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dnsbelgium

Climate Footprint Report DNS Belgium 2021

July 2022

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1. Mission statement

DNS Belgium is a registry and non-profit organisation responsible for managing the top-level domains .be and the extensions .vlaanderen and .brussels. As part of its sustainability policy, DNS Belgium had its climate footprint (carbon footprint) for the period 2016-2021 calculated by Ecolife.

This report contains the measurement of the climate footprint of the activities of DNS Belgium for the year 2021, compatible with Bilan Carbone®, ISO 14064 and the GreenHouseGas (GHG) Protocol, with subdivision into Scope 1 (direct emissions on site), Scope 2 (indirect emissions due to use of electricity) and Scope 3 (indirect emissions due to purchase, waste and use of products and services, commuting, foreign service trips, etc.). The results are compared with those for 2019 and 2020 and with the climate plan that DNS Belgium had drawn up by Ecolife for the period 2016-2021.

The impact of the COVID 19 pandemic on the climate footprint of DNS in the year 2021 is discussed in particular.

2. Administrative data

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Site to be investigated

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Executor

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3. Climate footprint

Wat is the climate footprint?

The climate footprint measures the anthropogenic emissions of Kyoto greenhouse gases. The Kyoto gases are the greenhouse gases included in the Kyoto Protocol (1992):

- 1) Carbon dioxide CO₂ (fossil fuel combustion, cement production, land use changes);
- 2) Methane CH₄ (agriculture, production processes, natural gas leakage);
- 3) Nitrous oxide (laughing gas) N₂O (Mainly agriculture);
- 4) Fluorinated gases (mainly refrigeration systems).

What is the unit of measurement of the climate footprint?

The contribution of each greenhouse gas to the greenhouse effect depends on its global warming potential, the extent to which it blocks heat radiation and therefore contributes to global warming. The global warming potential is used to calculate the equivalent amount of carbon dioxide needed to warm the earth by the same amount over the next 100 years. For example, 1 tonne of methane is the equivalent of 34 tonnes of CO₂. Each quantity of greenhouse gas can be converted into a quantity of CO₂ equivalent (e.g. tonne CO₂-eq).

The climate footprint of an organisation is therefore expressed in *tonnes CO₂-eq per year*. The effects of the different greenhouse gases can be added up using this method. This makes the climate footprint an aggregated indicator.

What is our climate footprint?

If we divide the total global emission of greenhouse gases by the total population of 7 billion people, then each person on earth has an average climate footprint of approximately 7 tonnes CO₂-eq per year. Three quarters of this consists of carbon dioxide (CO₂), mainly from the energy sector (see Figure 1 from the World Resources Institute for breakdowns by greenhouse gas type, activity and sector).

The average climate footprint of a Belgian is about 20 tonnes of CO₂-eq per year.¹

¹ Vercalsteren A., Boonen K., Christis M., Dams Y., Dils E., Geerken T. & Van der Linden A. (VITO), Vander Putten E. (VMM) (2017), Koolstofvoetafdruk van de Vlaamse consumptie, studie uitgevoerd in opdracht van de Vlaamse Milieumaatschappij [Carbon footprint of Flemish consumption, study commissioned by the Flemish Environment Agency], MIRA, MIRA/2017/03, VITO, VITO/2017/SMAT/R. This corresponds to Eureapa, a calculation tool that maps the climate footprint of countries.

