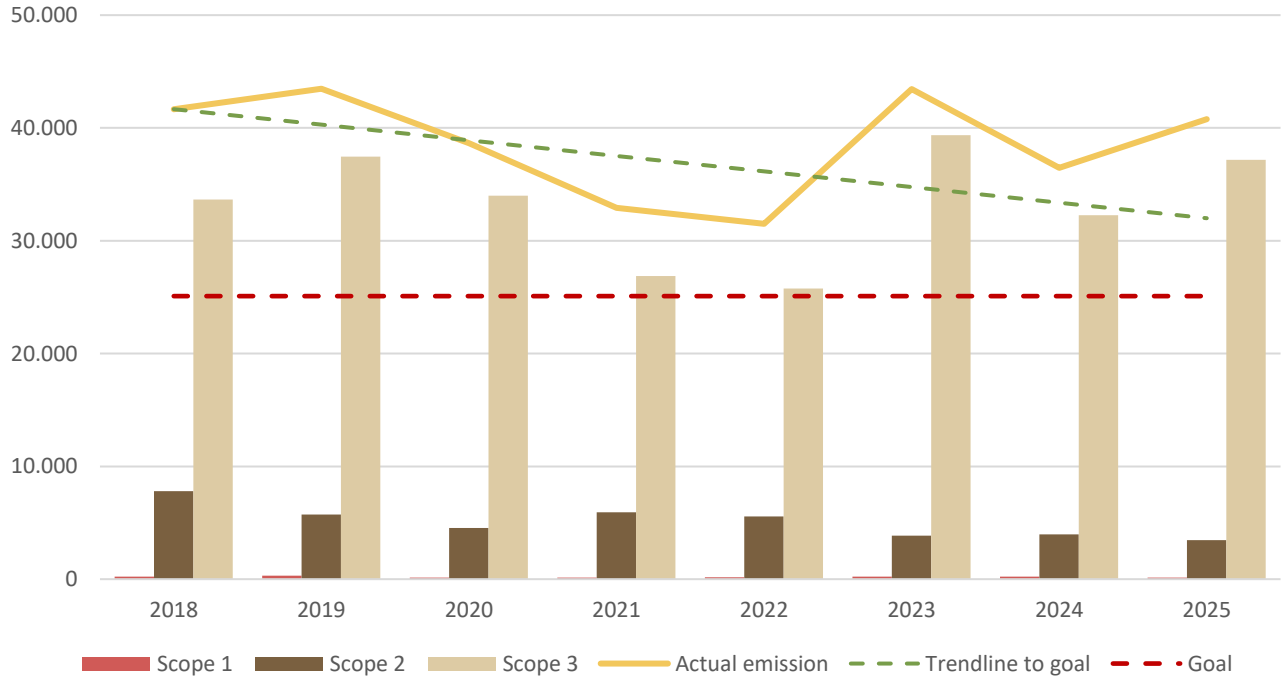
-2%
since 2018

In 2025, SDU emitted 40,781 tonnes of CO_2e. This corresponds to a reduction of approximately 2% compared to the base year 2018, when emissions were 41,665 tonnes CO_2e. After the decrease in 2024 (36,464 tonnes CO_2e), an increase in total emissions is seen again in 2025. The increase can primarily be attributed to Scope 3, including increased activity levels and procurement of goods and services. Scope 1 and 2 remain at a low level compared to 2018.

This development should be seen in light of the fluctuations in activity levels in recent years. In 2023, SDU experienced a significant increase in CO_2 emissions, partly due to increased purchases in connection with new buildings and research facilities. In 2024, emissions fell again, particularly driven by lower activity in scope 3. The increase in 2025 indicates that emissions remain closely linked to the university's overall level of activity and investment - especially in research-related activities, which typically have a higher carbon footprint than lecturing due to laboratories, equipment and travel.

