The Planet

The long-term goal of Castellum's environmental and climate efforts is to achieve net-zero carbon emissions by 2030 at the latest. Preventing global warming based on its own operations is one of the company's key issues.

Castellum's commitment

Castellum will responsibly and efficiently reduce resource use and carbon emissions that cause global warming.

Efficient energy use

Castellum works continually to reduce its energy use. Its efforts focus on both optimising operations and investing in energy-efficient and renewable technologies. 94 energy efficiency projects were carried out during the year with a total investment of MSEK 86.

Energy use is continually monitored and analysed. Measures are taken and given priority based on the greatest potential for efficiency enhancements. Expansion is under way for Castellum's own portal for web-based property monitoring, to check values for operations, alarms, elevators and entries. This results in savings of both energy and time, and creates customer benefits in the form of better services through preventive measures. At present, 361 (385) properties representing 2,559,000 (2,851,000) square metres are connected to the portal. The decrease in the number of connected properties during the year is due to sales of properties.

In 2021, the normalised energy consumption for heating and property electricity in the like-for-like portfolio remained unchanged – meaning a change of 0% (–12). The major savings of 12% that were seen in the preceding year were driven in part by the pandemic. Despite some people returning to their workplaces in 2021, Castellum has been able to keep its energy use down as a result of active routine efforts and continued focus on efficiency enhancement measures. In 2021, absolute normalised energy use in the total asset portfolio increase by 6% (decrease: 8) per square metre. The increase is due primarily to portfolio shift and acquisitions in Finland during the year, as well as a colder year compared with 2020 resulting in increased heating consumption. From a long-term perspective, however, total energy use has decreased by a total of 34% (37) per square metre since 2007.

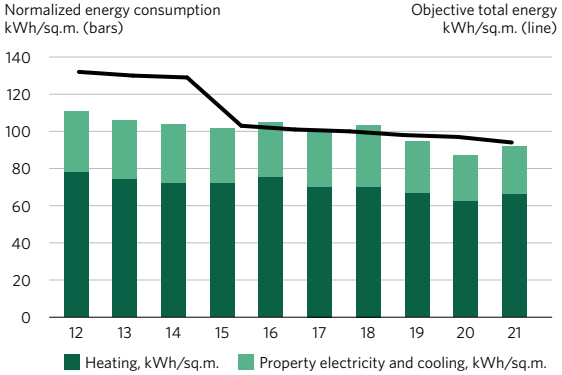
Castellum's actual use of heating, non-degree day corrected, corresponded to 65 kWh (50) per square metre and can be compared with the industry average of 112 kWh (117) per square metre (the Swedish Energy Agency's reference value for heating premises). This means that Castellum's buildings are 42% (57) more energy efficient than the Swedish average for these premises. In all, normalised heating use in the like-for-like portfolio increased 2% (decrease: 13) in 2021, while use of property electricity and cooling decreased 4% (7).

95% (95) of the total energy use is fossil-free. Since 2001, we purchase only renewable electricity in the Group, and in many of our locations we also purchase renewable district heating where possible.

Approximately 15% (13) of Castellum's customers are responsible for their own heating and 23% (23) for electricity on the property.

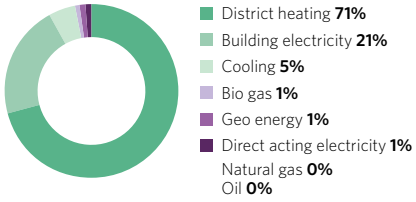
Since 2020, all our vehicles have been non-fossil fuel powered. This means that all service cars, carpool vehicles and company cars used by Castellum are either electric or run on biofuel.

TARGET AND OUTCOME, ENERGY CONSUMPTION PER SQ. M.



The actual change in the like-for-like portfolio was 0%, degree-day adjusted. Castellum began systematically measuring energy consumption and heating in 2007, which is why it is utilised as a comparison year.

DISTRIBUTION OF TOTAL ENERGY CONSUMPTION, 2021



The Planet **emissions**

Emissions

Castellum monitors its greenhouse gas emissions annually in accordance with the Greenhouse Gas (GHG) Protocol. 2017 was chosen as the base year for Castellum's Science Based Target of net-zero CO_2 emissions by 2030. This is because it was the first year when a complete Scope 3 inventory could be carried out. For scopes 1 and 2, and for business travel, there is comparable data back to 2007.

