### CO2 emissions for Berlin for MFH buildings

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4 März 2019

#### Introduction

CO2 emissions for Berlin for MFH buildings

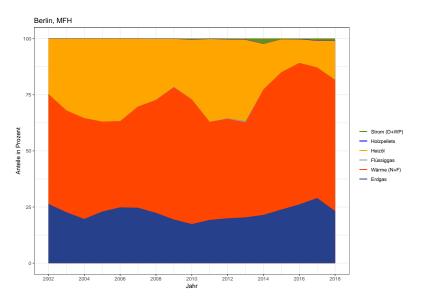
#### Berlin, MFH

CO2 emissions for Berlin for MFH buildings

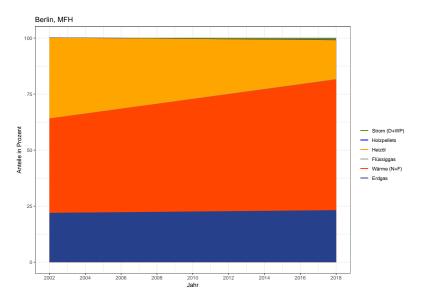
### Verbrauchsanteile nach Energieträger

Jahr	Erdgas	Wärme	Flüssiggas	Heizöl	Holzpellets	Stron
2002	0.26	0.49	0	0.25	0	0
2003	0.23	0.45	0	0.32	0	0
2004	0.2	0.45	0	0.35	0	0
2005	0.23	0.4	0	0.37	0	0
2006	0.25	0.38	0	0.37	0	0
2007	0.25	0.45	0	0.3	0	0
2008	0.22	0.5	0	0.27	0	0
2009	0.19	0.59	0	0.21	0	0
2010	0.17	0.55	0	0.27	0	0
2011	0.19	0.44	0	0.37	0	0
2012	0.2	0.44	0	0.35	0	0
2013	0.2	0.42	0.01	0.36	0	0
2014	0.22	0.56	0	0.2	0	0.02
2015	0.24	0.61	0	0.15	0	0
2016	0.26	0.63	0	0.11	0	0
2017	0.29	0.58	0	0.12	0	0.01
2018	0.23	0.58	0	0.17	0	0.01

### Verbrauchsanteile nach Energieträger



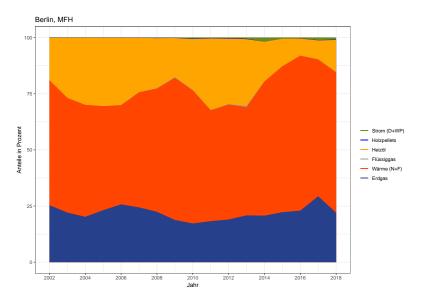
### Verbrauchsanteile nach Energieträger - linear trends



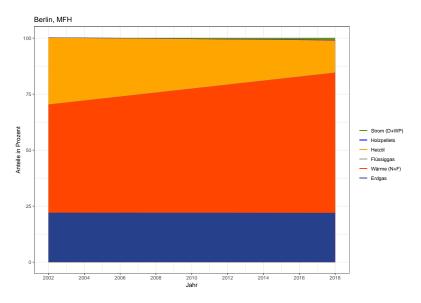
## Flächeanteile nach Energieträger (qm)