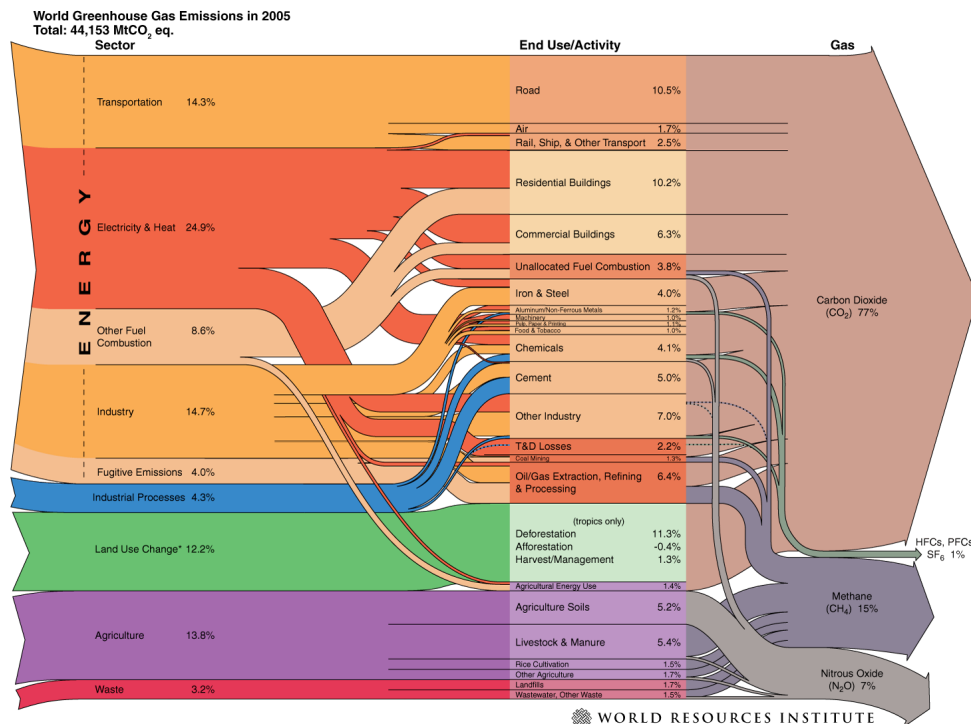


Figure 1. Breakdown of the climate footprint according to sector, activity and greenhouse gas

What is the planetary boundary for the climate footprint?

The atmosphere, the biosphere and the hydrosphere (oceans) have a limited capacity to process greenhouse gas emissions. There are currently more than 400 particles per million of CO₂ in the air, which causes the climate to warm up. Serious climate changes may occur from warming of 1.5°C above pre-industrial levels (200 years ago). If current emissions continue, this will result in a warming of about 4 degrees Celsius.

If we want to limit global warming to 1.5°C, we need to reduce the global climate footprint by a factor of 5 over the next 40 years (see Figure 2). If we take into account an increasing world population from 7 to 9 billion people, the climate footprint per person will have to be reduced even further. We then arrive at approximately 1 tonne of CO₂-eq per person per year by 2050. After 2050, emissions will have to decrease rapidly to 0 tonne CO₂-eq. This will be possible only if all energy comes from renewable sources and there are no more significant land use changes.

To reach the climate targets, an average Belgian has to reduce its climate footprint by 95% (from 20 tonnes to 1 tonne CO₂-eq). For a linear reduction pathway, this corresponds to an annual reduction of 3% or a 30% reduction within 10 years.

THE GIGATONNE GAP

By the time a new treaty to limit emissions comes into force in 2020, the world will have diverged further from the path needed to limit warming to 2 °C by 2100, according to an analysis by Climate Action Tracker.

