

Data appendix

Sustainability Report 2021

Data	2016	2017	2018	2019	2020	erläuternde Anmerkungen
Governance – Facts about the University						
Year established					1870	
Faculties					9	The Faculty of Education, Faculty 9, ceased to operate in 1989.
Profile Areas					8	
Clusters of Excellence					3	
Number of students	44.517	45.377	45.256	45.628	47.173	In each case, number in the winter semester
Number of employees (Profs + academic staff + technical and administrative staff)	9.264	9.496	9.655	9.826	10.156	Full-time equivalent
Graduates	7.184	7.165	7.164	7.085	6.657	
Number of promotions	893	995	904	1.007	1.017	
Number of habilitations	25	31	30	38	25	
Number of professorships	540	547	554	548	553	
Financial volume (Euro)	900.021.058	947.998.294	998.469.185	1.035.599.063	1.048.926.916	
Main use area (m2)	562.484	582.116	591.712	613.890	621.164	Includes usable areas 1-6****
Energy relevant area (m2)	666.981	706.253	706.063	708.886	725.723	Buildings in which no energy is consumed are not included. Includes usable areas 1-9****
Operation – Energy						
Energy procurement – energy sources in total (MWh)	268.413	263.931	264.582	261.123	247.851	Not included are energy and water consumption of individual institutes, which conclude their own supply contracts or pay the bills themselves.
Energy consumption – total natural gas (MWh)	136.800	140.500	159.400	146.383	138.679	
Energy consumption – natural gas – share of heating (MWh)	63.410	54.360	51.810	52.620	47.230	
Energy consumption – natural gas – share of CHP operation (MWh)	73.390	86.140	107.590	93.763	91.449	
Energy consumption – natural gas – % of total purchases	50,97	53,23	60,25	56,06	55,95	
Energy consumption – district heating (MWh)	55.400	51.200	39.100	41.843	38.948	Since 2017: incl. self-generation of heat from the Wüllerstraße CHP unit.
Energy consumption – district heating – % of total consumption	20,6	19,4	14,8	16,0	15,7	
Energy consumption – EL heating oil (MWh)	213,4	230,8	81,5	142	151,5	The only consumption points are Wildenhof and the Melaten CHP plant (since 2020).
Energy consumption – heating oil – % of total purchases	0,1	0,1	0,0	0,1	0,1	
Energy consumption – electricity (MWh)	76.000	72.000	66.000	72.755	70.072	
Energy consumption – electricity – % of total consumption	28,31	27,28	24,95	27,86	28,27	

Data	2016	2017	2018	2019	2020	erläuternde Anmerkungen
Self-generated energy (MWh)	61.324	70.887	86.750	78.060	75.670	Includes the university's three CHP units, which are powered by natural gas.
self-generated electricity (MWh)	30.863	35.714	44.492	38.655	37.003	
self-generated energy – % of total electricity consumption	28,89	33,16	40,27	34,70	34,56	
self-generated electricity (MWh) – Hörn CHP unit	15.653	13.520	13.877	10.213	11.853	Is fed into a power grid with the generated electricity from the Wüllnerstr CHP unit and the Templergraben STAWAG feed
self-generated electricity (MWh) – Wüllnerstr. CHP unit		6.444	14.409	14.853	14.464	Is fed into a power grid with the generated electricity from the Hörn CHP unit and the Templergraben STAWAG feed.The Wüllnerstr. CHP unit was put into operation in 2017
self-generated electricity (MWh) – Melaten CHP unit	15.210	15.750	16.206	13.589	10.686	Is fed into a power grid with the Melaten STAWAG feed
Total self-generated heat (MWh)	30.461	35.173	42.258	39.405	38.667	
Self-generated heat – share of heating purposes (MWh)	0	5.538	13.794	15.175	14.983	Generated in the Wüllnerstraße CHP unit, which is powered by natural gas
Self-generated heat – share of cooling (MWh)	30.461	29.635	28.464	24.230	23.684	Generated in the Melaten and Hörn CHP units, which run on natural gas
Total energy consumption (MWh) – electricity + heating + cooling	253.065	246.889	246.356	253.746	238.976	
Energy consumption electricity (MWh) – RWTH total	106.839	107.712	110.481	111.411	107.074	Including the self-generated electricity in the CHP units
Electricity consumption index (kWh/m ²) – RWTH total	160	153	156	157	148	Only energy-relevant net floor area taken into account*.
(= energy consumption electricity per usable area)	44.978	41.536	33.006	37.408	30.725	Without the self-generated electricity from the CHP unit
Energy consumption electricity (MWh) – original area + Hörn	42,10	38,56	30	34	29	
Energy consumption electricity – % of total electricity consumption – original area + Hörn	130	131	129	132	120	Incl. the self-generated electricity in the CHPs Wüllnerstr. + Hörn, only energy-relevant net floor area taken into account*.
Electricity consumption characteristic (kWh/m ²) – original area + Hörn	30.998	30.462	32.983	35.348	39.346	
Energy consumption electricity (MWh) – Melaten	29,01	28,28	29,85	31,73	36,75	Without the self-generated electricity from the CHP unit
Energy consumption electricity – % of total electricity consumption – Melaten	231	196	214	209	200	Incl. own generation of electricity from Melaten CHP unit, only energy-relevant net floor area taken into account*.