With Climate Plan 2.0 (2025-2027), SDU has set a clear direction towards 2030, where the goal is carbon neutrality in scope 1 and 2 and reductions of 57% for work-related trips and 15% for other significant scope 3 categories compared to 2018. In light of the expected increased level of research activity, it will be crucial to strengthen efforts for more climate-conscious procurement, efficient land utilisation, energy-efficient solutions and new innovative approaches so that growth and climate considerations can go hand in hand to a greater extent.

Figur 1: SDU total emissions from 2018-2025



03 Scope 1

141

total tonnes of CO_2e

-33%

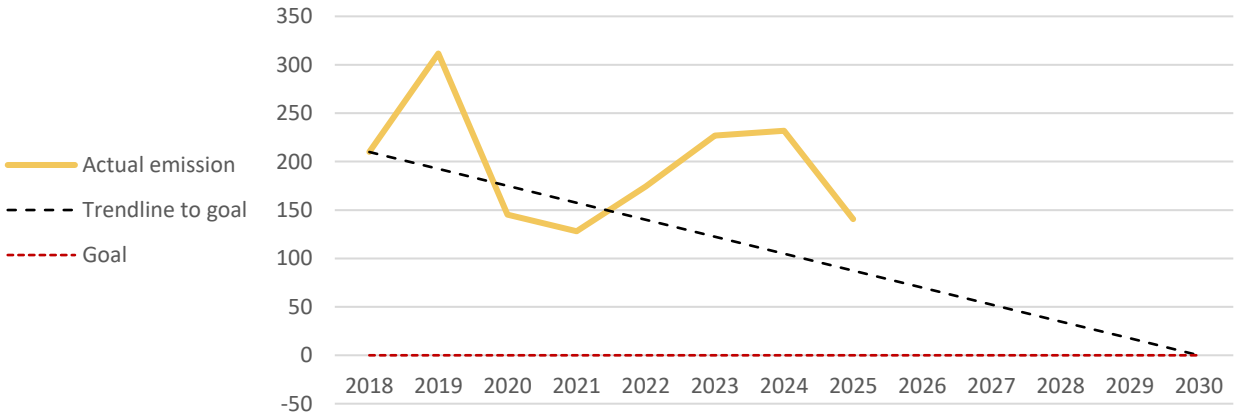
siden 2018

In 2025, SDU emitted a total of 141 tonnes of CO_2e from direct activities (Scope 1). This corresponds to a decrease of 39% compared to 2024 and a reduction of 33% since 2018. However, the development covers opposite movements in the individual categories.

The significant reduction from 2024 to 2025 is mainly due to a large decrease in emissions from refrigerants, which have been reduced by 81% in one year and 76% since 2018. SDU is committed to replacing older refrigeration and air conditioning systems and phasing in refrigerants with a lower carbon footprint, which has contributed significantly to the reduction. Conversely, emissions from petrol have increased (+23% since 2024 and +88% since 2018), while diesel has increased slightly over the past year, but remains below the 2018 level.

SDU aims to reduce scope 1 emissions to net-zero by 2030. This requires a continued phasing out of fossil fuels and a systematic electrification of transport. The single car fleet, which came into force in January 2026, will support a more efficient use of vehicles and accelerate the transition to electric vehicles. The full transition to a unified and electrified fleet is expected to be completed by 2027 and is a key element in realising the 2030 target.

Figur 2: Scope 1 development



Category (Tonnes CO_2e)	*2018*	*2024*	*2025*	*Reduction since 2024*	*2030-goal*	*Reduction since 2018*
Petrol	28	42	52	+23% ↑	-100%	+88%
Diesel oil	80	60	62	+2% ↑	-100%	-23%
Propane	2	4	3	-8% ↓	-100%	+50%
Refrigerants	100	125	24	-81% ↓	-100%	-76%
Total	**210**	**232**	**141**	**-39% ↓**	**-100%**	**-33%**

Note: Refrigerants can have a very high global warming potential (GWP). Many refrigerants are hundreds or thousands of times more harmful to the climate than CO_2 per kilogram. Therefore, even small leaks from refrigeration and air conditioning systems can result in relatively large CO_2e emissions.