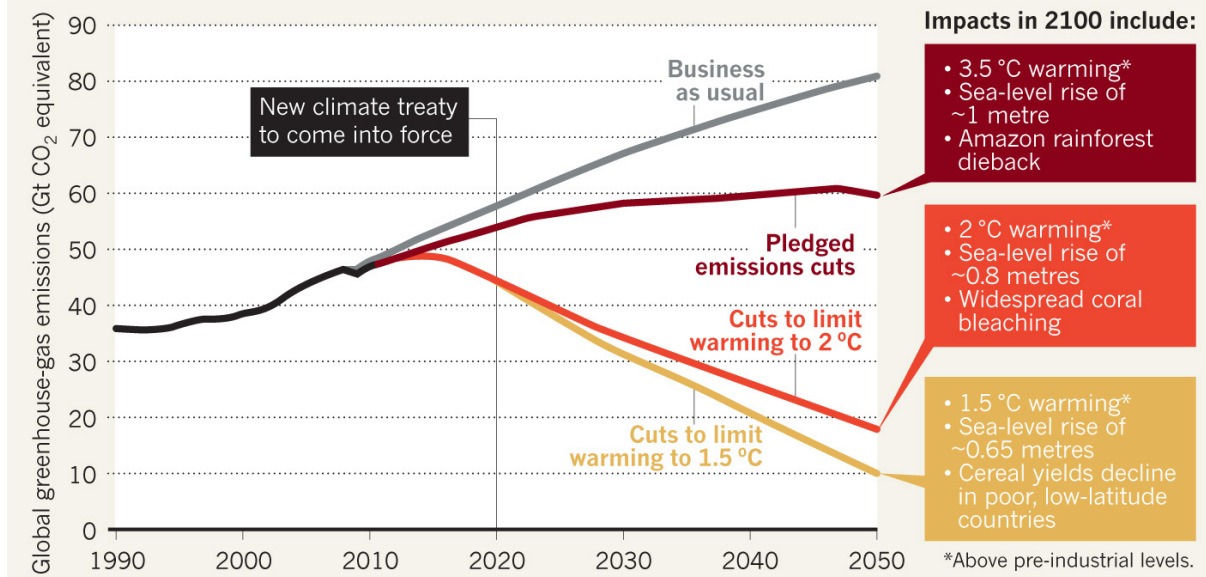


Figure 2. Reduction of the climate footprint according to climate targets²

Why calculate the climate footprint of an organisation?

Of all the footprint indicators, the climate footprint is by far the most used by companies and governments. The standardisation of the climate footprint is also methodically the strongest. Companies also pay more attention to their climate footprint for two reasons: financial vulnerability and social responsibility.

A high climate footprint creates financial vulnerability for a company because the climate footprint is strongly linked to the use of fossil fuels and fossil fuel prices have risen sharply recently. Certain forms of CO₂ taxation are expected to increase in the future. Measuring the climate footprint provides insight into the expected future costs of greenhouse gas emissions and fluctuating energy prices.

Measuring a company's climate footprint also fits in with Corporate Social Responsibility (CSR), global climate goals and the United Nations Sustainable Development Goals (SDGs). Reducing the climate footprint is also a social responsibility of a company.

The financial vulnerability and social responsibility of the company must be taken duly into account when determining the business activities included in the climate footprint. Greenhouse gas emissions for which the company is not responsible or which do not entail financial vulnerability for the company are not included in the company's climate footprint.

For organisations, projects and products, the climate footprint was standardised in ISO standards 14064-1 (organisations and companies), 14064-2 (projects) and 14067 (products). Furthermore, the Bilan Carbone® methodology (www.associationbilancarbone.fr) is more or less the reference in Europe for measuring the climate footprint of companies and regions. The Bilan Carbone® method is in line with ISO standards and the Greenhouse Gas Protocol.

What is the climate footprint of an organisation?

² Tollefson, J. (2011) Durban maps path to climate treaty, *Nature* 480, 299–300.

The climate footprint consists of direct emissions on the site itself and indirect emissions outside the company's site. These indirect emissions can be the result of energy consumption on site or activities outside the site. According to the ISO standard, the climate footprint is divided into three scopes.

- **Scope 1** consists of direct greenhouse gas emissions on site or from the company's vehicles. This includes the company's own fuel consumption for heating, machines and mobility, as well as any leaks of refrigerant gases from cooling systems.
- **Scope 2** comprises indirect greenhouse gas emissions as a result of the direct consumption of purchased electricity on the site. These indirect emissions are the emissions from the electricity production facilities.
- **Scope 3** includes all other indirect emissions for the production of purchased products (goods and services), waste processing, commuting, transport and service trips, excluding the company's vehicles.

