

Berlin CO2 Leistungsbild

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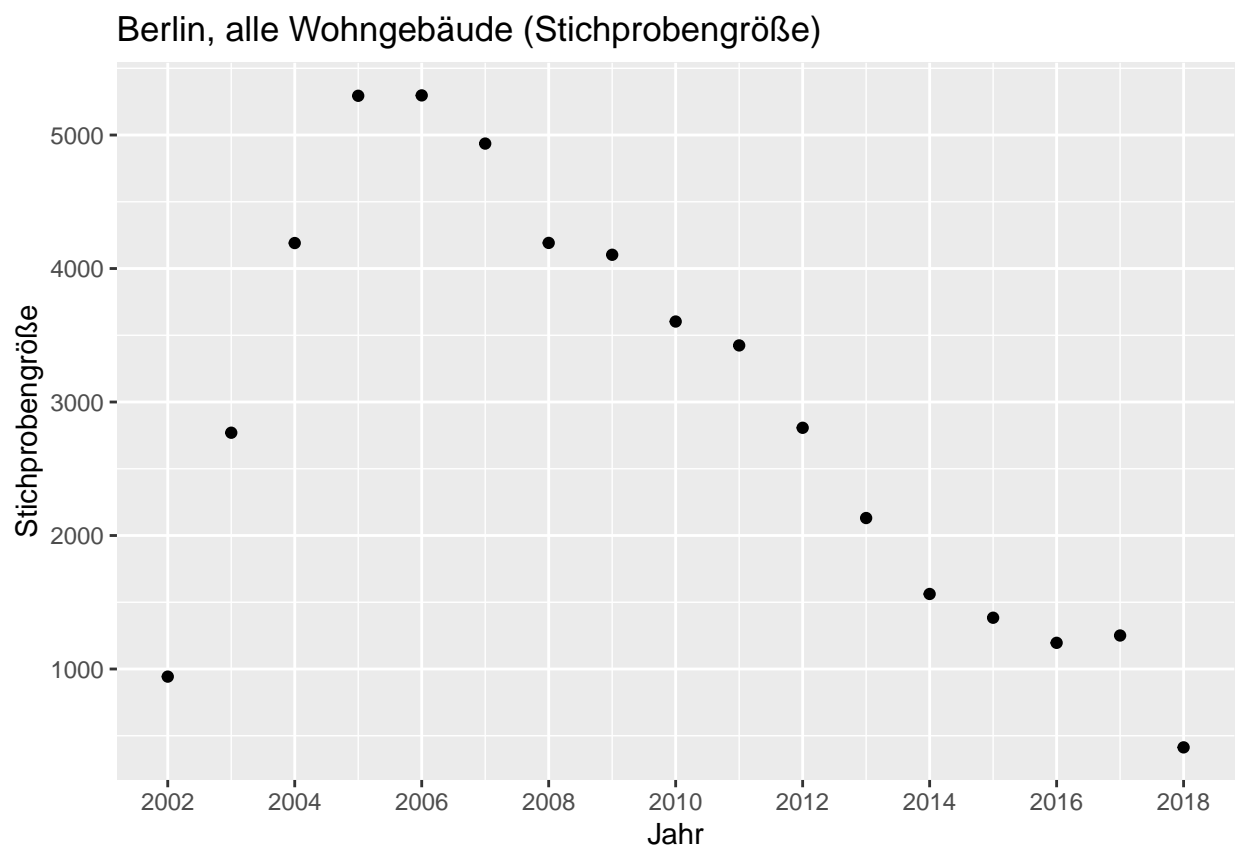
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Teil 1.

Berlin, MFH + 1-2 FH, Stichprobengröße

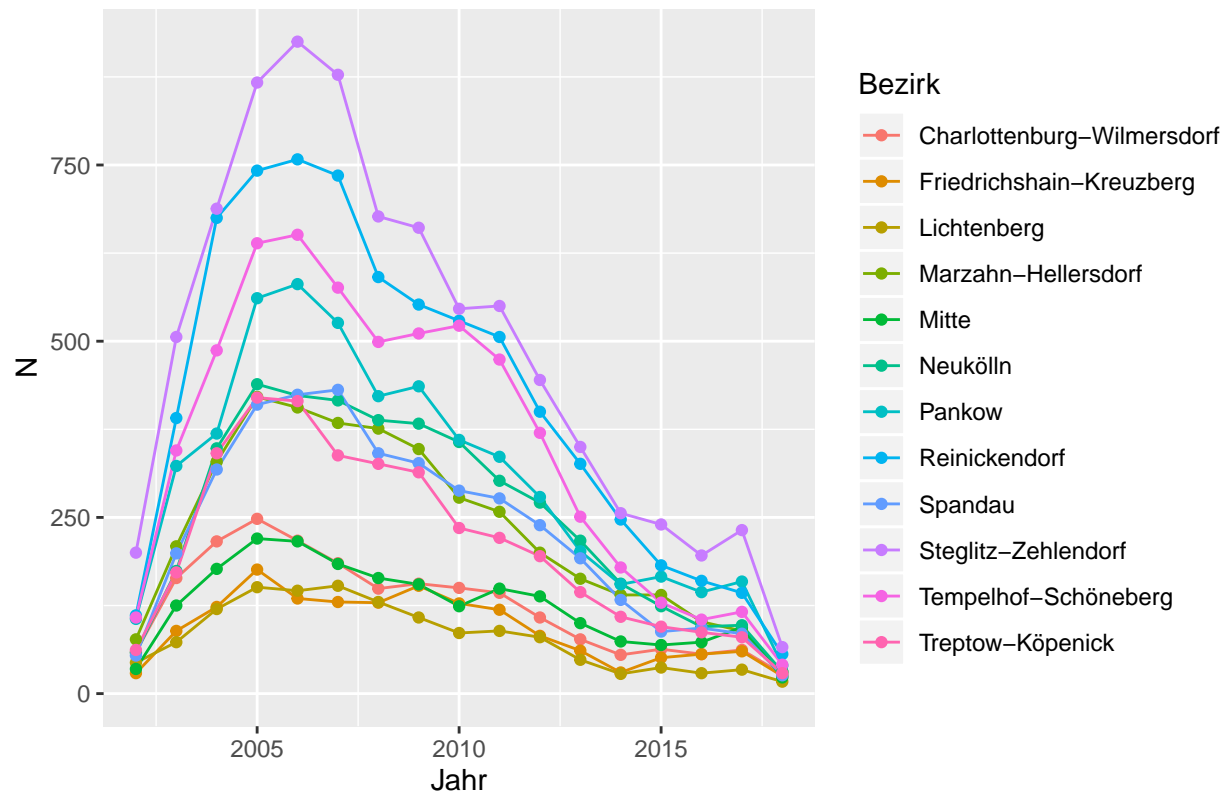
Gesamt

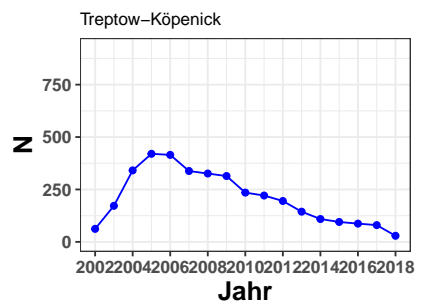
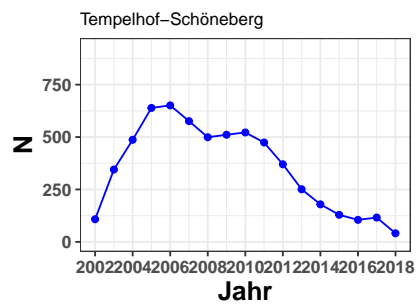
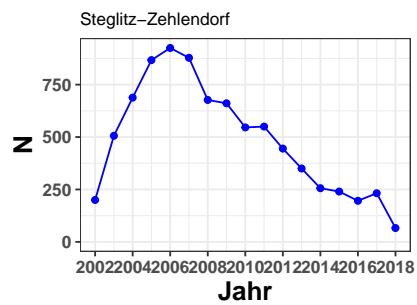
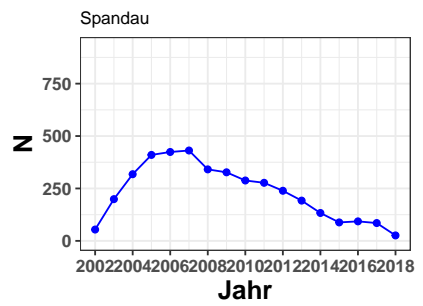
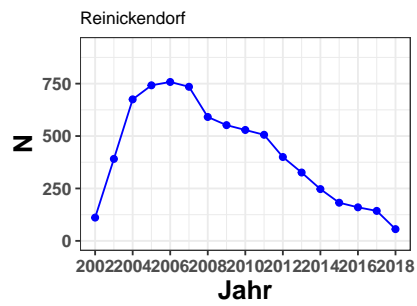
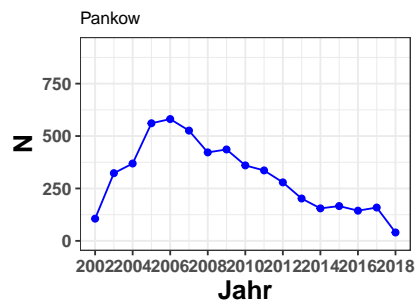
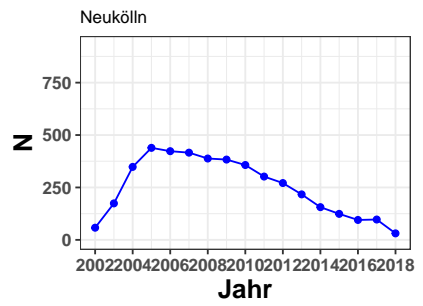
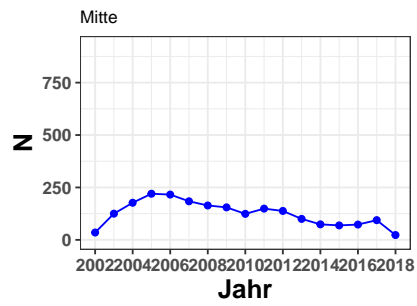
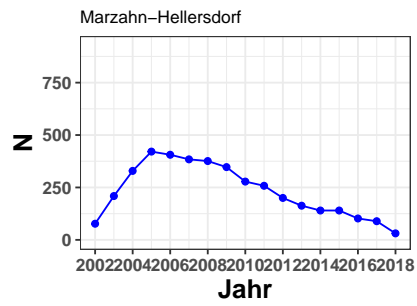
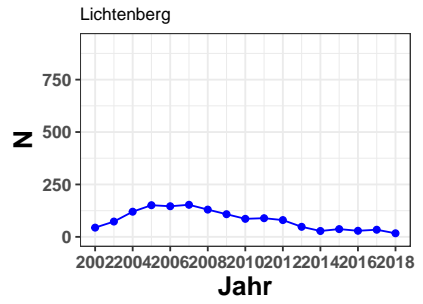
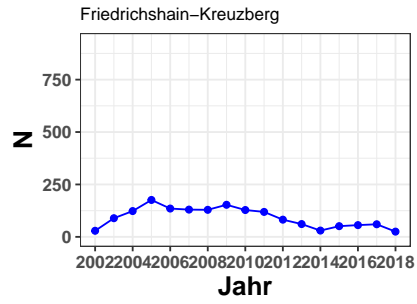
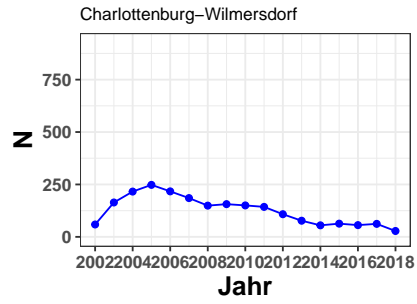