Erdgas	Wärme	Flüssiggas	Heizöl	Holzpellets	Strom
0.25	0.56	0	0.19	0	0
0.22	0.51	0	0.27	0	0
0.2	0.5	0	0.3	0	0
0.23	0.46	0	0.3	0	0
0.26	0.44	0	0.3	0	0
0.24	0.51	0	0.24	0	0
0.22	0.55	0	0.22	0	0
0.19	0.63	0	0.17	0	0
0.17	0.59	0	0.23	0	0
0.18	0.49	0	0.32	0	0
0.19	0.51	0	0.29	0	0
0.21	0.48	0.01	0.3	0	0
0.21	0.6	0	0.18	0	0.02
0.22	0.65	0	0.12	0	0
0.23	0.69	0	0.08	0	0
0.29	0.61	0	0.09	0	0.01
0.22	0.63	0	0.14	0	0.01
	0.25 0.22 0.2 0.23 0.26 0.24 0.22 0.19 0.17 0.18 0.19 0.21 0.21 0.22 0.23 0.29	0.25 0.56 0.22 0.51 0.2 0.5 0.23 0.46 0.26 0.44 0.24 0.51 0.19 0.63 0.17 0.59 0.18 0.49 0.19 0.51 0.21 0.48 0.21 0.6 0.22 0.65 0.22 0.65 0.23 0.89	0.25 0.56 0 0.22 0.51 0 0.2 0.5 0 0.23 0.46 0 0.26 0.44 0 0.26 0.51 0 0.17 0.59 0 0.18 0.49 0 0.19 0.51 0 0.19 0.51 0 0.21 0.48 0.01 0.21 0.66 0 0.22 0.65 0 0.22 0.65 0	0.25 0.56 0 0.19 0.22 0.51 0 0.27 0.2 0.5 0 0.3 0.23 0.46 0 0.3 0.26 0.44 0 0.3 0.24 0.51 0 0.24 0.22 0.55 0 0.22 0.19 0.63 0 0.17 0.17 0.59 0 0.23 0.18 0.49 0 0.33 0.21 0.48 0.01 0.3 0.21 0.48 0.01 0.3 0.21 0.48 0.01 0.3 0.21 0.6 0 0.18 0.22 0.85 0 0.08 0.23 0.89 0 0.08 0.29 0.61 0 0.09	0.25 0.56 0 0.19 0 0.22 0.51 0 0.27 0 0.2 0.5 0 0.3 0 0.23 0.66 0 0.3 0 0.26 0.44 0 0.3 0 0.24 0.51 0 0.24 0 0.22 0.55 0 0.22 0 0.19 0.63 0 0.17 0 0.17 0.59 0 0.23 0 0.18 0.49 0 0.32 0 0.19 0.61 0 0.22 0 0.19 0.63 0 0.17 0 0.17 0.59 1 0.22 0 0.19 0.51 0 0.22 0 0.21 0.48 0.01 0.3 0 0.21 0.48 0.01 0.3 0 0.21 0.48 0.01 0.3 0 0.22 0.65 0 0.12 0 0.23 0.69 0 0.08 0 0.23 0.61 0 0.09 0

### Flächeanteile nach Energieträger - graph



### Flächeanteile nach Energieträger - linear graph



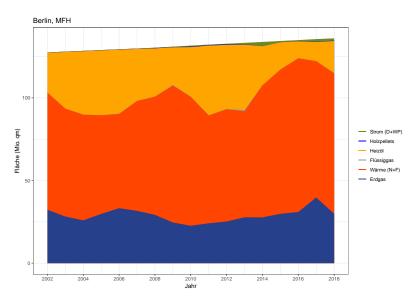
### Total heated area - official figures



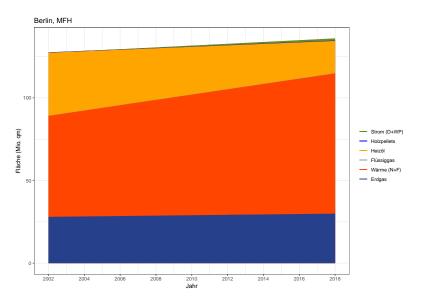
# Fläche nach Energietraeger (qm)