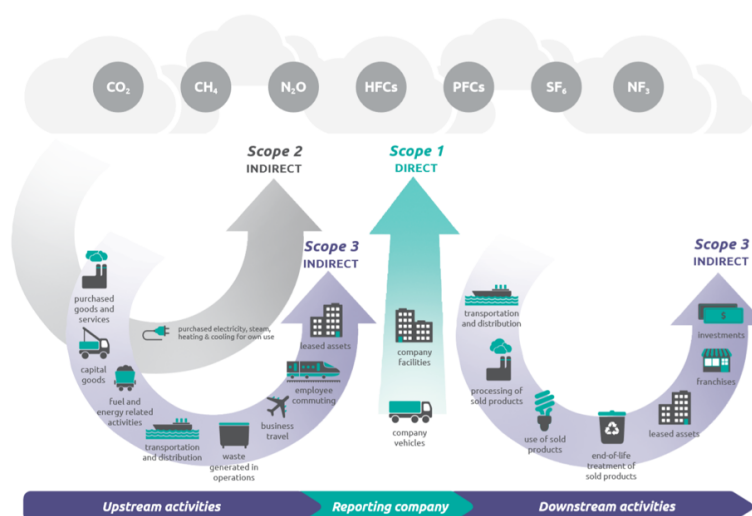


Figure 3. Scope 1, 2 and 3 of the climate footprint

4. Data processing

The tables below show the consumption data of DNS Belgium for operating year 2021 supplied by DNS Belgium (Mr Arnaud Recko, Sustainability Coordinator) and processed by Ecolife (Mr Thomas Beyen, Footprinting Project Manager). The data processing and results of operating years 2019 and 2020 were described in detail in previous reports.

Impactcategory		Quantity			Unit	Remarks data 2020	Remarks data 2021
		2019	2020	2021			
General	Amount FTE	32	32,2	32	FTE		
	Amount of domain names	1638302	1712318	1752839	#		
Energy	Ubicenter electricity, office space, grey electricity	0	0		kWh/y		
	Ubicenter electricity, office space, green electricity	73313	56403	58440	kWh/y	According to Eneco bills	According to Eneco bills
	Ubicenter electricity, common area, grey electricity	39470	15018	15018	kWh/y	According to Ubicentener bill, DNS-part	According to Ubicentener bill, DNS-part
	datacenter electricity	17607	0	0	kWh/y	Same as 2019	Same as 2020
	gas Ubicenter, common area	13383	2753	2753	kWh/y	According to Ubicentener bill, DNS-part	According to Ubicentener bill, DNS-part
Garbage	non-recyclable garbage	625	140	150	kg/y	28 bags, 5 kg per bag	30 bags, 5 kg per bag
	plastics and recyclable metal	288	36	36	kg/y	9 bags, 4 kg per bag	9 bags, 4 kg per bag
	glass	9,5	2,3	0,0	kg/y	9 pieces, 0,25 kg per piece	0 pieces, 0,25 kg per piece

	paper	371	24	54	kg/y	7 bags, 3.4kg per bag	16 bags, 3.4kg per bag
	greens and garden garbage	64	22	8	kg/y	11 bags, 2kg per bag	4 bags, 2kg per bag
Inputs	Printing paper	150	10	0	kg/y	same ratio as 2019	same ratio 2020
	arrived post	221	14	0	kg/y	according to paper garbage	according to paper garbage
	ICT-services	65	/	/	euro/y	N/A	N/A
	technical maintenance, cleaning, security, pestcontrol	7208,79	6946	9449	euro/y	According to internal bills of Ubicenter	According to internal bills of Ubicenter
	small office equipment	1344,3	/	/	euro/y	N/A	N/A

Table 1. Basic data on energy, waste and inputs

		2019	2020	2021			
Mobility	large cars (SUV, small bus)	11622	1680	0	km/y	Driven kilometers for which no fuel use volume is known	Driven kilometers for which no fuel use volume is known
	medium car	5590	7465	4305	km/y	Driven kilometers for which no fuel use volume is known	Driven kilometers for which no fuel use volume is known
	low emission cars	3605	5208	640	km/y	Driven kilometers for which no fuel use volume is known	Driven kilometers for which no fuel use volume is known
	electrical cars (green electricity)			512	km/y		with green current
	Litre of Diesel	#REF!	11744	10289	l	Litre of fuel used on the fuelcards	Litre of fuel used on the fuelcards
	Litre of Benzine	#REF!	4913	6557	l	Litre of fuel used on the fuelcards	Litre of fuel used on the fuelcards
	train	5520	1262	8690	km/y	Public transport functioning for 2,5 months (untill mid march, lockdown from mid march untill end 2020)	Public transport as informed by the personnel survey