| Berlin, alle Wohngebäude, Stichprobengröße | |
|---|-------|
| Jahr | N |
| 2002 | 943 |
| 2003 | 2770 |
| 2004 | 4191 |
| 2005 | 5294 |
| 2006 | 5297 |
| 2007 | 4936 |
| 2008 | 4192 |
| 2009 | 4103 |
| 2010 | 3603 |
| 2011 | 3424 |
| 2012 | 2807 |
| 2013 | 2131 |
| 2014 | 1562 |
| 2015 | 1384 |
| 2016 | 1196 |
| 2017 | 1251 |
| 2018 | 413 |
| Gesamt | 49497 |

Nach Bezirken

Stichprobengröße, alle Wohngebäude





| Berlin, alle Wohngebäude, Stichprobengröße nach Bezirken | | | | | | |
|--|-------------------------------|------------------------------|-------------|-------------------------|-------|----------|
| Jahr | Charlottenburg- Wilmerdorf | Friedrichshain- Kreuzberg | Lichtenberg | Marzahn- Hellersdorf | Mitte | Neukölln |
| 2002 | 59 | 29 | 44 | 77 | 35 | 58 |
| 2003 | 164 | 89 | 73 | 209 | 125 | 174 |
| 2004 | 216 | 123 | 120 | 329 | 177 | 348 |
| 2005 | 248 | 176 | 151 | 421 | 220 | 439 |
| 2006 | 217 | 135 | 146 | 406 | 216 | 423 |
| 2007 | 185 | 130 | 153 | 384 | 184 | 416 |
| 2008 | 149 | 129 | 130 | 376 | 164 | 388 |
| 2009 | 156 | 153 | 108 | 347 | 155 | 383 |
| 2010 | 150 | 128 | 86 | 278 | 124 | 357 |
| 2011 | 143 | 119 | 89 | 258 | 149 | 302 |
| 2012 | 108 | 82 | 80 | 200 | 138 | 271 |
| 2013 | 77 | 61 | 48 | 163 | 100 | 217 |
| 2014 | 55 | 30 | 28 | 140 | 74 | 156 |
| 2015 | 63 | 51 | 37 | 140 | 69 | 124 |
| 2016 | 56 | 56 | 29 | 102 | 73 | 95 |
| 2017 | 62 | 60 | 34 | 89 | 94 | 97 |
| 2018 | 28 | 25 | 17 | 31 | 23 | 31 |

| Berlin, alle Wohngebäude, Stichprobengröße nach Bezirken | | | | | | |
|--|--------|---------------|---------|-------------------------|--------------------------|----------------------|
| Jahr | Pankow | Reinickendorf | Spandau | Steglitz- Zehlendorf | Tempelhof- Schöneberg | Treptow- Köpenick |
| 2002 | 106 | 111 | 54 | 200 | 108 | 62 |
| 2003 | 323 | 391 | 199 | 506 | 345 | 172 |
| 2004 | 369 | 675 | 318 | 688 | 487 | 341 |
| 2005 | 561 | 742 | 410 | 867 | 639 | 420 |
| 2006 | 581 | 758 | 424 | 925 | 651 | 415 |
| 2007 | 526 | 735 | 431 | 878 | 576 | 338 |
| 2008 | 422 | 591 | 341 | 677 | 499 | 326 |
| 2009 | 436 | 552 | 327 | 661 | 511 | 314 |
| 2010 | 360 | 529 | 288 | 546 | 522 | 235 |
| 2011 | 336 | 506 | 277 | 550 | 474 | 221 |
| 2012 | 279 | 400 | 239 | 445 | 370 | 195 |
| 2013 | 202 | 326 | 192 | 350 | 251 | 144 |
| 2014 | 155 | 247 | 133 | 256 | 179 | 109 |
| 2015 | 166 | 182 | 88 | 240 | 129 | 95 |
| 2016 | 144 | 160 | 93 | 196 | 105 | 87 |
| 2017 | 159 | 143 | 85 | 232 | 116 | 80 |
| 2018 | 40 | 56 | 26 | 66 | 41 | 29 |

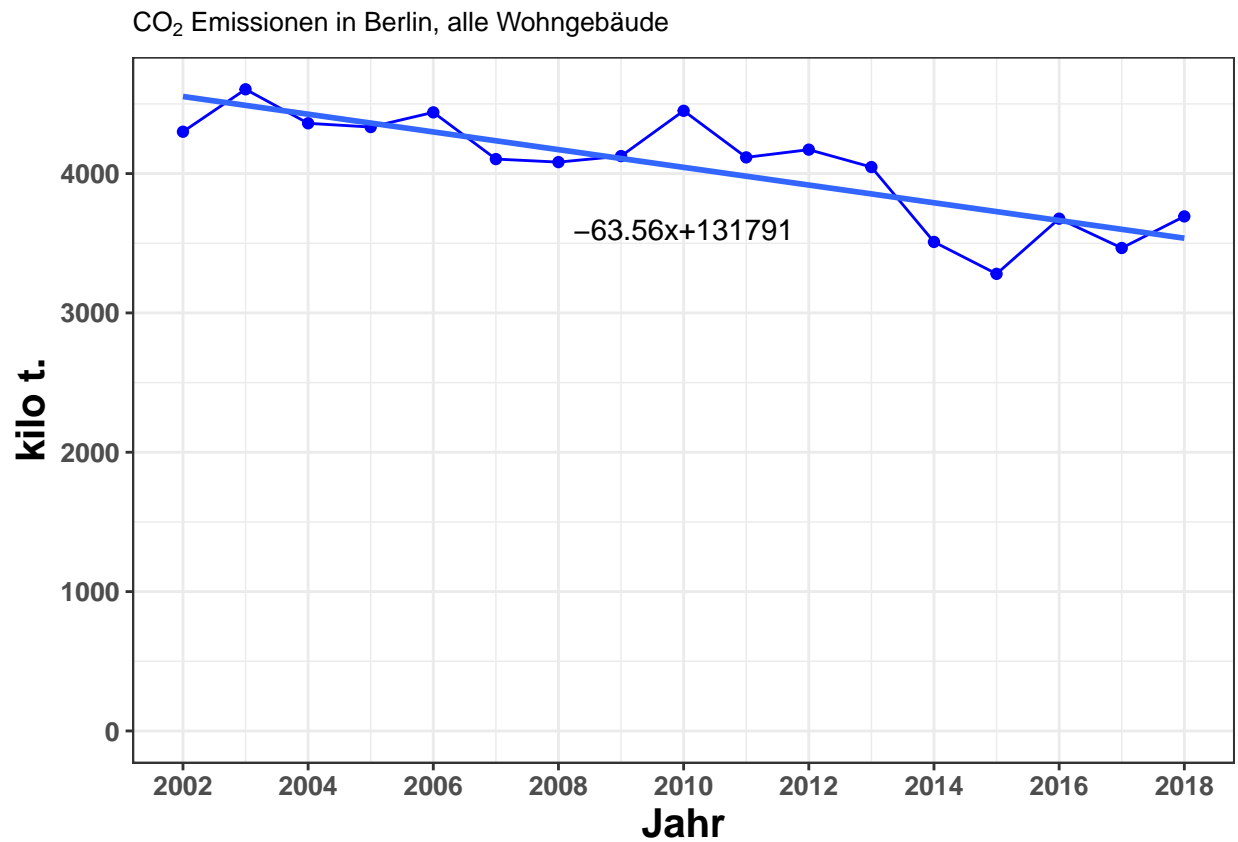
Nach Energieträgern

| Berlin, alle Wohngebäude, Stichprobengröße nach Energieträgern | | | | | | | |
|--|--------|-------|------------|--------|-------------|-------|--------|
| Jahr | Erdgas | Wärme | Flüssiggas | Heizöl | Holzpellets | Strom | Gesamt |
| 2002 | 457 | 78 | 0 | 408 | 0 | 0 | 943 |
| 2003 | 1106 | 207 | 0 | 1457 | 0 | 0 | 2770 |
| 2004 | 1768 | 221 | 10 | 2192 | 0 | 0 | 4191 |
| 2005 | 2452 | 319 | 35 | 2487 | 1 | 0 | 5294 |
| 2006 | 2483 | 296 | 39 | 2477 | 1 | 1 | 5297 |
| 2007 | 2267 | 336 | 23 | 2309 | 1 | 0 | 4936 |
| 2008 | 2053 | 288 | 30 | 1816 | 3 | 2 | 4192 |
| 2009 | 2017 | 360 | 33 | 1674 | 6 | 13 | 4103 |
| 2010 | 1551 | 261 | 26 | 1674 | 12 | 79 | 3603 |
| 2011 | 1406 | 246 | 18 | 1674 | 12 | 68 | 3424 |
| 2012 | 1146 | 184 | 22 | 1385 | 16 | 54 | 2807 |
| 2013 | 901 | 138 | 16 | 1023 | 9 | 44 | 2131 |
| 2014 | 716 | 93 | 21 | 696 | 4 | 32 | 1562 |
| 2015 | 680 | 126 | 19 | 510 | 11 | 38 | 1384 |
| 2016 | 570 | 116 | 23 | 437 | 15 | 35 | 1196 |
| 2017 | 552 | 160 | 28 | 419 | 14 | 78 | 1251 |
| 2018 | 183 | 41 | 8 | 142 | 6 | 33 | 413 |