Erdgas	Wärme	Flüssiggas	Heizöl	Holzpellets	Strom
32304286	70841413	0	24102300	0	0
28200799	65272158	0	34319041	0	0
25890024	63924865	9036	38406073	0	0
29799151	59672023	35645	39201921	14258	0
33259764	57034986	131591	38752580	14076	0
31638632	66454332	19270	31520851	13913	0
29203562	71469624	166918	29086434	162686	110772
24605507	82816508	372595	22802455	115360	88571
22648973	77965735	142344	29943042	300386	435517
24114266	65237231	108228	42191476	228201	178595
25199123	67904898	200119	38752050	322558	188248
27745766	64170338	716162	39599368	226572	663791
27685316	79898455	0	23652908	0	240431
29858580	87219739	0	16566417	0	566263
30938126	93007234	0	10303202	150588	361848
39734564	82478296	0	11518230	131923	149798
29886066	84956648	175022	19408915	199072	118527
	32304286 28200799 25890024 29799151 33259764 31638632 29203662 24605507 22648973 24114266 25199123 27745766 27685316 29858580 30938126 39734564	32304288 7081413 328200799 65272158 25890024 63924855 33258764 5704986 31638632 6645332 226203562 71469624 24605507 82816506 22648973 77965735 2411426 65227231 24119213 67905735 24119426 77965735 24119426 77965735 24119426 77965735 24119426 77965735 24119426 77965735 24119426 77965735 24119426 77965735 24119426 77965735 24119426 77965735 24119426 77965735 24119426 77965735 24119426 77965735 24119426 77965735 24119426 77965735 24119426 77965735 24119426 77965735 24119426 77965735 24119426 77965735	32304286 70841413 0 28200709 65272158 0 28890024 63924865 90308 28799151 59672023 35645 33259764 57034966 131591 31538823 66454332 12970 28203562 71469624 166918 2460507 82616506 372962 22648973 77965735 142344 24114266 65237231 108228 25919123 67968486 200119 27746576 64170338 716162 27865316 7989455 0 28858856 87219733 0 39734564 82478296 0	32304286         70841413         0         24102300           28200798         68272158         0         34319611           28890204         63924865         9036         34060073           392799151         59672023         35464         38201921           33259764         50672023         31591         38752580           31398823         6645332         12970         31520851           240020567         71469624         166918         20086434           24014066         6237231         10222         4219476           2411426         65237231         10222         4219476           2774576         64170338         701622         3959368           2786581         7989455         0         2365208           2786581         7989455         0         2365208           2885868         721973         0         1656417           3973454         82478296         0         10363373           39734564         82478296         0         10363374	32304286         70841413         0         24102300         0           28200799         65272158         0         34319041         0           2889024         63924865         900         34319041         0           28890254         63924865         9300         34069073         0           332597614         57024986         131991         38752580         14076           31539852         66454332         129270         31520851         13913           22602562         71469824         165888         29008643         162886           24604673         77695735         142244         29943042         303886           24114266         66237231         108228         42191476         228527           24719676         64170338         716162         3859808         226572           2786361         7989845         0         2365290         205572           2786376         7989845         0         2365290         0           2865868         8721973         0         16566417         0           3933456         89307234         0         16566417         0           3937366         82478296         0         15182

### Fläche nach Energietraeger - graph



### Fläche nach Energietraeger - linear graph

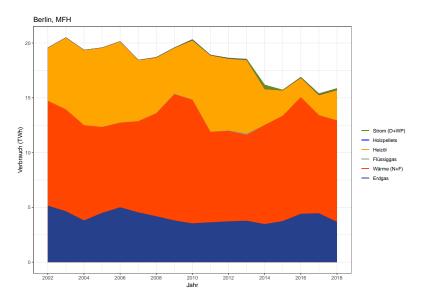


Verbrauch nach Energieträger (based on multivariate analysis)

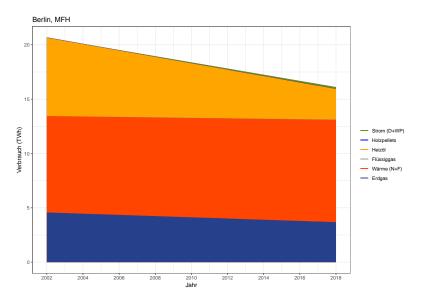
### Verbrauch nach Energieträger (kWh)

Jahr	Erdgas	Wärme	Flüssiggas	Heizöl	Holzpellets	Strom	Yearlysum
2002	5157060627	9567637661	0	4826785618	0	0	19551483906
2003	4652418342	9285463293	0	6550473346	0	0	20488354981
2004	3808459284	8689424154	1017182	6851456814	0	0	19350357435
2005	4498174520	7833891674	6639863	7221312489	759131	0	19560777677
2006	5006228797	7720718742	17777969	7386280892	732462	0	20131738862
2007	4550486316	8311114238	875907	5576544953	761035	0	18439782449
2008	4191853727	9392539084	20880229	5053800480	13980345	17351806	18690405671
2009	3808920758	11518320435	50066596	4167653016	10708480	12099281	19567768566
2010	3542372845	11278095914	18205562	5404465260	29515290	51649536	20324304408
2011	3638008182	8249835246	16684988	6963317389	19597353	12404490	18899847649
2012	3726764181	8251912378	45886333	6548230631	29755033	25207680	18627756236
2013	3779129106	7842383997	114916848	6707625468	19647741	65468850	18529172009
2014	3477425295	9035091744	0	3268898584	0	385756907	16167172530
2015	3753518151	9610152133	0	2303032290	0	47033206	15713735781
2016	4416340021	10638764980	0	1772865289	19516061	33993977	16881480327
2017	4464471392	8944284624	0	1830168161	23542247	116904751	15379371175
2018	3677542341	9253406568	23885353	2750678631	19934591	129009996	15854457479