	bus	300	62,5	0	km/y	Public transport functioning for 2,5 months (untill mid march, lockdown from mid march untill end 2020)	Public transport as informed by the personnel survey
	consultants, cars	/	/	/	km/y	Recorded in driven kilometers	Recorded in driven kilometers
	bike	29188	6080,83333	4184	km/y	Public transport functioning for 2,5 months (untill mid march, lockdown from mid march untill end 2020)	Public transport as informed by the personnel survey
International service travel	plane, economy class, <1000 km	6180	8517	0	km/y	Based on Omnia Travel travel data	No international service travel in 2021
	plane, economy class, 1000-2000 km	62747	0	0	km/y		
	plane, economy class, 2000-3000 km	0	0	0	km/y		
	plane, economy class, >3000 km	48274	17236	0	km/y		
	plane, first/business class, <1000 km	0	0	0	km/y		
	plane, first/business class, 1000-2000 km	0	0	0	km/y		
	plane, first/business class, 7000-8000 km	0	0	0	km/y		
	train Netherlands	3250	0	0	km/y		
	train Germany	622	0	0	km/y		
	train UK	1483	0	0	km/y		

	train France and Switzerland	5553	3855	0	km/y		
Infrastructure and properties	Buildings, floor surface area	909	909	909	m ²	Buildings same as 2019, parking only 1/3 use in comparison to 2019	Buildings same as 2020, parking only 1/3 use in comparison to 2019
	common areas, floor surface area	100	100	100	m ²		
	parkings	110	37	37	m ²		
	ICT-hardware	36576	34259	77739	euro	According to ICT purchase value	According to ICT purchase value, with increased depreciation term of 4 years.
	service cars	25	23	21	cars	5 years depreciation term	5 years depreciation term

Table 2. Basic data on movements and properties

5. Results

The table below shows the climate footprint of DNS Belgium in 2021 by impact category and ISO scope.

The total footprint for 2021 amounted to 121 tonnes of CO₂-eq. This comes to 3.8 tonnes per FTE or 69 grams of CO₂-eq per domain name. The latter corresponds to direct fuel emissions from driving about half a kilometre with an average car.

Carbon footprint					
Impact categories	ISO Scope 1 (tonnes CO ₂)	ISO Scope 2 (tonnes CO ₂)	ISO Scope 3 (tonnes CO ₂)	TOTAL (tonnes CO ₂)	%
Direct energy consumption of buildings	5	6	0	11	9.2%
Purchases and inputs			1	1	0.8%
Waste processing			0	0	0.0%
Employee mobility	43		9	51	41.8%
Travel abroad on business			0	0	0.0%
Fixed tangible assets			58	58	48.2%
TOTAL	48 (39.7%)	6 (5.0%)	68 (56.2%)	121 (100%)	
per domain name					0.07 kg CO₂
Per FTE					3.8 tonnes CO₂

Table 3. Result for climate footprint 2021

Scope 1 emissions, namely the combustion of natural gas for heating and the fuel for the service vehicles, represent a relevant share (39.7%) of the total climate footprint. The direct energy consumption of the buildings includes the electricity consumption of data centres (Amazon Web Services (AWS)). Employee mobility includes commuting between home and work, private trips in company cars and domestic business trips by car. In 2021, there were no business trips abroad.

Scope 2 emissions from direct energy consumption in the buildings account for only a small share (5.0%) of the total climate footprint.

The largest part of the climate footprint (56.2%) is determined by **Scope 3 emissions**, mainly from fixed tangible assets and mobility (commuting and trips with company vehicles). In 2021, the depreciation period for ICT equipment was extended from 3 to 4 years. There are also two fewer business trips in 2021. Because of the large investment in the ICT equipment, there is still an increase in the climate footprint of the fixed tangible assets compared with 2020.