1. Berlin, MFH + 1-2 FH, CO2-Emission aus Beheizung

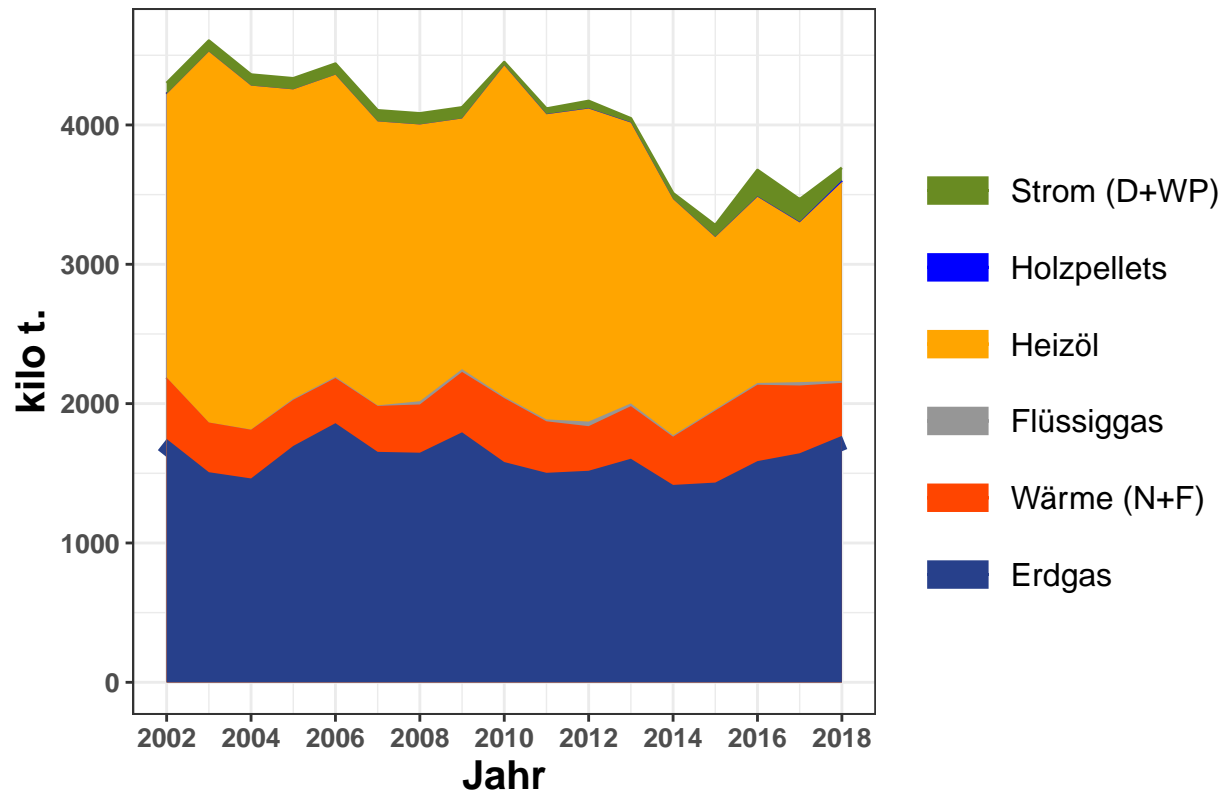
1.1 Absolute Zahlen

1.1.1 Berlin, MFH + 1-2 FH, CO2-Emission aus der Beheizung von Wohnraum 2002-2018 in 1.000 t



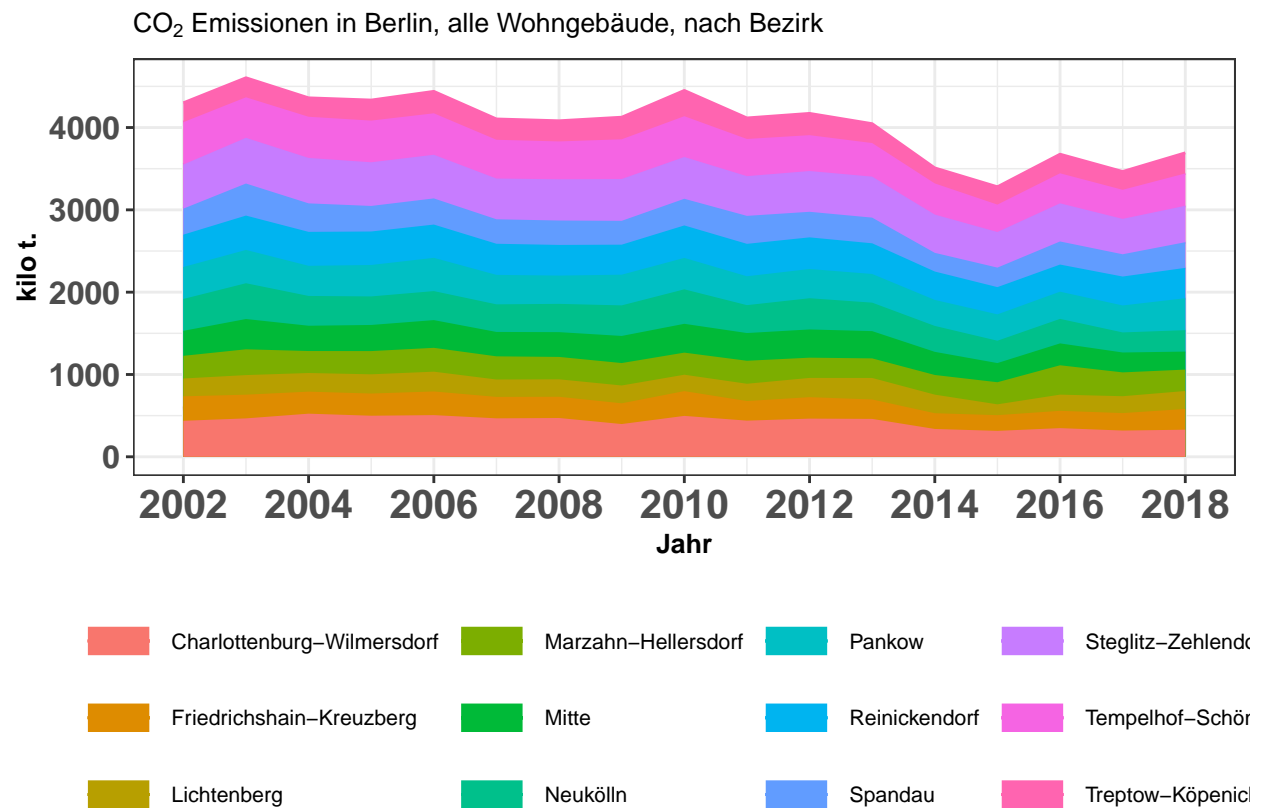
| Berlin, alle Wohngebäude, CO2 Emissionen | |
|---|---------|
| Jahr | kilo t. |
| 2002 | 4300.37 |
| 2003 | 4604.76 |
| 2004 | 4360.76 |
| 2005 | 4333.93 |
| 2006 | 4439.31 |
| 2007 | 4104.05 |
| 2008 | 4082.19 |
| 2009 | 4125.4 |
| 2010 | 4450.68 |
| 2011 | 4116.3 |
| 2012 | 4171.74 |
| 2013 | 4046.7 |
| 2014 | 3509.46 |
| 2015 | 3280.27 |
| 2016 | 3676.23 |
| 2017 | 3465.87 |
| 2018 | 3692.67 |

CO₂ Emissionen in Berlin, alle Wohngebäude, nach Energieträgern



| Berlin, alle Wohngebäude, CO2 Emissionen in kilo t. nach Energieträgern | | | | | | | |
|---|---------|--------|------------|---------|-------------|--------|---------|
| Jahr | Erdgas | Wärme | Flüssiggas | Heizöl | Holzpellets | Strom | Gesamt |
| 2002 | 1746.31 | 440.68 | 0 | 2034.86 | 0 | 78.52 | 4300.37 |
| 2003 | 1507.78 | 356.89 | 0 | 2661.57 | 0 | 78.52 | 4604.76 |
| 2004 | 1463.17 | 349.58 | 1.93 | 2467.57 | 0 | 78.52 | 4360.76 |
| 2005 | 1696.37 | 331.35 | 7.74 | 2219.9 | 0.05 | 78.52 | 4333.93 |
| 2006 | 1859.78 | 324.1 | 8.58 | 2168.26 | 0.06 | 78.52 | 4439.31 |
| 2007 | 1653.94 | 329.7 | 3.77 | 2038.04 | 0.06 | 78.52 | 4104.05 |
| 2008 | 1647.83 | 346.3 | 23.24 | 1986.11 | 0.18 | 78.52 | 4082.19 |
| 2009 | 1794.17 | 433.49 | 19.66 | 1799.08 | 0.47 | 78.52 | 4125.4 |
| 2010 | 1580.8 | 458.95 | 10.07 | 2377.49 | 0.74 | 22.64 | 4450.68 |
| 2011 | 1503.53 | 369.49 | 13.74 | 2190.03 | 1.55 | 37.98 | 4116.3 |
| 2012 | 1518.22 | 319.88 | 33.1 | 2246.58 | 1.86 | 52.1 | 4171.74 |
| 2013 | 1604.56 | 377.25 | 19.69 | 2015.53 | 2.05 | 27.62 | 4046.7 |
| 2014 | 1416.58 | 346.06 | 10.43 | 1694.63 | 0.33 | 41.44 | 3509.46 |
| 2015 | 1433.41 | 516.99 | 9.24 | 1235.57 | 1.18 | 83.89 | 3280.27 |
| 2016 | 1587.51 | 548.11 | 12.77 | 1336.27 | 2.66 | 188.89 | 3676.23 |
| 2017 | 1643.73 | 486.48 | 24.14 | 1146.23 | 3.81 | 161.46 | 3465.87 |
| 2018 | 1768.51 | 380.7 | 14.27 | 1427.27 | 11.23 | 90.69 | 3692.67 |