The Conversion Factors table on page 180 reports on the activities, assumptions and conversion factors forming the basis for reporting Castellum's energy use and greenhouse gas emissions. It is worth noting that in 2021, the database for Scope 3 emissions that are calculated based on the costs of the current period were replaced with a newer database. The previous database with emissions factors from the World Input Output database, which is from 2013, has been replaced with a newer database – Exiobase 3. This database is considered to be the most reliable today for these types of calculations, and has updated emissions factors that better take economic activities into account with improved sectoral granularity. Previous years have not been updated.

Complete inventory of greenhouse gas emissions (GRI 305-1, 305-2, 305-3, 305-4, 305-5, GHG-Dir-Abs, GHG-Indir-Abs [market-based], GHG-Indir-Abs [facility-based])

	2021		2020		2019		2018		2017		
	Absolute emissions	Intensity	Absolute emissions	Intensity	Absolute emissions	Intensity	Absolute emissions	Intensity	Absolute emissions	Intensity	Calculation method[1)]
Scope 1											
Direct emissions (GHG-Dir-Abs)[2)]	322	0.1	284	0.1	458	0.1	675	0.2	1,122	0.3	Fuel-based
Biogenic emissions (GHG-Dir-Abs)	342	0.1	339	0.1	535	0.1	664	0.2	924	0.2	Fuel-based
Scope 2											
Market-based method (GHG-Indir-Abs)	5,403	1.4	3,991	0.9	5,764	1.4	4,362	1.00	6,133	1.3	Fuel-based
Market-based method (GHG-Indir-Abs)	16,418	4.3	18,128	4.1	37,222	8.8	47,818	11.3	48,560	11.0	Fuel-based
Scope 1+2 (market-based method)	**5,725**	**1.5**	**4,275**	**1.0**	**6,222**	**1.5**	**5,037**	**1.2**	**7,255**	**1.6**	
Scope 1+2 (facility-based method)	**16,740**	**4.4**	**18,412**	**4.2**	**37,680**	**8.9**	**48,493**	**11.5**	**49,682**	**11.3**	
Scope 3[3)]											
1. Goods and services purchased	71,130	18.5	274,307	61.8	266,860	62.8	273,279	64.6	322,279	73.6	Cost-based
3. Fuel- and energy-related activities[4)]	3,452	0.9									Fuel-based
4. Transportation and distribution, upstream	465	0.1	227	0.1	172	0.1	166	0.1	289	0.1	Cost-based
5. Waste generated in the operation	2,043	0.5	2,717	0.6	2,161	0.5	2,038	0.5	1,839	0.4	Cost-based
6. Business travel	35	0.0	49	0	127	0.0	151	0.0	138	0.0	Average method
7. Employee commutes	169	0.0	160	0	166	0.0	158	0.0	156	0.0	Average method
8. Leased assets, upstream	20	0.0	88	0	68	0.0	59	0.0	51	0.0	Cost-based
13. Leased assets, downstream[5)]	8,860	2.3	12,627	2.9	54	0.0	54	0.0	54	0.0	Average method
Biogenic emissions			—	—	—	—					
Scope 3	**86,174**	**22.4**	**290,175**	**65.4**	**269,608**	**63.4**	**275,905**	**65.2**	**324,806**	**74.1**	
Scope 1+2+3 (market-based method)	**91,899**	**23.9**	**294,450**	**66.4**	**275,830**	**64.9**	**280,942**	**66.4**	**332,061**	**75.7**	
Scope 1+2+3 (facility-based method)	**102,914**	**26.8**	**308,587**	**69.6**	**307,288**	**72.3**	**324,398**	**76.7**	**374,488**	**85.4**	

Absolute emissions are indicated in metric tons of CO_2eq, and intensity in kg CO_2e per square metre.

2017 is set as the base year for Castellum's Science Based Target, since this was the first year that Castellum measured the Group's entire emissions in Scope 3. No material emissions of greenhouse gases have been excluded.

1. According to GHG Protocol Corporate Value Chain Standard.
2. In addition to fuel consumption in properties and refrigerants, also includes emissions from Castellum's own vehicles of 23 metric tonnes of CO_2e in 2021 compared with 14 metric tonnes of CO_2e in 2020.
3. The following Scope 3 emissions are not considered relevant for Castellum (approved by SBTi): 2. Capital goods, 9. Downstream transportation and distribution, 10. Processing of sold products, 11. Use of sold products, 12. End processing of sold products, 14. Franchises, 15. Investments.
4. In 2021, Castellum updated and calculated emissions for fuel- and energy-related activities.
5. The emissions factor has been updated in accordance with the residual mix emission factor of each country from Grexel's database from 2020 and onward. We believe that Grexel's residual mix emissions factor reflects carbon emissions from electricity consumption better than the Swedish Energy Markets Inspectorate's weighted residual mix emissions factors that were used in previous years. This has no significant impact on the total carbon footprint – less than 5% – which is why we have not updated either previous years or the base year.