In waste processing, 0.1 tonnes of CO₂ avoided through energy recovery from waste incineration of residual waste (avoiding emissions from new electricity generation) and recycling of paper and PMD (avoiding emissions from the production of new paper, plastic and metals). There is only a very small carbon footprint from waste disposal (0.8%) due to the limited presence of employees in the office.

Figure 4 below shows the share of each impact category of the total climate footprint. Fixed tangible assets had the smallest decrease due to the COVID 19 pandemic, and still constitute the main emission category with 48.2%. Employee mobility is the second largest contributor to the climate footprint at 41.8%.

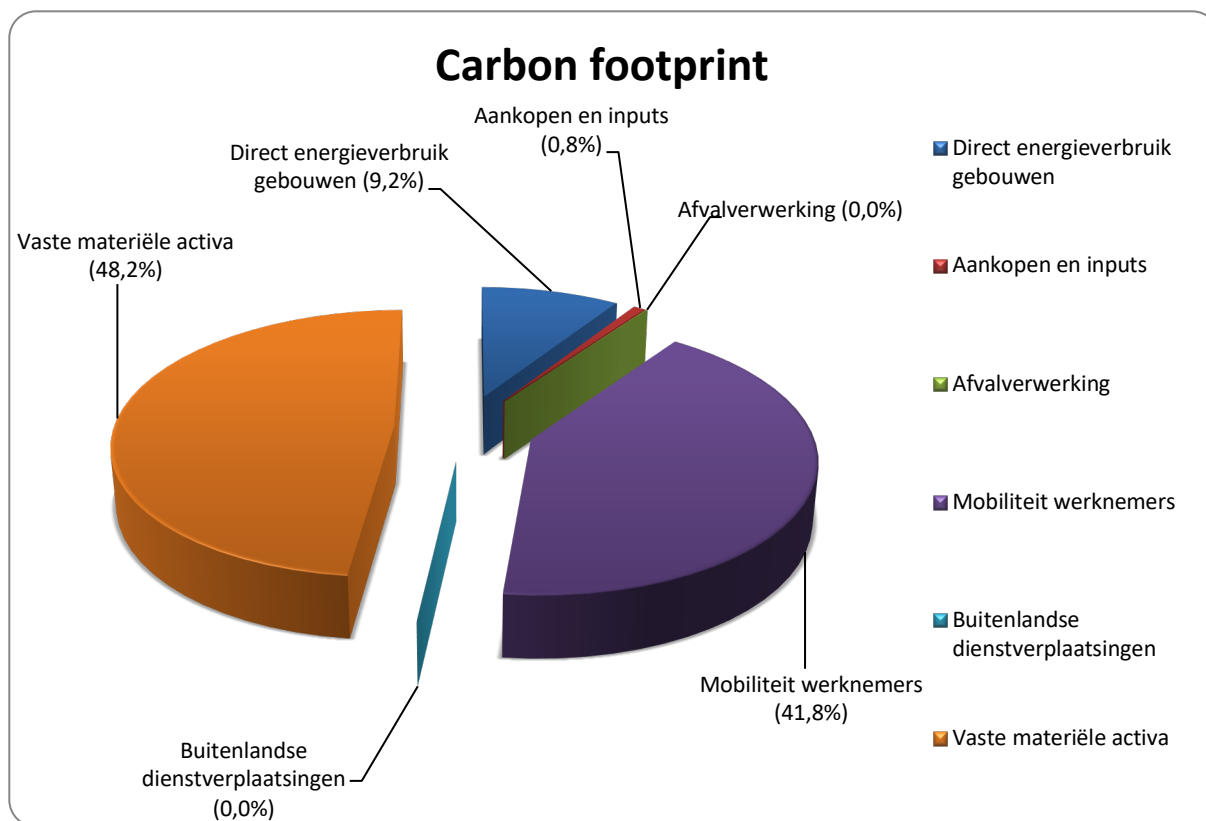


Figure 4. Breakdown of the climate footprint according to impact category

6. Comparison with 2018-2021 and the climate plan

The table below shows the comparison of the climate footprint of DNS Belgium for operating years 2019, 2020 and 2021.