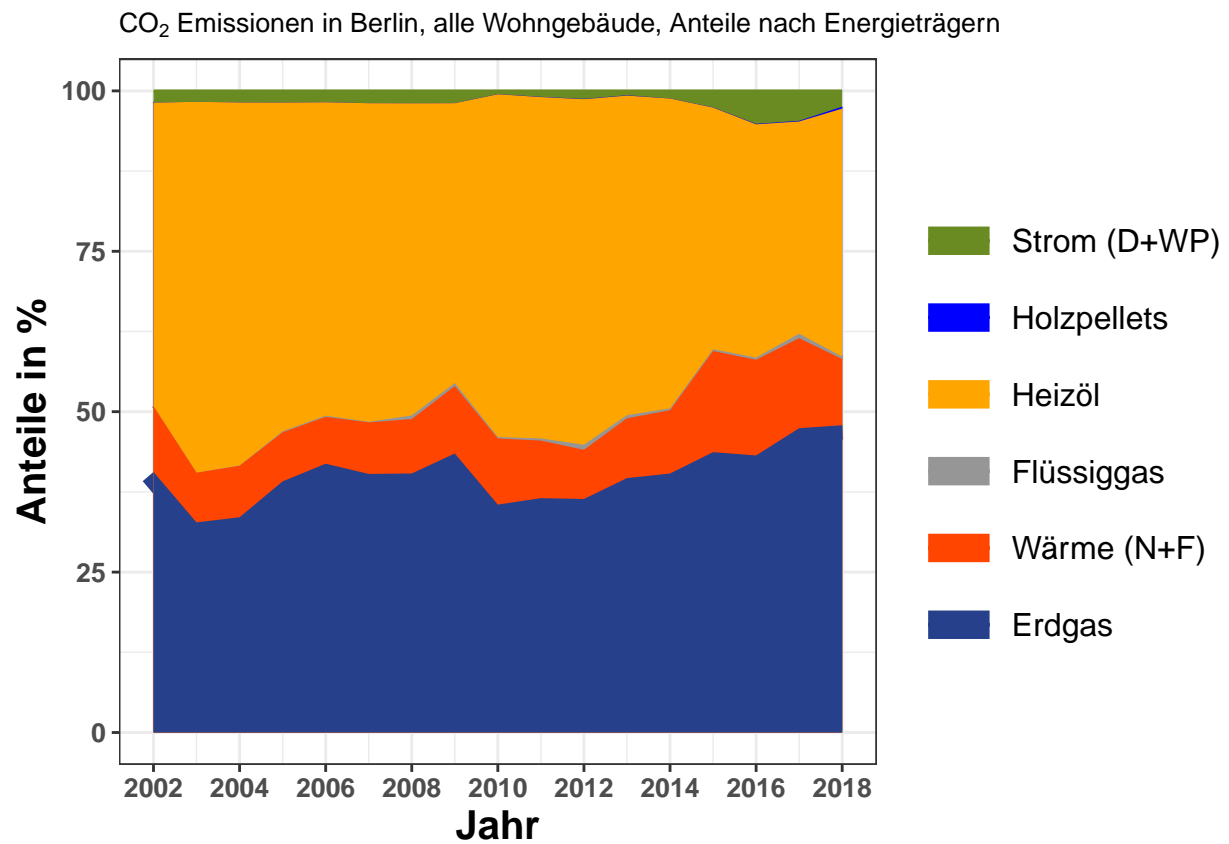
1.1.2 Stadtbezirke, MFH + 1-2 FH, CO₂-Emission aus der Beheizung von Wohnraum 2002-2018 summiert in 1.000 t



| Berlin, alle Wohngebäude, CO2 Emissionen nach Bezirken (kilo t.) | | | | | | |
|--|-------------------------------|------------------------------|-------------|-------------------------|--------|----------|
| Jahr | Charlottenburg- Wilmerdorf | Friedrichshain- Kreuzberg | Lichtenberg | Marzahn- Hellersdorf | Mitte | Neukölln |
| 2002 | 437.53 | 297.23 | 216.63 | 275.25 | 303.66 | 386.92 |
| 2003 | 466.56 | 288.02 | 238.35 | 313.2 | 367.63 | 434.62 |
| 2004 | 523.93 | 267.81 | 226.43 | 266.9 | 306.99 | 361.82 |
| 2005 | 499.07 | 269.54 | 233.57 | 282.3 | 317.15 | 346.51 |
| 2006 | 506.45 | 287.46 | 240.46 | 289.45 | 336.66 | 352.51 |
| 2007 | 467.43 | 260.42 | 211.05 | 281.63 | 296.08 | 335.18 |
| 2008 | 471.64 | 257.89 | 211.77 | 271.93 | 301.27 | 343.2 |
| 2009 | 397.9 | 252.15 | 216.26 | 272.43 | 329.34 | 371.21 |
| 2010 | 497.18 | 300.99 | 199.02 | 268.4 | 349.98 | 418.65 |
| 2011 | 439.28 | 238.12 | 210.18 | 279.11 | 336.52 | 338.83 |
| 2012 | 463.85 | 260.74 | 233.7 | 246.1 | 342.72 | 379.02 |
| 2013 | 460.54 | 236.02 | 261.3 | 237.8 | 331.07 | 345.89 |
| 2014 | 338.42 | 191.17 | 225.79 | 238.53 | 281.04 | 314.75 |
| 2015 | 314.95 | 190.96 | 131.41 | 268.71 | 232.65 | 271.37 |
| 2016 | 348.3 | 210.23 | 196.66 | 356.83 | 265.74 | 297.67 |
| 2017 | 318.84 | 212.43 | 204.88 | 289.43 | 241.61 | 243.67 |
| 2018 | 329.17 | 252.26 | 217.93 | 260.09 | 218.62 | 260.27 |

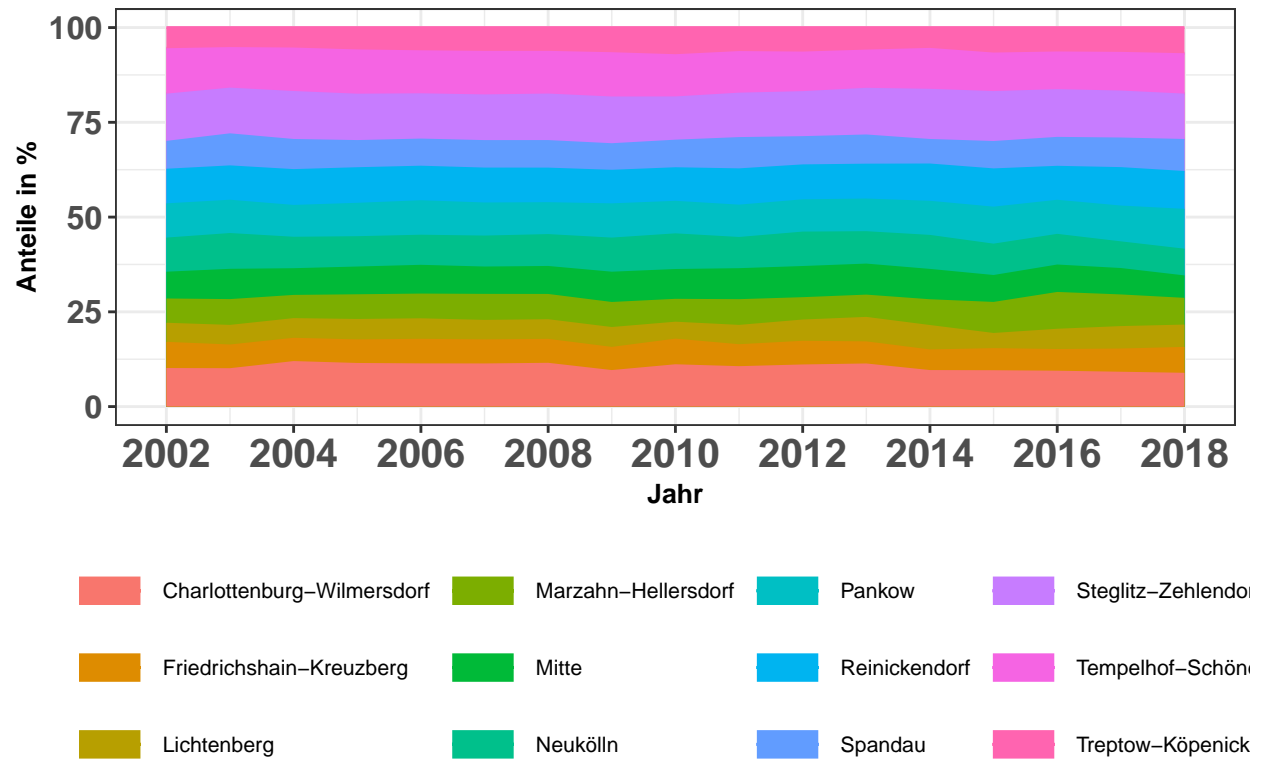
| Berlin, alle Wohngebäude, CO2 Emissionen nach Bezirken (kilo t.) | | | | | | |
|--|--------|---------------|---------|---------------------|----------------------|------------------|
| Jahr | Pankow | Reinickendorf | Spandau | Steglitz–Zehlendorf | Tempelhof–Schöneberg | Treptow–Köpenick |
| 2002 | 388.71 | 392.76 | 315.97 | 535.84 | 515.18 | 234.68 |
| 2003 | 404.8 | 417.07 | 389.69 | 555.19 | 492.24 | 237.37 |
| 2004 | 366.12 | 412.32 | 346.39 | 552.08 | 500.08 | 229.9 |
| 2005 | 381.94 | 406.99 | 310.41 | 530.58 | 506.18 | 249.7 |
| 2006 | 404.01 | 404.38 | 317.58 | 530.45 | 503.66 | 266.24 |
| 2007 | 358.18 | 377.99 | 297.42 | 495.07 | 471.02 | 252.57 |
| 2008 | 343.86 | 372.03 | 296.86 | 501.04 | 459.76 | 250.93 |
| 2009 | 372.74 | 365.02 | 289.51 | 508.42 | 482.27 | 268.16 |
| 2010 | 381.84 | 394.39 | 323.88 | 507.79 | 495.71 | 312.84 |
| 2011 | 351.16 | 393.81 | 339.73 | 482.66 | 451.61 | 255.29 |
| 2012 | 355.08 | 384.58 | 310.76 | 495.28 | 435.52 | 264.4 |
| 2013 | 348.42 | 372.45 | 311.82 | 498.25 | 407.97 | 235.17 |
| 2014 | 315.88 | 344.98 | 227.16 | 464.85 | 378.64 | 188.24 |
| 2015 | 320.32 | 330.94 | 237.1 | 432.26 | 333.27 | 216.32 |
| 2016 | 330.36 | 329.48 | 280.66 | 463.35 | 364.97 | 231.98 |
| 2017 | 327.46 | 351.52 | 270.53 | 429.69 | 353.52 | 222.29 |
| 2018 | 388.12 | 368.56 | 312.1 | 442.22 | 393.22 | 250.11 |