Data	2016	2017	2018	2019	2020	erläuternde Anmerkungen
Heating energy consumption (MWh) – RWTH total	114.878	107.402	103.106	109.131	101.313	
Heating energy consumption index (kWh/m2) – RWTH total	209	190	192	198	198	Calculation according to VDI Guideline 3807, weather-adjusted via degree day number, incl. self-generation of heat from CHP Wüllnerstr., only energy-relevant net floor area taken into account*.
(= energy consumption per usable area)	61.281	59.815	55.202	58.381	51.115	see above
Heating energy consumption (MWh) – original area + Hörn	53,34	55,69	53,54	53,50	50,45	see above
Heating energy consumption – % of total electricity consumption – original area + Hörn	159	159	152	159	153	Calculation according to VDI Guideline 3807
Heating energy consumption index (kWh/m2) – original + Hörn	53.597	47.587	47.904	50.750	50.198	total floor area (m2) and number of degree days (Kd/a); heat sum in Kd 3883.
Heating energy consumption (MWh) – Melaten	46,66	44,31	46	47	50	Only energy-relevant net floor area is taken into account, i.e. buildings in which no energy is consumed are not included
Heating energy consumption – % of total electricity consumption – Melaten	325	253	274	279	285	
Consumption of cooling energy (MWh) – RWTH total	31.348	31.775	32.769	33.204	30.589	
Cooling energy consumption index (kWh/m2) – RWTH total	47,0	45,0	46,4	46,8	42,1	Calculation according to VDI Guideline 3807
Operations – Water						
Consumption of drinking water (m3) – RWTH total	488942	461.255	511.715	508.574	464.208	
Drinking water consumption index (m3/m2)	0,73	0,65	0,72	0,72	0,64	
Amount of waste water (m3)	408.991	362.828	404.240	417.697	369.985	
Amount of evaporation water	79.951	98.427	107.475	90.877	94.223	
Operations – Mobility						
Number of job tickets	1807	1781	1808	1771	1676	Mean values, as the statistics were not collected for every month
Proportion of employees with job ticket (%)	35	33	32	31	30	100% corresponds to the total number of employees entitled to a job ticket
Vehicle fleet – fuel consumption						2016: deviations, as only one of the two fuel suppliers was recorded and the "white fleet" was established in parallel
Gasoline (l)	6.389,99	20.046,61	25.394,52	35.874,25	28.723,29	2018/19: decreasing diesel volumes and simultaneously increasing gasoline volumes, among other things due to the
Diesel (l)	60.503,67	88.145,91	79.943,13	70.489,01	42.460,46	Germany-wide discussions at that time about a possible diesel driving ban (also in Aachen). RWTH increasingly procured