Carbon footprint				%	%	%
Impact categories	2019 (tonnes CO ₂)	2020 (tonnes CO ₂)	2021 (tonnes CO ₂)	reductio 2018-2019	reductio 2019-2020	reduction 2020-2021
Direct energy consumption of buildings	15	11	11	0.0%	-28.6%	2.8%
Purchases and inputs	3.5	0.8	0.9	-1.3%	-77.7%	17.8%
Waste processing	0.3	0.1	0.1	-12.5%	-79.1%	7.3%
Employee mobility	87	52	51	-29.5%	-39.9%	-2.9%
Travel abroad on business	24	6	0	18.1%	-75.9%	-100.0%
Fixed tangible assets	57	54	58	14.9%	-6.1%	8.8%
TOTAL	187	123	121	-11.9%	-34.1%	-1.8%
per domain name	0.12 kg CO ₂	0.07 kg CO ₂	0.07 kg CO ₂	-11.9%	-38.3%	-4.0%
per FTE	5.8 tonnes CO ₂	3.8 tonnes CO ₂	3.8 tonnes CO ₂	-17.4%	-34.5%	-1.2%

Table 4. Comparison of footprint 2019-2021

A slight decrease of 1.8% in the total climate footprint 2021 is observed compared to 2020. Compared to 2019, this is a decrease of 35.3% (from 187 tonnes of CO₂ to 121 tonnes of CO₂) due to changed working conditions as a result of the COVID 19 pandemic that continued to impact the operation of DNS Belgium in 2021.

The main differences with the previous years, 2019 and 2020, are:

- Teleworking from home was still widely used in 2021. The energy consumption of teleworking was included in the climate footprint of 2021.
- There were no business trips abroad in 2021, neither by train nor by plane, resulting in a complete decrease (-100%) compared with 2020.
- Employee mobility (commuting) in 2021 decreased less strongly compared with 2020 (-2.9%), probably because of the fuel card for private use. A strong decrease can however be noted in the kilometres travelled by consultants. Next to fixed tangible assets, mobility remains one of the largest emission items.
- The additional investments in new ICT equipment in 2021 will slightly increase the footprint of the fixed tangible assets (8.8%) compared with 2020.

Figure 4 below shows the development of the climate footprint of DNS Belgium in comparison with reference and reduction scenarios. There are two business-as-usual reference scenarios.

- The **first reference scenario** starts from the footprint according to the baseline measurement in 2016 and extrapolates this footprint to the following years based on the number of FTEs. If the workforce increases by 10% therefore, the footprint in the business-as-usual scenario also increases by 10%.
- The **second reference scenario** uses the number of domain names to extrapolate to the following years.

Based on these two reference scenarios, **two reduction scenarios** are determined that correspond to international climate targets, in particular with a limitation of the global CO₂ concentration to 430 ppm. These scenarios correspond to an annual reduction of the footprint of the reference scenarios by 3%. Furthermore, Ecolife relied on simulations to develop another reduction scenario for DNS Belgium in a climate plan (see 'DNS Belgium Climate Plan Report 2016-2017' (2017)).