1.1.3 Stadtbezirke, MFH + 1-2 FH, CO₂-Emission aus der Beheizung von Wohnraum 2002-2018 in Prozent



| Berlin, alle Wohngebäude, CO2 Emissionen, Anteile nach Energieträgern (%) | | | | | | |
|---|--------|-------|------------|--------|-------------|-------|
| Jahr | Erdgas | Wärme | Flüssiggas | Heizöl | Holzpellets | Strom |
| 2002 | 40.61 | 10.25 | 0 | 47.32 | 0 | 1.83 |
| 2003 | 32.74 | 7.75 | 0 | 57.8 | 0 | 1.71 |
| 2004 | 33.55 | 8.02 | 0.04 | 56.59 | 0 | 1.8 |
| 2005 | 39.14 | 7.65 | 0.18 | 51.22 | 0 | 1.81 |
| 2006 | 41.89 | 7.3 | 0.19 | 48.84 | 0 | 1.77 |
| 2007 | 40.3 | 8.03 | 0.09 | 49.66 | 0 | 1.91 |
| 2008 | 40.37 | 8.48 | 0.57 | 48.65 | 0 | 1.92 |
| 2009 | 43.49 | 10.51 | 0.48 | 43.61 | 0.01 | 1.9 |
| 2010 | 35.52 | 10.31 | 0.23 | 53.42 | 0.02 | 0.51 |
| 2011 | 36.53 | 8.98 | 0.33 | 53.2 | 0.04 | 0.92 |
| 2012 | 36.39 | 7.67 | 0.79 | 53.85 | 0.04 | 1.25 |
| 2013 | 39.65 | 9.32 | 0.49 | 49.81 | 0.05 | 0.68 |
| 2014 | 40.36 | 9.86 | 0.3 | 48.29 | 0.01 | 1.18 |
| 2015 | 43.7 | 15.76 | 0.28 | 37.67 | 0.04 | 2.56 |
| 2016 | 43.18 | 14.91 | 0.35 | 36.35 | 0.07 | 5.14 |
| 2017 | 47.43 | 14.04 | 0.7 | 33.07 | 0.11 | 4.66 |
| 2018 | 47.89 | 10.31 | 0.39 | 38.65 | 0.3 | 2.46 |

CO₂ Emissionen in Berlin, alle Wohngebäude, Anteile nach Bezirk

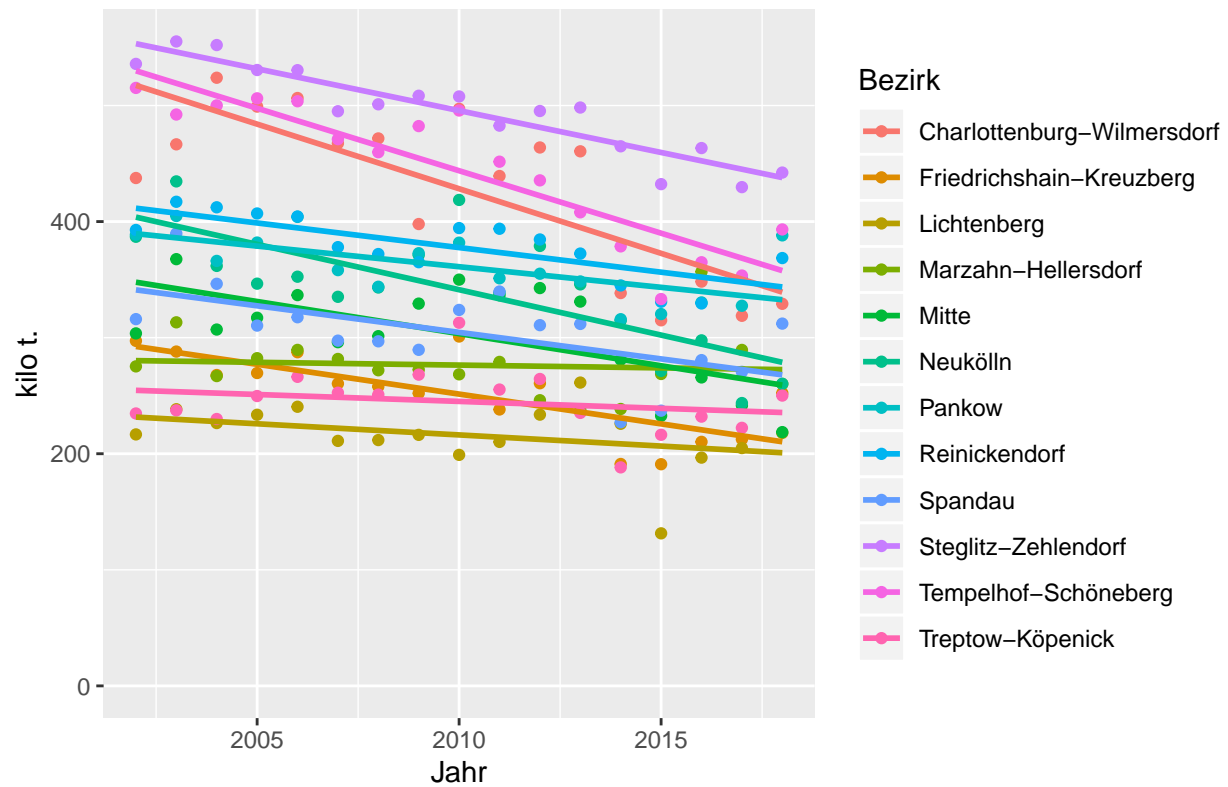


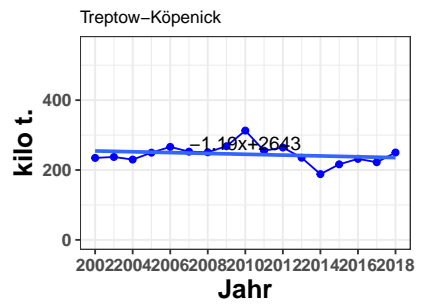
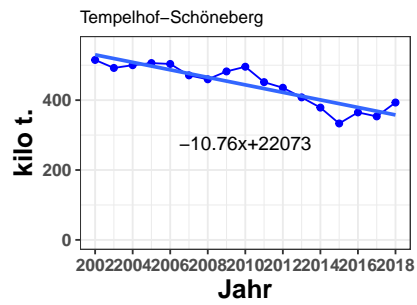
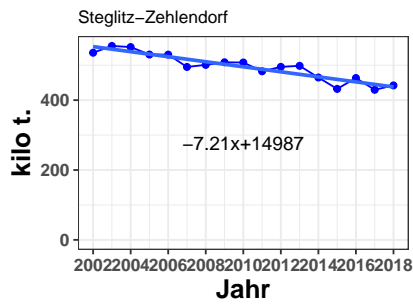
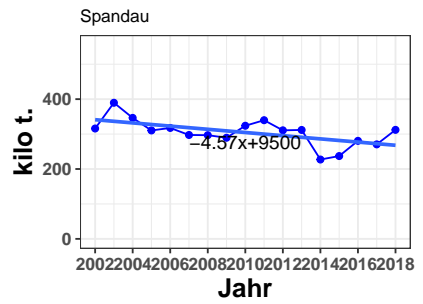
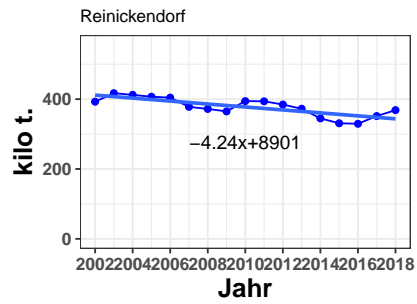
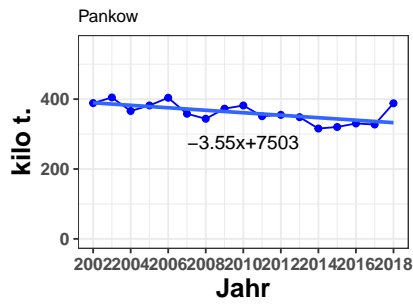
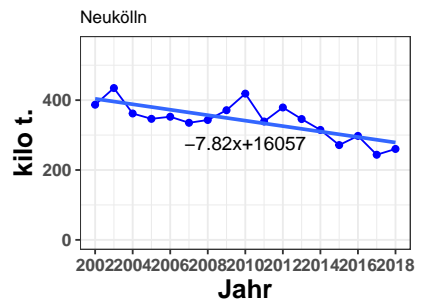
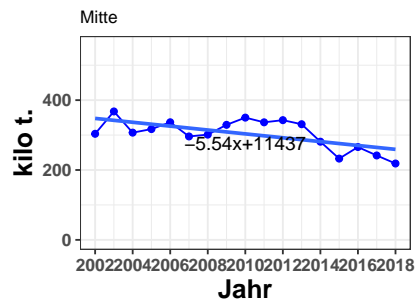
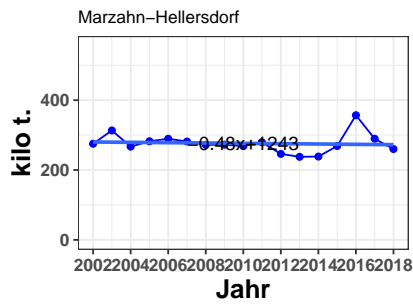
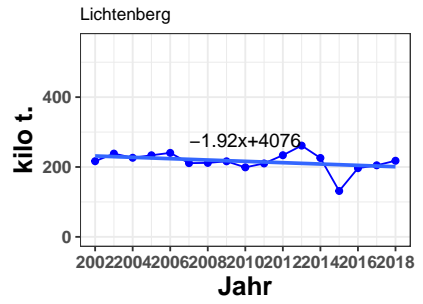
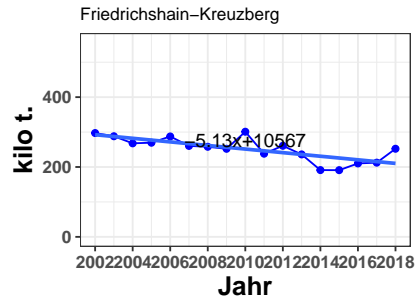
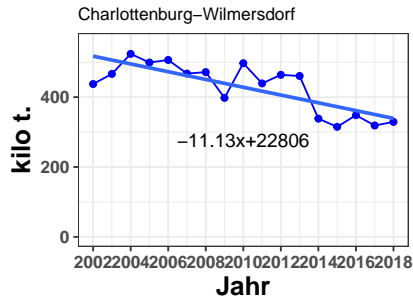
| Berlin, alle Wohngebäude, CO2 Emissionen, Anteile nach Bezirken (%) | | | | | | |
|---|-------------------------------|------------------------------|-------------|-------------------------|-------|----------|
| Jahr | Charlottenburg- Wilmerdorf | Friedrichshain- Kreuzberg | Lichtenberg | Marzahn- Hellersdorf | Mitte | Neukölln |
| 2002 | 10.17 | 6.91 | 5.04 | 6.4 | 7.06 | 9 |
| 2003 | 10.13 | 6.25 | 5.18 | 6.8 | 7.98 | 9.44 |
| 2004 | 12.01 | 6.14 | 5.19 | 6.12 | 7.04 | 8.3 |
| 2005 | 11.52 | 6.22 | 5.39 | 6.51 | 7.32 | 8 |
| 2006 | 11.41 | 6.48 | 5.42 | 6.52 | 7.58 | 7.94 |
| 2007 | 11.39 | 6.35 | 5.14 | 6.86 | 7.21 | 8.17 |
| 2008 | 11.55 | 6.32 | 5.19 | 6.66 | 7.38 | 8.41 |
| 2009 | 9.65 | 6.11 | 5.24 | 6.6 | 7.98 | 9 |
| 2010 | 11.17 | 6.76 | 4.47 | 6.03 | 7.86 | 9.41 |
| 2011 | 10.67 | 5.78 | 5.11 | 6.78 | 8.18 | 8.23 |
| 2012 | 11.12 | 6.25 | 5.6 | 5.9 | 8.22 | 9.09 |
| 2013 | 11.38 | 5.83 | 6.46 | 5.88 | 8.18 | 8.55 |
| 2014 | 9.64 | 5.45 | 6.43 | 6.8 | 8.01 | 8.97 |
| 2015 | 9.6 | 5.82 | 4.01 | 8.19 | 7.09 | 8.27 |
| 2016 | 9.47 | 5.72 | 5.35 | 9.71 | 7.23 | 8.1 |
| 2017 | 9.2 | 6.13 | 5.91 | 8.35 | 6.97 | 7.03 |
| 2018 | 8.91 | 6.83 | 5.9 | 7.04 | 5.92 | 7.05 |