Scope	Activity	Activity data	Conversion factor
Scope 1	Oil consumption at properties where the tenant does not have separate metering or billing of actual consumption.	Internal collection of statistics relating to consumption at properties heated by oil.	Heating oil: 0.28 tonnes CO_2e/MWh Source: GHG Protocol, GWP 2014 IPCC Fifth Assessment Report
Scope 1	Natural gas consumption at properties where the tenant does not have separate metering or billing of actual consumption.	Internal collection of statistics relating to consumption at properties heated by natural gas.	Natural gas: 0.203 tonnes CO_2e/MWh Source: GHG Protocol, GWP 2014 IPCC Fifth Assessment Report
Scope 1	Business travel with company vehicles.	Travel with company vehicles is based on meter readings. Greenhouse gas emissions are based on distance covered and on combined-cycle fuel consumption for each vehicle.	Gasoline: 0.0002375 tonnes CO_2e/km Diesel: 0.0002798 tonnes CO_2e/km Biofuel: 0 tonnes CO_2e/km CNG: 0.0000505 tonnes CO_2e/km Electric hybrid: 0.00005 tonnes CO_2e/km Electric car: 0 tonnes CO_2e/km Source: GHG Protocol, GWP 2014 IPCC Fifth Assessment Report
Scope 1	Refrigerants.	Refrigerant emission data is collected from the mandatory refrigerant report of each respective property.	Statistics from Svenska Kyl & Värmepumpsföreningen. The data is reported in connection with the Fluorinated Greenhouse Gas regulation, EU/517/2014, and appurtenant Swedish legislation, which is declared based on applicable practices.
Scope 2	Consumption of electricity in properties where the tenant does not have separate measurement or invoicing of actual consumption.	Internal collection of statistics for properties where Castellum is responsible for electricity use.	Origin-labelled renewable electricity: 0 g CO_2e/MWh Residual mix: Sweden: 0.02318 tonnes CO_2e/MWh Denmark 0.4277 tonnes CO_2e/MWh Finland 0.2682 tonnes CO_2e/MWh Source: Grexel
Scope 2	Consumption of district heating and district cooling in properties where the tenant does not have separate measurement or invoicing of actual consumption.	Internal collection of statistics for properties where Castellum is responsible for district heating and district cooling. District heating consumption is adjusted based on SMHI degree days and vacancy rate.	Statistics from respective district heating providers.[1)]
Scope 3	Business travel, taxi.	The majority of the data from suppliers and manual retrieval.	0.000147 tonnes CO_2e/km Source: GHG Protocol, GWP 2014 IPCC Fifth Assessment Report
Scope 3	Business travel, air.	The majority of the data from suppliers and manual retrieval.	Nordic region: 0.000171 tonnes CO_2e/km Europe: 0.000092 tonnes CO_2e/km World: 0.000083 tonnes CO_2e/km Source: GHG Protocol, GWP 2014 IPCC Fifth Assessment Report
Scope 3	Business travel, train.	The majority of the data from suppliers.	0.0000002 tonnes CO_2e/km Source: SJ
Scope 3	Business travel, private vehicles.	Internal monitoring of kilometres driven on business with private vehicles.	0.000147 tonnes CO_2e/km Source: GHG Protocol, GWP 2014 IPCC Fifth Assessment Report
Scope 3	Employee commutes.	Employee commutes in km are estimated based on data from Transport Analysis combined with emission factors from Naturvårdsverket, the Swedish Environmental Protection Agency.	Source: Naturvårdsverket and Transport Analysis
Scope 3	Assets leased downstream.	Calculated from a template of tenants' energy use.	Residual mix: Sweden: 0.05022 tonnes CO_2e/MWh Denmark 0.46521 tonnes CO_2e/MWh Finland 0.31013 tonnes CO_2e/MWh Source: BELOK, Grexel
Scope 3	Fuel- and energy-related activities.	Calculated using actual monitoring of energy use combined with emissions factors from 2021 from the UK Department for Environment, Food and Rural Affairs (Defra).	Country-specific emissions factors Source: Defra
Scope 3	Other GHG emissions.	The carbon footprint is calculated based on how much is spent on suppliers from various industry sectors (e.g. transportation, travel, consultants, etc.). Emissions are then calculated using sector data from Exiobase 3 in accordance with the recommendations of the Greenhouse Gas Protocol for a Scope 3 screening.	Source: Exiobase 3

1. Since the district heating suppliers' conversion factor for the preceding year (2021) was only calculated in 2022, the conversion factor for 2020 is used for emissions linked to traditional district heating.