#### Verbrauch nach Energieträger - graph



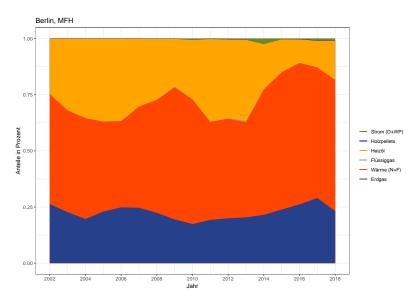
### Verbrauch nach Energieträger - linear graph



### Verbrauchsanteile nach Energieträger - data

Jahr	Erdgas	Wärme	Flüssiggas	Heizöl	Holzpellets	Strom
2002	26.38	48.94	0	24.69	0	0
2003	22.71	45.32	0	31.97	0	0
2004	19.68	44.91	0.01	35.41	0	0
2005	23	40.05	0.03	36.92	0	0
2006	24.87	38.35	0.09	36.69	0	0
2007	24.68	45.07	0	30.24	0	0
2008	22.43	50.25	0.11	27.04	0.07	0.09
2009	19.47	58.86	0.26	21.3	0.05	0.06
2010	17.43	55.49	0.09	26.59	0.15	0.25
2011	19.25	43.65	0.09	36.84	0.1	0.07
2012	20.01	44.3	0.25	35.15	0.16	0.14
2013	20.4	42.32	0.62	36.2	0.11	0.35
2014	21.51	55.89	0	20.22	0	2.39
2015	23.89	61.16	0	14.66	0	0.3
2016	26.16	63.02	0	10.5	0.12	0.2
2017	29.03	58.16	0	11.9	0.15	0.76
2018	23.2	58.36	0.15	17.35	0.13	0.81

#### Verbrauchsanteile nach Energieträger - graph



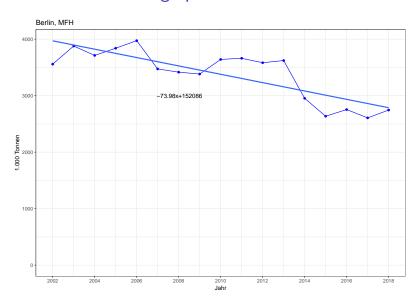
## CO2 coefficients (g/kWh)

Jahr	Erdgas	Wärme	Flüssiggas	Heizöl	Holzpellets	Strom
2002	201	129.3	234	266	6	561
2003	201	129.3	234	266	6	561
2004	201	129.3	234	266	6	561
2005	201	129.3	234	266	6	561
2006	201	129.3	234	266	6	561
2007	201	129.3	234	266	6	561
2008	201	129.3	234	266	6	561
2009	201	129.3	234	266	6	561
2010	201	129.3	234	266	6	561
2011	201	129.3	234	266	6	561
2012	201	129.3	234	266	6	561
2013	201	129.3	234	266	6	561
2014	201	129.3	234	266	6	561
2015	201	129.3	234	266	6	561
2016	201	129.3	234	266	6	561
2017	201	129.3	234	266	6	561
2018	201	129.3	234	266	6	561

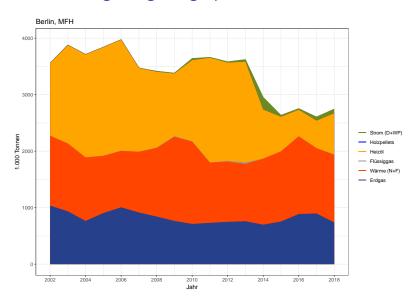
### CO2 emissions by energieträger in kilotons - data