| Berlin, alle Wohngebäude, CO2 Emissionen, Anteile nach Bezirken (%) | | | | | | |
|---|--------|---------------|---------|-------------------------|--------------------------|----------------------|
| Jahr | Pankow | Reinickendorf | Spandau | Steglitz– Zehlendorf | Tempelhof– Schöneberg | Treptow– Köpenick |
| 2002 | 9.04 | 9.13 | 7.35 | 12.46 | 11.98 | 5.46 |
| 2003 | 8.79 | 9.06 | 8.46 | 12.06 | 10.69 | 5.15 |
| 2004 | 8.4 | 9.46 | 7.94 | 12.66 | 11.47 | 5.27 |
| 2005 | 8.81 | 9.39 | 7.16 | 12.24 | 11.68 | 5.76 |
| 2006 | 9.1 | 9.11 | 7.15 | 11.95 | 11.35 | 6 |
| 2007 | 8.73 | 9.21 | 7.25 | 12.06 | 11.48 | 6.15 |
| 2008 | 8.42 | 9.11 | 7.27 | 12.27 | 11.26 | 6.15 |
| 2009 | 9.04 | 8.85 | 7.02 | 12.32 | 11.69 | 6.5 |
| 2010 | 8.58 | 8.86 | 7.28 | 11.41 | 11.14 | 7.03 |
| 2011 | 8.53 | 9.57 | 8.25 | 11.73 | 10.97 | 6.2 |
| 2012 | 8.51 | 9.22 | 7.45 | 11.87 | 10.44 | 6.34 |
| 2013 | 8.61 | 9.2 | 7.71 | 12.31 | 10.08 | 5.81 |
| 2014 | 9 | 9.83 | 6.47 | 13.25 | 10.79 | 5.36 |
| 2015 | 9.77 | 10.09 | 7.23 | 13.18 | 10.16 | 6.59 |
| 2016 | 8.99 | 8.96 | 7.63 | 12.6 | 9.93 | 6.31 |
| 2017 | 9.45 | 10.14 | 7.81 | 12.4 | 10.2 | 6.41 |
| 2018 | 10.51 | 9.98 | 8.45 | 11.98 | 10.65 | 6.77 |

1.1.4 Stadtbezirke, MFH + 1-2 FH, CO₂-Emission aus der Beheizung von Wohnraum 2002-2018 in 1.000 t

CO₂ Emissionen von Stadtbezirken, alle Wohngebäude



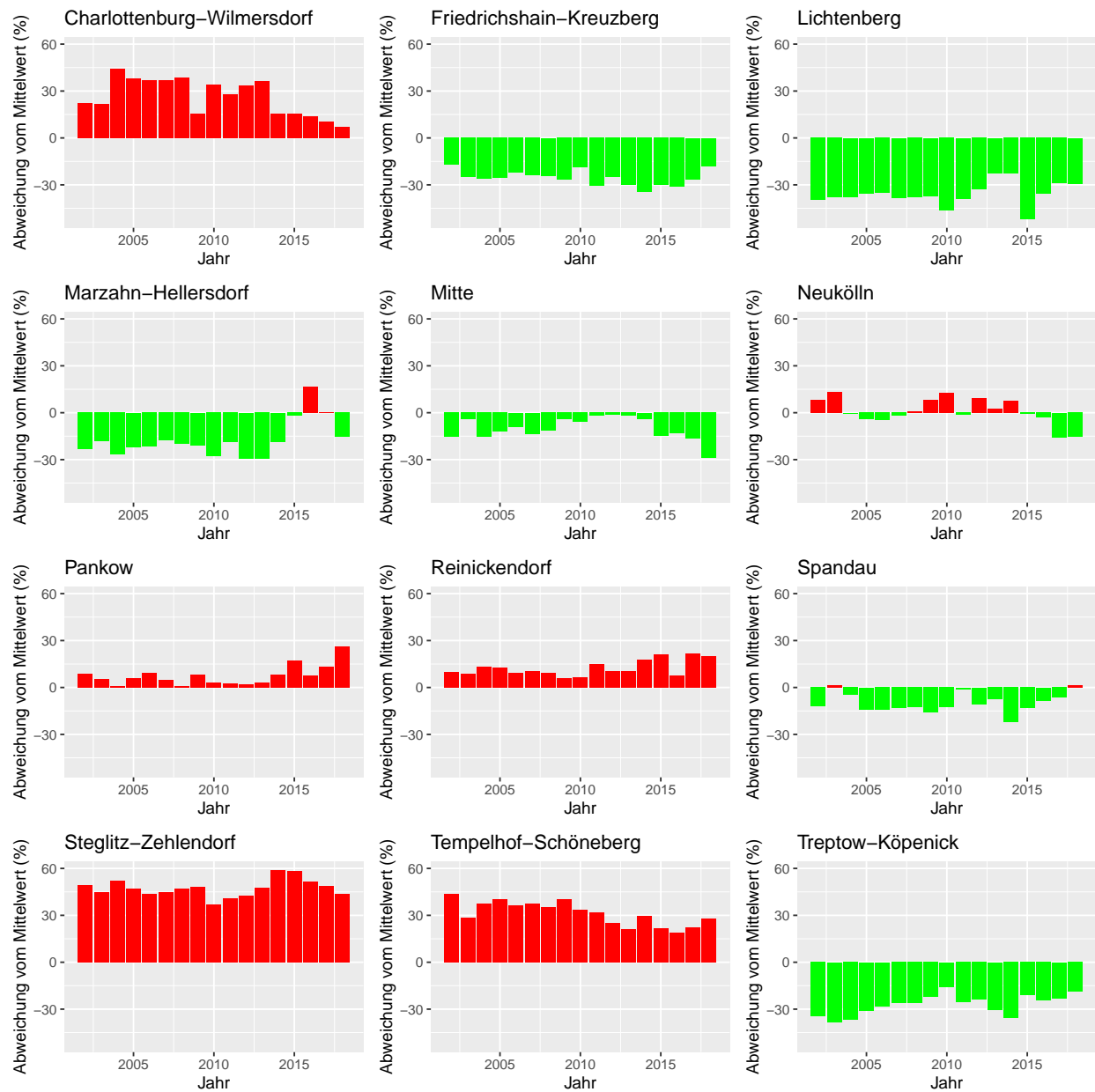


| Berlin, alle Wohngebäude, CO2 Emissionen nach Bezirken (kilo t.) | | | | | | |
|--|-------------------------------|------------------------------|-------------|-------------------------|--------|----------|
| Jahr | Charlottenburg- Wilmerdorf | Friedrichshain- Kreuzberg | Lichtenberg | Marzahn- Hellersdorf | Mitte | Neukölln |
| 2002 | 437.53 | 297.23 | 216.63 | 275.25 | 303.66 | 386.92 |
| 2003 | 466.56 | 288.02 | 238.35 | 313.2 | 367.63 | 434.62 |
| 2004 | 523.93 | 267.81 | 226.43 | 266.9 | 306.99 | 361.82 |
| 2005 | 499.07 | 269.54 | 233.57 | 282.3 | 317.15 | 346.51 |
| 2006 | 506.45 | 287.46 | 240.46 | 289.45 | 336.66 | 352.51 |
| 2007 | 467.43 | 260.42 | 211.05 | 281.63 | 296.08 | 335.18 |
| 2008 | 471.64 | 257.89 | 211.77 | 271.93 | 301.27 | 343.2 |
| 2009 | 397.9 | 252.15 | 216.26 | 272.43 | 329.34 | 371.21 |
| 2010 | 497.18 | 300.99 | 199.02 | 268.4 | 349.98 | 418.65 |
| 2011 | 439.28 | 238.12 | 210.18 | 279.11 | 336.52 | 338.83 |
| 2012 | 463.85 | 260.74 | 233.7 | 246.1 | 342.72 | 379.02 |
| 2013 | 460.54 | 236.02 | 261.3 | 237.8 | 331.07 | 345.89 |
| 2014 | 338.42 | 191.17 | 225.79 | 238.53 | 281.04 | 314.75 |
| 2015 | 314.95 | 190.96 | 131.41 | 268.71 | 232.65 | 271.37 |
| 2016 | 348.3 | 210.23 | 196.66 | 356.83 | 265.74 | 297.67 |
| 2017 | 318.84 | 212.43 | 204.88 | 289.43 | 241.61 | 243.67 |
| 2018 | 329.17 | 252.26 | 217.93 | 260.09 | 218.62 | 260.27 |