The Planet emissions, cont.

Total greenhouse gas emissions by property type (GHG-Dir-LfL, GHG-Indir-LfL, GHG-Int)

		Like-for-like (LfL) comparison								
		Offices			Logistics			Retail		
	Measurement unit	2021	2020	% change	2021	2020	% change	2021	2020	% change
Scope 1, Direct emissions (GHG-Dir-LfL)	Tonnes CO_2e	120	348	–66%	14	81	–83%	11	18	–39%
Scope 2, Indirect emissions (market-based method, GHG-Indir-LfL)	Tonnes CO_2e	2,068	1,995	4%	337	399	–16%	223	243	–8%
Scope 2, Indirect emissions (facility-based method, GHG-Indir-LfL)	Tonnes CO_2e	7,717	8,860	–13%	1,548	1,818	–15%	914	982	–7%
Scope 1, Direct emissions + Scope 2, Indirect emissions (facility-based method, GHG-Int)	Kg $CO_2e/m^2/yr$	7,837	9,208	–15%	1,562	1,899	–18%	925	1,000	–8%

		Like-for-like (LfL) comparison								
		Public sector properties			Light industry			Castellum total		
cont.	Measurement unit	2021	2020	% change	2021	2020	% change	2021	2020	% change
Scope 1, Direct emissions (GHG-Dir-LfL)	Tonnes CO_2e	11	102	–89%	0	0	—	156	549	–72%
Scope 2, Indirect emissions (market-based method, GHG-Indir-LfL)	Tonnes CO_2e	1,080	980	10%	174	240	–28%	3,882	3,857	1%
Scope 2, Indirect emissions (facility-based method, GHG-Indir-LfL)	Tonnes CO_2e	2,662	2,901	–8%	653	776	–16%	13,494	15,337	–12%
Scope 1, Direct emissions + Scope 2, Indirect emissions (facility-based method, GHG-Int)	Kg $CO_2e/m^2/yr$	2,673	3,003	–11%	653	776	–16%	13,650	15,886	–14%

The table shows emissions from property management, meaning emissions from fuel and refrigerants in Scope 1 and emissions from energy consumption in Scope 2.
GHG intensity is divided by Castellum's property area for the respective property categories. Castellum's total Scope 3 emissions are found on page 179.

Energy consumption and emissions for Castellum's own operations (Castellum AB)

			Outcome (Abs, Int)		
	Measurement unit	Indicator	2021	2020	2019
Total consumption, electricity	MWh		**2,930**	**561**	**302**
Portion of electricity from renewable sources			100%	100%	100%
Total consumption, district heating and cooling			**3,829**	**646**	**822**
Portion of district heating and cooling from renewable sources			100%	96%	96%
Total consumption, fuels			**0**	**0**	**0**
Proportion of fuel from renewable sources			—	—	—
Energy intensity (normalised)	kWh/m²/yr		134	133	117
Number of properties where energy use and associated GHG emissions have been measured.	No. of buildings included		32/32	20/20	18/18
Share of energy use and GHG estimated in the portfolio	%		0%	0%	0%
Scope 1	Tonnes CO_2e	Direct	23	14	66
Scope 2 (market-based)		Indirect	139	16	24
Scope 2 (facility-based)		Indirect	212	57	132
Scope 1 & 2 emissions (market-based)	Kg $CO_2e/m^2/yr$	GHG	162	3	8
Scope 1 & 2 emissions (facility-based)	Kg $CO_2e/m^2/yr$	GHG	235	7	17.5

The total area of Castellum's own offices was measured at 45,471 m² in 2021. This also includes United Space's offices.