Data	2016	2017	2018	2019	2020	erläuternde Anmerkungen
Business trips						Business travel management figures from SAP – evaluation has only been possible since SAP was introduced in 2017
Business trips – number in total		24.917	26.401	25.422	11.375	Differs from the sum of the number of trips by means of travel due to the various combinations of means of travel and/or services.**
Number of domestic business trips		"18.353"	19.351	"18.405"	9.022	
Domestic business trips – % of total trips		73,66	73,30	72,40	79,31	
Number of business trips abroad		6.564	7.050	7.017	2.353	
Business trips abroad – % of total trips		26,34	26,70	27,60	20,69	
Air travel – total number of trips		6.263	6.564	5.991	1.222	
Number of trips by air – share of total trips (%)		25,14	24,86	23,57	10,74	
Passenger kilometers (km) – total			21.672.903	26.806.866	4.338.175	Information given by the contract travel agencies. As one of the three travel agencies was unable to provide the required data, the total was extrapolated on the basis of the share of sales.
Number of domestic air trips		2.145	2.043	1.652	375	
Number of domestic air trips – share of total air trips (%)		34,25	31,12	27,57	30,69	
Passenger kilometers (km) – domestic			796.822	1.333.657	324.727	
Number of international trips		4.118	4.521	4.339	847	
Number of international trips – share of total trips (%)		65,75	68,88	72,43	69,31	
Passenger kilometers (km) – total international trips			20.876.081	25.473.209	4.013.448	
Passenger kilometers (km) – continental Europe			2.426.051	3.874.741	556.188	
Passenger kilometers (km) – intercontinental travel			18.450.030	21.598.468	3.457.260	
Business trips with personal cars – total number		1.322	1.244	909	149	
Car trips – share of total trips (%)		8,11	8,55	5,95	1,06	
Passenger kilometers (km) – total		251.433	229.978	163.151	26.692	
Number of domestic car trips		772	638	453	85	
Total distance of domestic travel in km		140.327	115.306	71.632	14.365	
Domestic car trips – % of total car trips		58,40	51,29	49,83	57,05	
Number of car trips abroad		550	606	456	64	
Total distance abroad in km		111.106	114.672	91.519	12.327	
Car trips abroad – % of total car trips		41,60	48,71	50,17	42,95	

Data	2016	2017	2018	2019	2020	erläuternde Anmerkungen
Business trips with rental cars – total number		1.505	2.019	1.888	702	
Business trips with rental cars – share of total trips (%)		6,04	7,65	7,43	6,17	
Passenger kilometers (km) – total			2.426.350	2.209.208	778.148	Details of the car rental framework contract partners
Number of domestic business trips with rental cars		1.241	1.702	1.529	587	
Domestic rental cars. – % of total rental car usage		82,46	84,30	80,99	83,62	
Number of business trips with rental cars abroad		264	317	359	115	
Rental cars abroad – % of total rental car usage		17,54	15,70	19,01	16,38	
Business trips by rail – total number		9.088	9.972	9.876	2.284	
Number of rail trips – share of total trips (%)		36,47	37,77	38,85	20,08	
Passenger kilometers (km) – total		4.619.458	4.750.618	4.730.636	1.012.068	Information from Deutsche Bahn
Number of domestic rail-only trips (excluding other modes of transport)		3.343	3.826	4.154	1.107	
Number of rail journeys, incl. in combination with other means of transport		6.659	7.163	6.988	1.697	
Number of rail-only trips abroad		409	495	567	214	
Number of rail trips abroad in combination with other modes of transport		2.429	2.809	2.888	587	
Operations – Procurement and Disposal						
Total consumption of printer and copy paper (million sheets)	32	30	24,3	24,6	10,9	"Calculation of the values for 2016 by division 7.3 - Central Purchasing. Evaluation of meaningful data only possible since SAP was implemented in 2017"
Waste quantity (t)	404,09	363,86	304,26	327,20	290,79	Not including decentralized independent disposal by facilities within the University, or paper and residual waste (collected by the city of Aachen, billing via number of containers).
Waste quantity/area (kg/m2)	0,72	0,63	0,51	0,53	0,47	
Non-hazardous waste – absolute value (t)	228,386	199,438	173,135	179,63	156,55	
Non-hazardous waste – % of total waste	56,52	54,81	56,90	54,90	53,84	
Hazardous waste – absolute value (t)	175,703	164,417	131,122	147,573	134,236	
Hazardous waste – % of total waste	43,48	45,19	43,10	45,10	46,16	