| Berlin, alle Wohngebäude, CO2 Emissionen nach Bezirken (kilo t.) | | | | | | |
|--|--------|---------------|---------|-------------------------|--------------------------|----------------------|
| Jahr | Pankow | Reinickendorf | Spandau | Steglitz– Zehlendorf | Tempelhof– Schöneberg | Treptow– Köpenick |
| 2002 | 388.71 | 392.76 | 315.97 | 535.84 | 515.18 | 234.68 |
| 2003 | 404.8 | 417.07 | 389.69 | 555.19 | 492.24 | 237.37 |
| 2004 | 366.12 | 412.32 | 346.39 | 552.08 | 500.08 | 229.9 |
| 2005 | 381.94 | 406.99 | 310.41 | 530.58 | 506.18 | 249.7 |
| 2006 | 404.01 | 404.38 | 317.58 | 530.45 | 503.66 | 266.24 |
| 2007 | 358.18 | 377.99 | 297.42 | 495.07 | 471.02 | 252.57 |
| 2008 | 343.86 | 372.03 | 296.86 | 501.04 | 459.76 | 250.93 |
| 2009 | 372.74 | 365.02 | 289.51 | 508.42 | 482.27 | 268.16 |
| 2010 | 381.84 | 394.39 | 323.88 | 507.79 | 495.71 | 312.84 |
| 2011 | 351.16 | 393.81 | 339.73 | 482.66 | 451.61 | 255.29 |
| 2012 | 355.08 | 384.58 | 310.76 | 495.28 | 435.52 | 264.4 |
| 2013 | 348.42 | 372.45 | 311.82 | 498.25 | 407.97 | 235.17 |
| 2014 | 315.88 | 344.98 | 227.16 | 464.85 | 378.64 | 188.24 |
| 2015 | 320.32 | 330.94 | 237.1 | 432.26 | 333.27 | 216.32 |
| 2016 | 330.36 | 329.48 | 280.66 | 463.35 | 364.97 | 231.98 |
| 2017 | 327.46 | 351.52 | 270.53 | 429.69 | 353.52 | 222.29 |
| 2018 | 388.12 | 368.56 | 312.1 | 442.22 | 393.22 | 250.11 |

1.1.5 Stadtbezirke, MFH + 1-2 FH, CO2-Emission aus der Beheizung von Wohnraum 2002-2018, Veränderung in Prozent

(CO2 emitted by a bezirk for a particualar year - Average CO2 emitted by a bezirk in particular year)/(Average CO2 emitted by a bezirk in particular year) times 100



| Berlin, CO2 Emissionen, Abweichung vom Mittelwert (%) | | | | | | |
|---|-------------------------------|------------------------------|-------------|-------------------------|--------|----------|
| Jahr | Charlottenburg- Wilmerdorf | Friedrichshain- Kreuzberg | Lichtenberg | Marzahn- Hellersdorf | Mitte | Neukölln |
| 2002 | 22.09 | -17.06 | -39.55 | -23.19 | -15.26 | 7.97 |
| 2003 | 21.59 | -24.94 | -37.89 | -18.38 | -4.19 | 13.26 |
| 2004 | 44.18 | -26.3 | -37.69 | -26.55 | -15.52 | -0.43 |
| 2005 | 38.19 | -25.37 | -35.33 | -21.84 | -12.19 | -4.06 |
| 2006 | 36.9 | -22.3 | -35 | -21.76 | -9 | -4.71 |
| 2007 | 36.67 | -23.86 | -38.29 | -17.65 | -13.43 | -1.99 |
| 2008 | 38.64 | -24.19 | -37.75 | -20.06 | -11.44 | 0.89 |
| 2009 | 15.74 | -26.65 | -37.09 | -20.75 | -4.2 | 7.98 |
| 2010 | 34.05 | -18.85 | -46.34 | -27.63 | -5.64 | 12.88 |
| 2011 | 28.06 | -30.58 | -38.73 | -18.63 | -1.9 | -1.22 |
| 2012 | 33.43 | -25 | -32.78 | -29.21 | -1.42 | 9.03 |
| 2013 | 36.57 | -30.01 | -22.51 | -29.48 | -1.83 | 2.57 |
| 2014 | 15.72 | -34.63 | -22.79 | -18.44 | -3.9 | 7.62 |
| 2015 | 15.22 | -30.14 | -51.93 | -1.7 | -14.89 | -0.72 |
| 2016 | 13.69 | -31.38 | -35.81 | 16.48 | -13.26 | -2.83 |
| 2017 | 10.39 | -26.45 | -29.06 | 0.21 | -16.35 | -15.63 |
| 2018 | 6.97 | -18.02 | -29.18 | -15.48 | -28.95 | -15.42 |

| Berlin, CO2 Emissionen, Abweichung vom Mittelwert (%) | | | | | | |
|---|--------|---------------|---------|---------------------|----------------------|------------------|
| Jahr | Pankow | Reinickendorf | Spandau | Steglitz-Zehlendorf | Tempelhof-Schöneberg | Treptow-Köpenick |
| 2002 | 8.47 | 9.6 | -11.83 | 49.52 | 43.76 | -34.51 |
| 2003 | 5.49 | 8.69 | 1.55 | 44.68 | 28.28 | -38.14 |
| 2004 | 0.75 | 13.46 | -4.68 | 51.92 | 37.61 | -36.74 |
| 2005 | 5.75 | 12.69 | -14.05 | 46.91 | 40.15 | -30.86 |
| 2006 | 9.21 | 9.31 | -14.15 | 43.39 | 36.15 | -28.03 |
| 2007 | 4.73 | 10.52 | -13.04 | 44.75 | 37.72 | -26.15 |
| 2008 | 1.08 | 9.36 | -12.74 | 47.29 | 35.15 | -26.24 |
| 2009 | 8.42 | 6.18 | -15.79 | 47.89 | 40.28 | -22 |
| 2010 | 2.95 | 6.34 | -12.68 | 36.91 | 33.65 | -15.65 |
| 2011 | 2.37 | 14.81 | -0.96 | 40.71 | 31.65 | -25.58 |
| 2012 | 2.14 | 10.62 | -10.61 | 42.47 | 25.28 | -23.95 |
| 2013 | 3.32 | 10.44 | -7.53 | 47.75 | 20.98 | -30.26 |
| 2014 | 8.01 | 17.96 | -22.33 | 58.95 | 29.47 | -35.63 |
| 2015 | 17.18 | 21.07 | -13.26 | 58.13 | 21.92 | -20.86 |
| 2016 | 7.84 | 7.55 | -8.39 | 51.25 | 19.14 | -24.28 |
| 2017 | 13.38 | 21.71 | -6.33 | 48.77 | 22.4 | -23.04 |
| 2018 | 26.13 | 19.77 | 1.42 | 43.71 | 27.78 | -18.72 |

1.1.6 Stadtbezirke, MFH + 1-2 FH, CO2-Emission aus der Beheizung von Wohnraum 2002-2018, in Prozent

- Pending

1.2 Flächenbezug

1.2.1 Berlin, MFH + 1-2 FH, flächenbezogene co2 Emission aus der Beheizung von Wohnraum 2002-2018 in kg/m2 [AN]

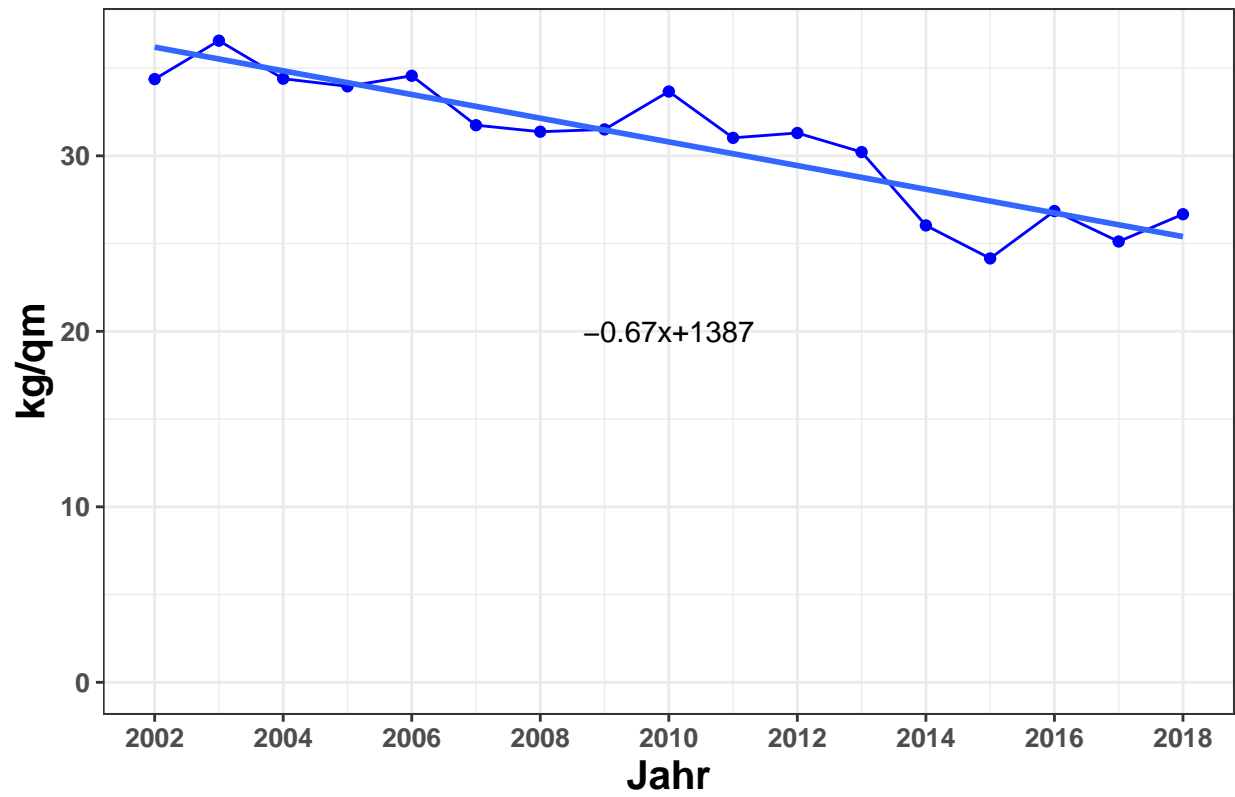
Here you have to get the areas of SFH and MFH buildings...

- Short method: Do as in BerlinPresentationCO2BalanceUnified_v7.Rmd. I.e. read directly from the file for total Berlin areas.
- Long method: find for each bezirk separately, and add them. The units of Bezirk areas are 100 m-squared in the original file. So multiply with 100 to get the areas in m².

WHY DO I GET A FACTOR OF 1.4 OFF IN THE TWO METHODS ????

Use the long method.