04 Scope 2

3.458
total tonnes of CO_2e

-56%
since 2018

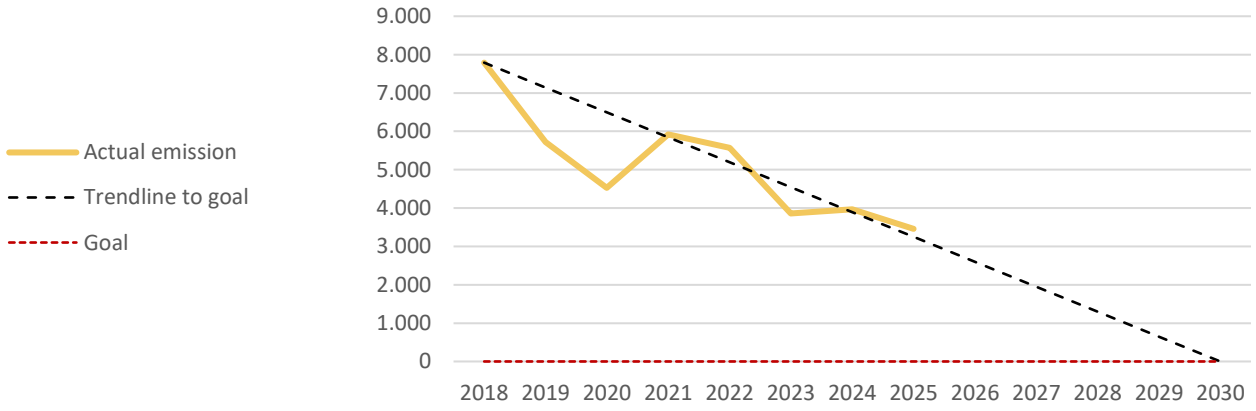
Scope 2 covers indirect emissions from energy consumption, including electricity, district heating and cooling. In 2025, SDU emitted a total of 3,458 tonnes of CO_2e from energy consumption. This corresponds to a decrease of 13% since 2024 and an overall reduction of 56% since 2018. Emissions from energy thus account for an increasingly smaller share of the university's total climate footprint.

The reduction is due to both internal initiatives and the general societal transition to greener energy sources. Denmark's increasing production of renewable energy has contributed significantly to the decrease in emission factors for electricity and heat. At the same time, SDU is working on energy efficiency and its own energy production, for example through photovoltaic systems, which today cover approx. 2% of the university's electricity consumption. In 2025, the electricity purchased also passed 84% green electricity.

The university's activity profile also has an impact on energy consumption. Research-intensive activities - including laboratories, advanced research equipment and cooling-intensive installations - result in relatively high electricity consumption. Therefore, the continued green transition of electricity production is a crucial prerequisite for reducing the climate footprint of these activities.

As part of Climate Plan 2.0, targeted efforts are therefore being made to reduce energy consumption and increase the share of green energy. These efforts include strategic procurement of electricity and heating, optimisation of technical installations and improved measurement and management of energy consumption. Together, the measures will strengthen operational optimisation and support more energy-efficient and long-term sustainable operations. The goal is climate neutrality in Scope 2 by 2030.

Figur 3: Scope 2 development



Category (Tonnes CO_2e)	*2018*	*2024*	*2025*	*Reduction since 2024*	*2030-goal*	*Reduction since 2018*
Electricity	3.617	1.857	1.620	-13% ↓	-100%	-55%
Heat	4.174	2.112	1.837	-13% ↓	-100%	-56%
Total	**7.791**	**3.970**	**3.458**	**-13% ↓**	**-100%**	**-56%**

05 Scope 3

37.183
total tonnes of CO_2e

+10%
since 2018

Scope 3 accounts for by far the largest share of SDU's total climate footprint and, in 2025, represents more than 90% of the university's total CO_2 emissions. The category covers emissions from activities outside the university's direct control, but which arise as a consequence of the organisation's activities, including the procurement of goods and services, business travel, investments, waste, and water- and energy-related activities.