Data	2016	2017	2018	2019	2020	erläuternde Anmerkungen
Operations – Green Spaces						
Green spaces at RWTH (m2)					1.260.000	Calculation of the current state by division 10.52 - Grounds Maintenance
Total green roof area (m2)					ca. 30.000	see above
Share of green roofs/total roof area (%)					3,75	see above, from approx. 800,000 m2 roof area
Operations – Greenhouse Gas Emissions (GHG-E)						
GHG-E (t CO2 equivalent (CO2-EQ)) – total (Scope 1 + 2 + 3)	58.040	53.756	55.545	64.814	63.478	Only limited data are available for the years 2016 to 2019.***
GHG-E (t CO2-EQ) – Scope 1	24.259	24.976	28.809	26.902	28.330	Scope 1: direct, i.e. self-generated through combustion in own plants, GHG-E
GHG-E heat – combustion (t CO2-EQ)	10.869	9.258	9.179	9.520	9.587	2016-2019: Values provided by the energy supplier (heating gas, heating oil) ***
GHG-E CHP – own operation (t CO2-EQ)	13.390	15.718	19.630	17.107	18.484	2016-2019: Values provided by the energy supplier (natural gas) ***
GHG-E air conditioning (t CO2-EQ)					76	
GHG-E vehicle fleet (t CO2-EQ)				275	183	
GHG-E greenhouse gas emissions (t CO2-EQ) – Scope 2	33.781	28.780	21.890	31.311	34.043	Scope 2: GHG-E generated by purchased energy
GHG-E purchased electricity (t CO2-EQ)	26.136	21.710	16.497	25.537	28.668	2016-2019: Specification of the energy supplier***
GHG-E district heating (t CO2-EQ)	7.645	7.070	5.393	5.774	5.375	2016-2019: Values provided by the energy supplier ***
GHG-E greenhouse gas emissions (t CO2-EQ) – Scope 3			4.846	6.601	1.155	Scope 3: indirect GHG-E (e.g. through business travel or through purchased goods and services).
GHG-E business trips (t CO2-EQ) – trips				599	171	
GHG-E business travel (t CO2-EQ) – flights			4.846	5.830	908	2018-2019: Values provided by the contracted travel agencies. As one of the three travel agencies was unable to provide the required data, the total was extrapolated based on the share of sales. ***
GHG-E paper consumption (t CO2-EQ)				172	76	
Feed-in through PV systems					50	
Greenhouse gas emissions per area (kg CO2-EQ/m2)	103	92	94	106	102	Calculation based on main use area
Greenhouse gas emissions per university member (kg CO2-EQ/person)	1.079	980	1.012	1.169	1.107	