Jahr	Erdgas	Wärme	Flüssiggas	Heizöl	Holzpellets	Strom	Total
2002	1036.57	1237.1	0	1283.92	0	0	3557.59
2003	935.14	1200.61	0	1742.43	0	0	3878.17
2004	765.5	1123.54	0.24	1822.49	0	0	3711.77
2005	904.13	1012.92	1.55	1920.87	0	0	3839.48
2006	1006.25	998.29	4.16	1964.75	0	0	3973.46
2007	914.65	1074.63	0.2	1483.36	0	0	3472.85
2008	842.56	1214.46	4.89	1344.31	0.08	9.73	3416.03
2009	765.59	1489.32	11.72	1108.6	0.06	6.79	3382.08
2010	712.02	1458.26	4.26	1437.59	0.18	28.98	3641.28
2011	731.24	1066.7	3.9	1852.24	0.12	6.96	3661.17
2012	749.08	1066.97	10.74	1741.83	0.18	14.14	3582.94
2013	759.6	1014.02	26.89	1784.23	0.12	36.73	3621.59
2014	698.96	1168.24	0	869.53	0	216.41	2953.14
2015	754.46	1242.59	0	612.61	0	26.39	2636.04
2016	887.68	1375.59	0	471.58	0.12	19.07	2754.05
2017	897.36	1156.5	0	486.82	0.14	65.58	2606.4
2018	739.19	1196.47	5.59	731.68	0.12	72.37	2745.42

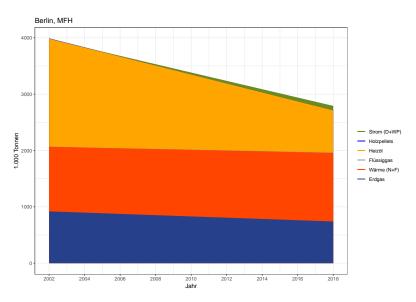
# CO2 emissions - total graph



### CO2 nach energieträger - graph



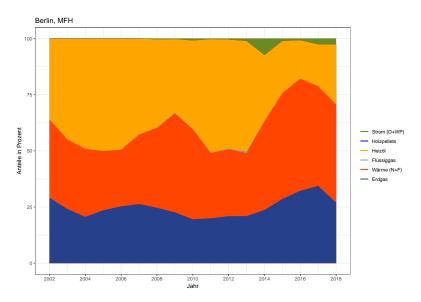
### CO2 nach energieträger - linear graph



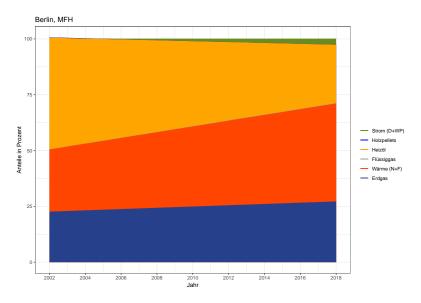
#### CO2 Anteile nach energieträger - data

Jahr	Erdgas	Wärme	Flüssiggas	Heizöl	Holzpellets	Stron
2002	29.14	34.77	0	36.09	0	0
2003	24.11	30.96	0	44.93	0	0
2004	20.62	30.27	0.01	49.1	0	0
2005	23.55	26.38	0.04	50.03	0	0
2006	25.32	25.12	0.1	49.45	0	0
2007	26.34	30.94	0.01	42.71	0	0
2008	24.66	35.55	0.14	39.35	0	0.28
2009	22.64	44.04	0.35	32.78	0	0.2
2010	19.55	40.05	0.12	39.48	0	0.8
2011	19.97	29.14	0.11	50.59	0	0.19
2012	20.91	29.78	0.3	48.61	0	0.39
2013	20.97	28	0.74	49.27	0	1.01
2014	23.67	39.56	0	29.44	0	7.33
2015	28.62	47.14	0	23.24	0	1
2016	32.23	49.95	0	17.12	0	0.69
2017	34.43	44.37	0	18.68	0.01	2.52
2018	26.92	43.58	0.2	26.65	0	2.64

### CO2 Anteile nach energieträger - graph



### CO2 Anteile nach energieträger - linear graph



### Spezifische CO2 Emission