In the absence of a more precise accounting method based on actual emissions from goods and services, a monetary conversion method is applied. This means that any increase in SDU's expenditure on goods and services will result in a corresponding increase in emissions. For business travel, the monetary method is not used, as actual emissions from different modes of transport can be calculated. As more accurate accounting methods are developed, these are incorporated into the climate inventory. In 2025, SDU emitted a total of 37,183 tonnes of CO_2e in Scope 3. This corresponds to an increase of 15% compared with 2024 and 10% compared with the base year 2018. The development is primarily driven by increased emissions from the procurement of goods and services, as well as higher investment and travel activity.

Scope 3 emissions are largely driven by research activities. Faculties with laboratory- and equipment-intensive research have a significant share of their emissions classified as external activities, where research-related activities account for 60–77% of the total footprint. For other areas, including the Common Administration, Social Sciences, and Humanities, emissions primarily stem from ordinary operations. Overall, 42% of Scope 3 emissions originate from externally funded research, while 58% are attributable to ordinary operations.

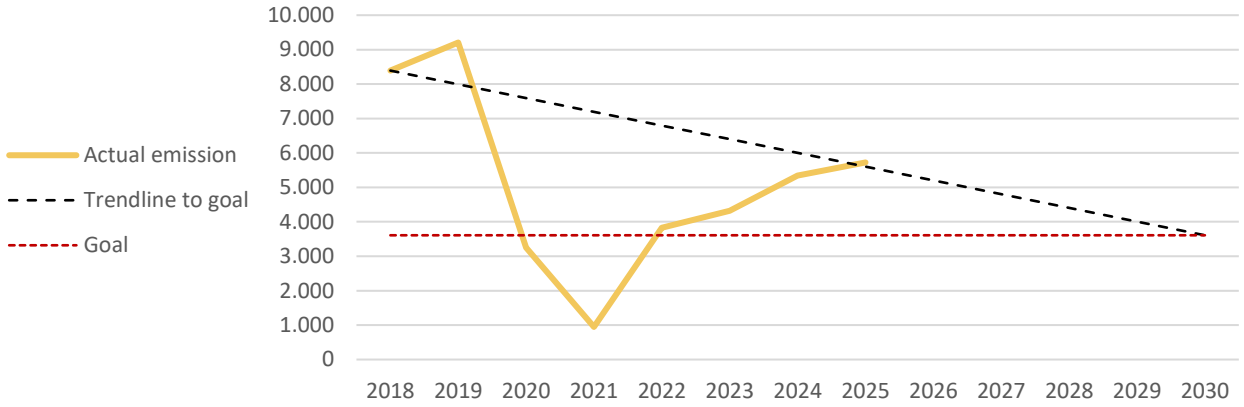
Developments in the individual categories are presented in the table below, while procurement and business travel are addressed in greater detail in the subsequent sections.

Category (Tonnes CO_2e)	*2018*	*2024*	*2025*	*Reduction since 2024*	*2030-goal*	*Reduction since 2018*
*Waste**	11	4	4	0% -	-15%	-67% 🟢
Fuel and energy related emissions	1.698	1.821	1.736	-5% ↓	-15%	+2% 🔴
Work-related travels	8.391	5.339	5.731	+7% ↑	-57%	-32% 🟡
*Water**	57	18	25	+42% ↑	-15%	-55% 🟢
Purchase of goods and services	21.772	24.155	28.532	+18% ↑	-15%	+31% 🔴
*Investments***	1.734	926	1.155	+25% ↑	-15%	-33% 🟢
Total	**33.664**	**32.262**	**37.183**	**+15% ↑**		**+10%** 🔴

*Data on waste and investments for the period 2018–2022 are based on estimates, which entails a certain degree of uncertainty. Therefore, the results should be interpreted with caution. The primary focus is on CO_2e-reducing initiatives in the years for which directly calculated data are available.

05.01 Work-related travels

Figur 4: Work-related travels development



Work-related trips are one of the largest sources of emissions in SDU's climate accounts. In 2025, work-related trips emitted 5,731 tonnes of CO_2e, an increase of 7% since 2024, but still a 32% reduction since 2018.