Castellum's agenda for the sustainable city

Key metrics – sustainability	2021	2020	2019	2018	2017	Targets
Resource efficiency						
Total energy use, kWh/sq. m., year	91[1)]	75	88	97	94	
Total energy use, degree-day corrected, kWh/sq. m., year	92[2)]	87	95	103	100	Max 89 kWh/sq. m. in 2021, and 80 kWh/sq. m. in 2025 (22% reduction 2025 cf. with 2015)
1. of which actual heating	65	50	60	64	64	
2. of which degree-day corrected heating	66	62	67	70	70	
3. of which electricity and cooling	26	25	28	33	30	
Energy savings per year in the like-for-like portfolio, rolling 12 months, % *(degree-day corrected)*	0%	–12%	–8%	3%	–6%	–2.5% energy savings/year in the like-for-like portfolio
Energy savings per year in the like-for-like portfolio, rolling 12 months, % *(actual energy use)*	+13%	–11%	–9%	3%	–7%	
Total water use, m^3/sq. m., year	0.2	0.3	0.3	0.3	0.3	
Water savings per year in the like-for-like portfolio, rolling 12 months, %	–6%	–13%	–3%	–1%	–4%	1% water conservation/year in the like-for-like portfolio
Fossil-free						
Share of non-fossil energy	95%	95%	96%	95%	95%	100% fossil-free energy by 2030
Fossil fuel-free vehicles, %	100%	100%	86%	62%	34%	100% fossil fuel-free vehicles
No. of charging posts for electric vehicles	674	—	—	—	—	New measurement point, 2021
No. of large solar panels installed	46	39	26	22	16	100 solar cell installations by 2025
Road map to climate neutrality by 2030						
Property management – CO_2 emissions in kg/sq. m., year (market-based)[3)]	1.5	1.0	1.5	1.2	1.7	1.2 kg/sq. m. 2021 and 0 kg/sq. m. 2030
of which Scope 1	0.1	0.1	0.1	0.2	0.3	
of which Scope 2 (market-based)	1.4	0.9	1.4	1.0	1.4	
of which Scope 2 (location-based)	4.3	4.1	8.8	11.3	11	
Project Development – Reduced emissions in project development portfolio (Scope 3), %	–15%	—	—	—	—	New target from 2021. 15% reduction in CO_2 emissions per sq. m. in new production of offices
Sustainability certification						
Sustainability certification, % of sq. m.	48%	39%	36%	33%	29%	50% certified area by 2025
Sustainability certification, number of properties	206	202	164	141	129	
Sustainability certification, % of rental income	61%	52%	47%	43%	39%	
Sustainability certification, % of property value	63%	55%	51%	48%	43%	
ESG benchmarks						
GRESB points (0–100)	95	91	92	92	95	Global Sector Leader 2021, GRESB, received 15 October 2021
DJSI points (0–100)	80	81	79	73	72	Only Nordic property company included in DJSI
CDP mark (A to D-)	A–	A	A–	B	A–	CDP: Highest marks of all Nordic property companies.
Social key metrics						
Sick leave, % (long-term and short-term)	2.9%	2.2%	2.9%	3.8%	2.0%	Max 2% short-term and 3% long-term sick leave
Equality, % women and men	43%/57%	40%/60%	39%/61%	42%/58%	38%/62%	Between 40–60%
Diversity, international background, %	9%	8%	6%	6%	No measurement	20% 2025
Apprentices, % of employees	4%	2%	5%	6%	4%	4% per year

Castellum will be one of the most sustainable property companies in Europe. The company's sustainability agenda, "The sustainable city," is divided into four areas of focus: The Planet, Future-proofing, Well-being and Social responsibility. These areas of focus ensure that operations are conducted responsibly, creating long-term solutions from an economic, ecological and social perspective. Kungsleden, which was acquired in late 2021, has not been included in the company's sustainability reporting or sustainability key metrics. It will be included in 2022.

1. The increase in total energy consumption compared with 2020 is due primarily to the portfolio shift and acquisitions in Finland that took place in 2021, and a colder year compared with 2020 resulting in increased heating.
2. The small increase in the degree-day corrected consumption is due primarily to the portfolio shift and acquisitions in Finland that took place in 2021. Castellum's actual enhancements to energy efficiency in the like-for-like portfolio can be seen further down in the table and totals 0% savings per square metre, rolling 12 months.
3. This list includes all CO_2 emissions from property management (i.e. scopes 1 and 2). Detailed information on Castellum's CO_2 emissions and complete Scope 3 emissions outside of property management can be found on page 179. Total energy consumption is the sum of 1 and 3. Total normalised energy use is the sum of 2 and 3.