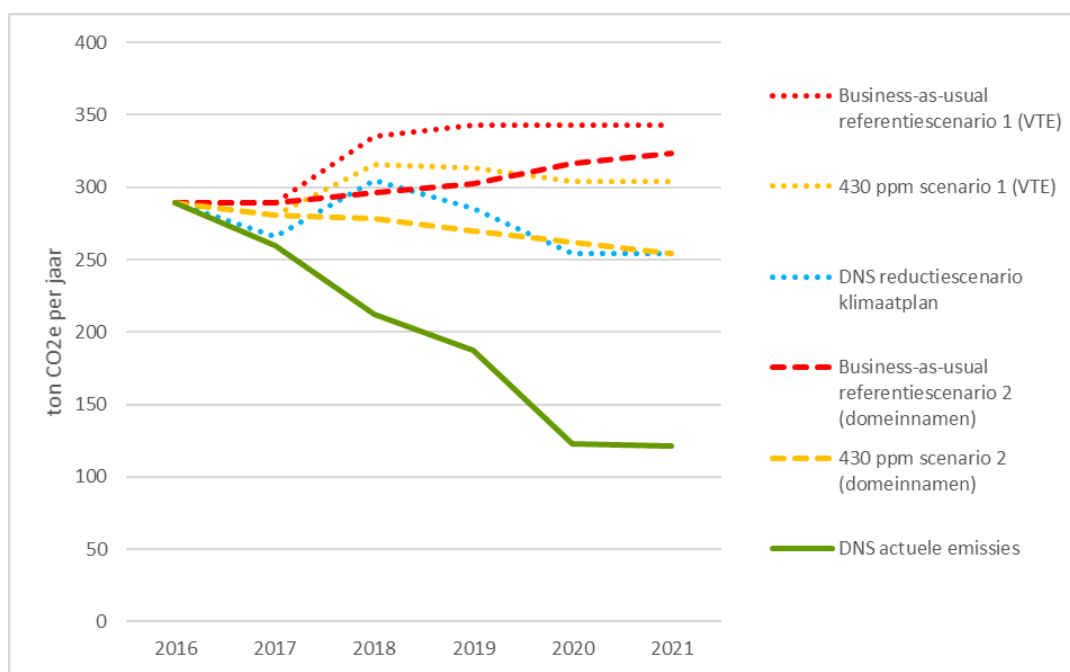


Figure 5. Development of the current footprint in comparison with reduction scenarios

The strong decrease of the current climate footprint of DNS Belgium is striking. In 2021, that footprint was half of the reduction scenario of DNS Belgium's own climate plan. This can be explained by the measures taken by DNS Belgium to reduce its climate footprint and the changed working conditions as a result of the COVID 19 pandemic.

In 2022, the climate footprint may increase again due to an increase in the number of service trips as a result of the end of the travel restrictions imposed during the COVID 19 pandemic. The target for DNS Belgium should be not to increase beyond 2019, the last full year before the COVID 19 pandemic.

A new climate plan can be drawn up for the period 2022 - 2030.

7. Points of attention

Due to the COVID 19 pandemic, there were no missions abroad in 2021. In the future, business trips can be replaced by digital consultations as much as possible, so that emissions will not rise back to the pre-COVID 19 period.

A reduction has been achieved in mobility, partly because of teleworking from home. Further embedding teleworking in the working culture of DNS Belgium could bring about a permanent reduction in emissions from commuting.

Carbon offsetting also remains an option: for 2021 DNS Belgium can become climate neutral by offsetting 121 tonnes of CO₂ (in accordance with the recommendations in the climate plan), as it did from 2016 to 2020.

8. Summary and conclusion

DNS Belgium has a climate footprint of 121 tonnes of CO₂-eq in 2021. DNS Belgium has a climate footprint of 121 tonnes CO₂-eq in 2021. This is a reduction of 1.8% compared with the previous year and 35.3% compared with 2019, the reference year for the COVID 19 pandemic. This more than meets the climate target for 2021. The footprint per FTE is 3.8 tonnes of CO₂-eq and per domain name 69 grams of CO₂, as much as the direct CO₂ emission of driving an average car half a kilometre.

Approximately half of the climate footprint (41.8%) is attributable to mobility by car. Renewing the car fleet with even more economical or electric cars can further reduce the footprint. This was started in 2021 by only offering electric company cars to employees. Also, the expansion of the successful bicycle allowance scheme in the company will further reduce the mobility footprint. In addition, it is recommended to plan only absolutely necessary trips abroad after 2021, even when such travel is expected to become more common again.

The COVID 19 pandemic has led to drastic changes in the working culture, including at DNS Belgium. Working methods with a positive impact on the climate footprint, such as teleworking by employees from home and digital consultation with foreign partners, will be integrated into the working culture of DNS Belgium in 2021. As a result, the climate footprint is not expected to return to its pre-COVID 19 levels.

It is recommended that a new climate plan be drawn up for the period 2022 - 2030.



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Ecolife is a knowledge centre for footprinting and ecological behavioural change. Ecolife helps governments, organisations and companies to achieve their ecological goals.

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