Although emissions remain close to the linear trend towards the 2030 target, there has been an increase since 2021 in line with higher activity levels. Work-related trips are therefore a key focus area in Climate Plan 2.0, where efforts are being made to reduce emissions through changing travel patterns, increased use of more climate-friendly modes of transport and a better decision-making basis for transport choices. Air travel continues to make up the majority of emissions in this category, accounting for around 75% of total emissions.
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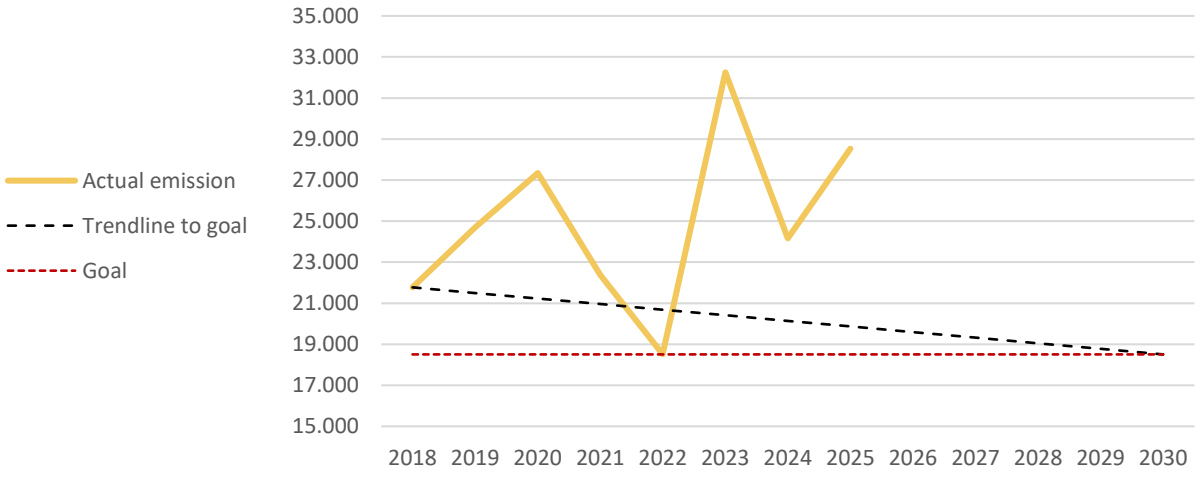
05.02 Purchase of goods and services

Purchasing goods and services is the largest single category in SDU's climate accounts, accounting for around 70% of total emissions. In 2025, this category emitted 28,532 tonnes of CO_2e, an increase of 18% since 2024 and 31% since 2018.

Figur 5: Purchase of goods and services development



Emissions are closely linked to the university's level of activity, especially investments in research, laboratories and buildings. The largest contributions come from laboratory and measurement equipment, information technology and construction-related services.

As part of Climate Plan 2.0, SDU is working with a more circular approach to resource consumption. This includes reducing unnecessary consumption, reusing existing equipment, choosing more sustainable solutions for new purchases and increasing the recycling of materials. SDU has also introduced compulsory consumption principles to support more responsible purchasing and help reduce the climate footprint of the university's overall resource consumption.

05.03 Other categories

In addition to work-related trips and procurement of goods and services, Scope 3 also includes a number of smaller categories, including fuel and energy-related activities, water and wastewater, waste and investments.

Fuel and energy-related activities cover emissions from the production and distribution of energy before it reaches the point of consumption. As this category is closely linked to energy consumption in Scope 1 and 2, emissions are primarily reduced through energy efficiency measures and increased use of green energy.

Waste, water and wastewater make up a smaller part of the total climate footprint, but are part of the work on more circular resource use. Among other things, SDU is working to improve waste management, where the goal is to increase the recycling rate from 51% to 60% by 2030, and to optimise water consumption.

Finally, investments are included as a focus area in the climate work. As part of Climate Plan 2.0, work is underway to strengthen the decision-making basis and gradually shift the investment portfolio in a more sustainable direction.