Data	2016	2017	2018	2019	2020	erläuternde Anmerkungen
Society – Internationalization – Social Initiatives – Equal Opportunities						
Proportion of international students (%)	19,20	21,30	23,10	24,70	26,40	Nationality
Proportion of international professors (%)	12,60	12,10	11,70	12,50	12,70	Nationality
Proportion of international academic staff (%)	16,20	16,90	17,90	19,00	19,30	Nationality
Proportion of international technical and administrative employees (%)	4,30	4,40	4,70	4,80	5,00	Nationality
Number of incoming exchange students	1.183	1.107	1.224	977	900	
Number of outgoing exchange students	1.081	1.269	1.354	1.247	765	
Proportion of employees with permanent contracts (%)	k.A.	k.A.	38,10	39,00	38,90	Heads Fac. 1 to 8
Gender quota						
Share of female students (%)	31,90	32,30	32,50	32,90	32,60	
Proportion of female professors (%)	16,50	16,80	17,70	17,50	19,00	
Proportion of female academic staff (%)	30,30	30,30	31,20	31,30	32,20	
Proportion of female technical and administrative employees (%)	43,60	44,70	45,00	45,60	45,50	
Proportion of female rectorate members (%)	17	17	17	17	29	Reporting date at the beginning of each year, rounded figures
Proportion of female university council members (%)	55,60	50,00	50,00	44,40	50,00	
Proportion of female senate members (%)	23,10	34,60	34,60	34,60	38,50	
Proportion of female deans (%)	11,10	11,10	11,10	22,20	22,20	
Share of female department heads (%)	55,60	50,00	54,50	54,50	54,50	
Average age of academic staff (years)	32,8	32,9	32,9	32,8	32,9	
Average age of non-academic staff (years)	45,1	44,9	44,9	44,8	44,6	
Number of childcare places – regular, under 3 years old	180	177	199	243	243	
Number of childcare places – regular, 3 to 6 years old	168	183	184	214	214	
Number of children participating in vacation camps (6 to 12 years)	192	192	204	221	154	
Number of university sports courses p.a.	2.000	2.000	2.000	2.500	620	
Number of participants in university sports courses per week	15.000	15.000	15.000	20.000	N/A	
Number of university sports instructors p.a.	450	450	520	600	200	
Number of sports offered by University sports p.a.	90	90	92	100	82	

Data	2016	2017	2018	2019	2020	erläuternde Anmerkungen
Society – Internationalization – Social Initiatives – Influence on Society						
Third-party funds (in € million)	325,7	360,3	385,2	426,8	403,7	
Share of third-party funds – Federal Government (in million €)	87,9	114,3	132,4	153,4	156,5	
Share of third-party funds – EU (in million €)	24,6	26,9	26,5	27,3	27,3	
Share of third-party funds – DFG (in million €)	90,1	91,4	97,0	104,8	100,1	
Share of third-party funds from other public/private sources (in million €)	29,0	35,3	37,9	38,7	35,6	
Donors industry/business (in million €)	94,1	92,4	91,4	102,7	84,3	
Number of endowed professorships	13	16	18	14	12	

* Only energy-relevant net floor area is taken into account, i.e. buildings in which no energy is consumed are not included.

** Example: A trip is made with a company vehicle or by riding with another traveler. Nevertheless, own hotel costs are incurred.

In this case, no travel expense type is entered for means of travel, nevertheless the persons have carried out a business trip alone or together.

*** The survey for 2020 was carried out using a greenhouse gas calculation tool developed by StartUp CO2OP. CO2OP emerged from the Stuttgart University of Applied Sciences as part of a startup grant program.

**** Usable space (NF):

NF 1: Residential and social spaces, e.g. recreation rooms, tea kitchens...

NF 2: Office/administration, e.g. offices, meeting rooms, office technology rooms...

NF 3: Workshops/labs/halls, e.g. electronics labs, metal workshops, test halls...

NF 4: Storage, e.g. warehouses, archives, collection rooms, cold storage rooms...

NF 5: Teaching, e.g. lecture halls, seminar rooms, exercise rooms, Cip pool...

NF 6: Medical rooms, e.g. operating theaters, radiotherapy rooms, first aid rooms

NF 7: Ancillary space, e.g. toilets, checkrooms, changing rooms, shower rooms, storage rooms...

NF 8: Technical space, e.g. operating equipment, UPS rooms, ventilation and air conditioning systems...

NF 9: Traffic space, e.g. corridors, stairwells, entrance halls....