06 Dictionary

Base year: The base year that a company/organization uses as a reference for the percentage reduction in CO_2e equivalent emissions. SDU's 57% reduction by 2030 is calculated based on the premise that Denmark must reduce its CO_2e equivalent emissions by 70% in 2030 compared to the levels in 1990. Therefore, a reduction of 57% from 2018 to 2030 at SDU is equivalent to a 70% reduction from 1990 to 2030 in Denmark.

CO_2 equivalents (CO_2e): This is a collective term for the greenhouse gases: CO_2, CH_4, N_2O, HFCs, PFCs and SF_6.

Downstream activities: Activities in which SDU is the 'supplier'.

Greenhouse gases: Gases that rise into the atmosphere and contribute to the greenhouse effect.

ESG: Stands for "Environmental, Social, and Governance." It encompasses the environmental, social, and governance aspects of a company. It is often referred to as sustainability. ESG represents an organizational approach that can be used to measure and enhance a company's climate and environmental impact in relation to the United Nations Sustainable Development Goals.

Life Cycle Assessment (LCA): An inventory of CO_2e emitted for a product in its entire life cycle.

Radiative forcing (RF): Emissions of CO_2e gases are greater at altitude, where, for example, aeroplanes release a large proportion of their emissions.

Scopes: The GHG Protocol categorises emissions into three main categories: scopes 1, 2 and 3. Scope 1 is the direct emissions from company or organization. Scope 2 and 3 represent indirect emissions from a company or organization.

Upstream activities: Activities related to SDU's suppliers.

Well-to-tank: Emissions of CO_2e from the extraction and transport of fuel until it is used for refuelling.

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07 Appendix

Category	Subcategory	Data quality	Scope 1 emissions	Scope 2 emissions	Scope 3 emissions	Source of activity data	Source of emission factor
Fuel	Petrol	2,0			3,77	Marius Pedersen	GOV UK*
Fuel	Diesel	3,0	51,97		14,49	InfinityFootprint	GOV UK*
Energy	Electricity	3,0	61,56		14,63	InfinityFootprint	GOV UK*
Energy	Heat	1,9		1.620,34	868,81	Energinet forbrug, tab % fra Energinet	Energinet**, GOV UK*
Natural gases	Propane	4,0		1.837,18	837,86	Estimeret	Energinet**, GOV UK*
Fuel	Petrol	3,0	3,33		0,10	InfinityFootprint	GOV UK*
Fossil gases	HFC -gases	3,0	23,73			Caverion, InfinityFootprint	GHG GWP values
Purchase of goods and services	Purchase of goods and services	4,5			28.531,87	InfinityFootprint, InfinityFootprint	InfinityFootprint
Work-related travel	Bus	3,9			106,40	InfinityFootprint, zExpense	InfinityFootprint
Work-related travel	Flight	2,9			4.299,35	InfinityFootprint, CWT, zExpense	InfinityFootprint, CWT
Work-related travel	Ferry	3,4			7,25	InfinityFootprint, zExpense	InfinityFootprint
Work-related travel	Hotels, conference and board	1,8			709,53	InfinityFootprint	InfinityFootprint
Work-related travel	Driving own car	3,0			253,96	zExpense	GOV UK*
Work-related travel	Taxi	3,5			19,02	InfinityFootprint, zExpense	InfinityFootprint, GOV UK*
Work-related travel	Train	3,1			298,08	InfinityFootprint, CWT, zExpense,	InfinityFootprint, CWT, DSB
Work-related travel	Other	3,0			37,55	InfinityFootprint, zXpense	InfinityFootprint, GOV UK*
Investments	Investments	2,0			1.154,91	InfinityFootprint	InfinityFootprint
Water	Water and Wastewater	5,0			25,45	Forbrug fra energikonsulent	GOV UK*
Total		**3,3**	**140,59**	**3.457,52**	**37.183,03**		

* GOV UK: https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2025
** Energinet emission factors per 5 min.: https://www.energidataservice.dk/tso-electricity/CO2Emis

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