Spezifische CO₂ Emissionen in Berlin, alle Wohngebäude



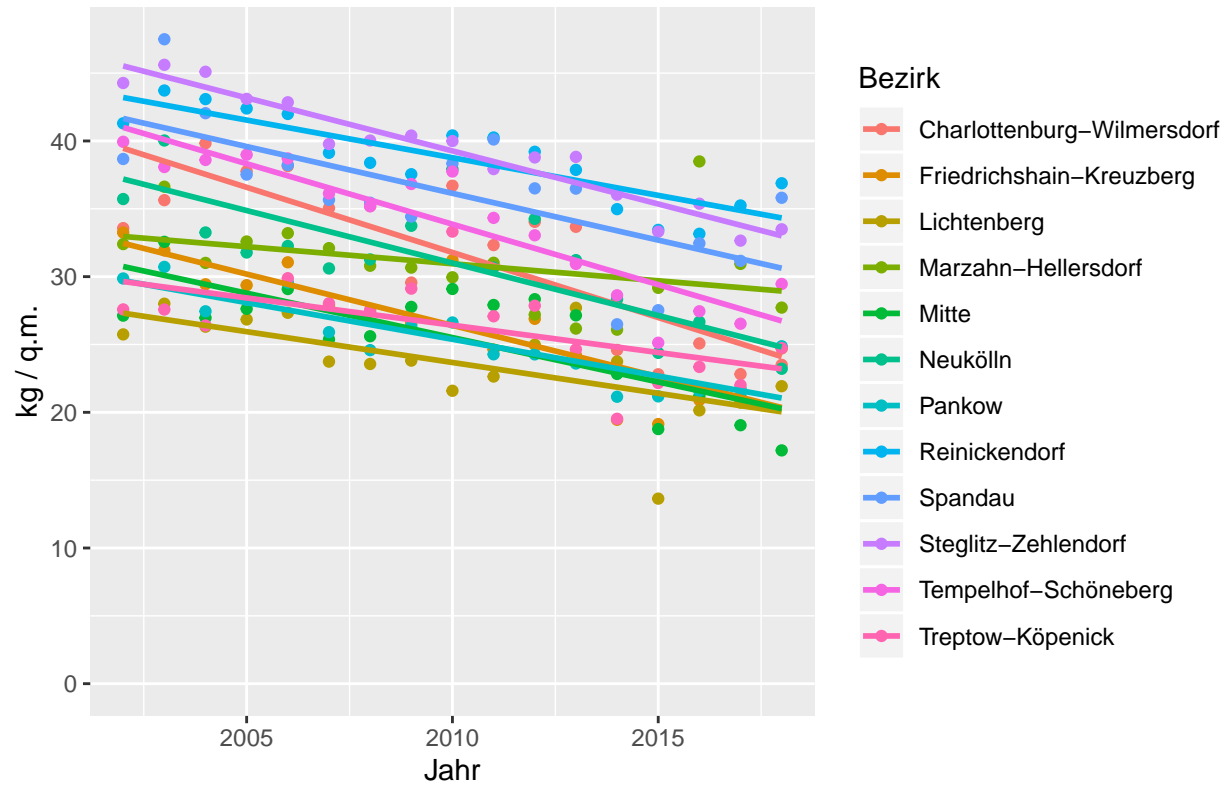
| Berlin, alle Wohngebäude, Spezifische CO2 Emissionen | |
|---|-----------|
| Jahr | kg / q.m. |
| 2002 | 34.37 |
| 2003 | 36.56 |
| 2004 | 34.4 |
| 2005 | 33.96 |
| 2006 | 34.56 |
| 2007 | 31.75 |
| 2008 | 31.37 |
| 2009 | 31.5 |
| 2010 | 33.66 |
| 2011 | 31.03 |
| 2012 | 31.3 |
| 2013 | 30.22 |
| 2014 | 26.03 |
| 2015 | 24.16 |
| 2016 | 26.85 |
| 2017 | 25.12 |
| 2018 | 26.67 |

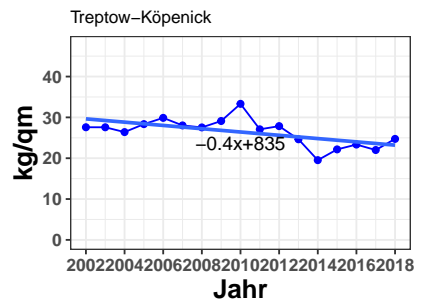
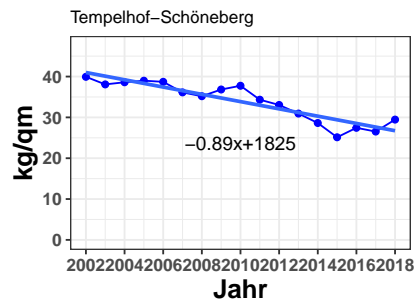
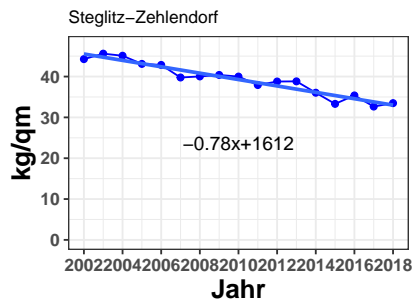
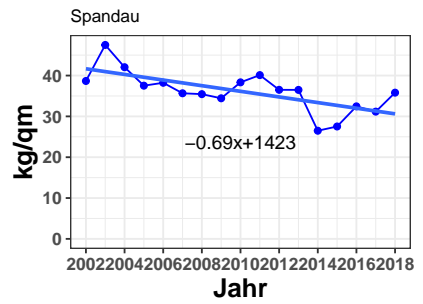
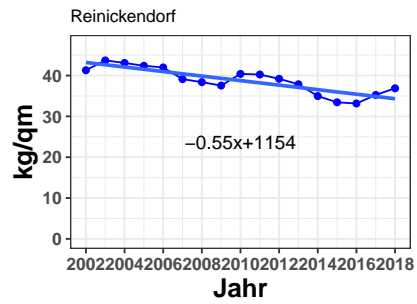
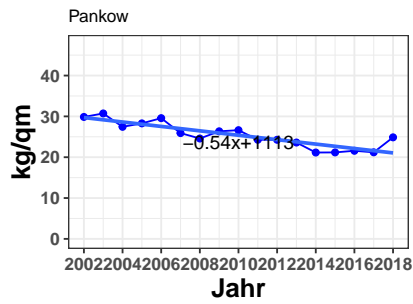
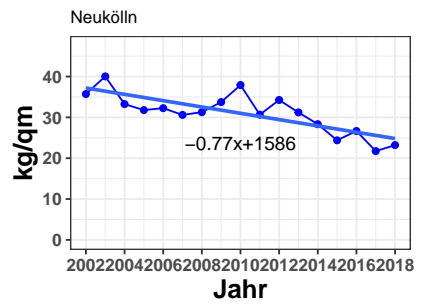
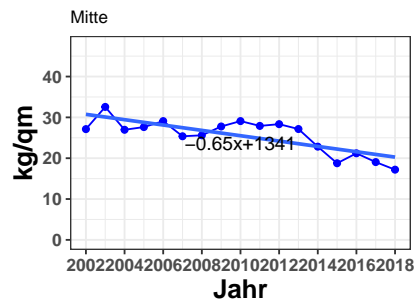
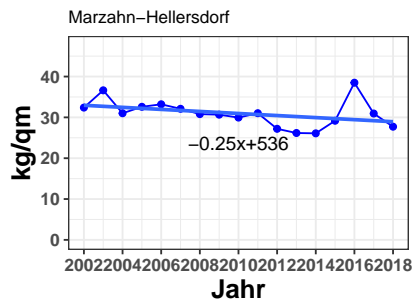
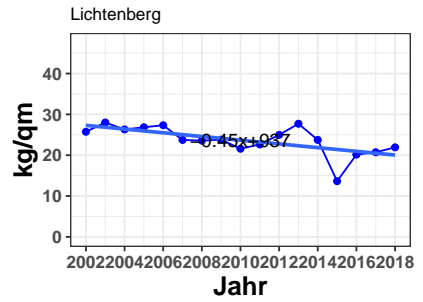
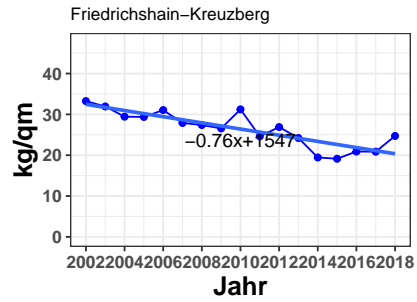
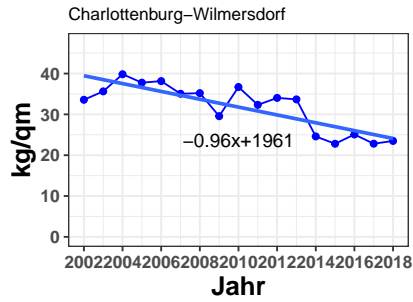
1.2.2 Stadtbezirke, MFH + 1-2 FH, flächenbezogene co2 Emission aus der Beheizung von Wohnraum 2002-2018 in kg/m2 [AN]

Is this not similar to 7.2.1?

Or am I supposed to show the pictures of all the bezirke simultaneously?

Spezifische CO₂ Emissionen von Stadtbezirken, alle Wohngebäude





| Berlin, alle Wohngebäude, Spezifische CO2 Emissionen nach Bezirken (kg / q.m.) | | | | | | |
|--|-------------------------------|------------------------------|-------------|-------------------------|-------|----------|
| Jahr | Charlottenburg- Wilmerdorf | Friedrichshain- Kreuzberg | Lichtenberg | Marzahn- Hellersdorf | Mitte | Neukölln |
| 2002 | 33.58 | 33.25 | 25.74 | 32.4 | 27.13 | 35.72 |
| 2003 | 35.64 | 31.94 | 28.01 | 36.63 | 32.56 | 40.03 |
| 2004 | 39.83 | 29.44 | 26.31 | 31.01 | 26.97 | 33.26 |
| 2005 | 37.77 | 29.37 | 26.84 | 32.59 | 27.63 | 31.78 |
| 2006 | 38.15 | 31.06 | 27.34 | 33.2 | 29.09 | 32.26 |
| 2007 | 35.05 | 27.9 | 23.74 | 32.1 | 25.37 | 30.61 |
| 2008 | 35.2 | 27.39 | 23.56 | 30.8 | 25.61 | 31.27 |
| 2009 | 29.56 | 26.56 | 23.81 | 30.67 | 27.77 | 33.75 |
| 2010 | 36.7 | 31.22 | 21.59 | 29.95 | 29.09 | 37.92 |
| 2011 | 32.33 | 24.62 | 22.64 | 31.02 | 27.91 | 30.67 |
| 2012 | 34.04 | 26.89 | 24.98 | 27.2 | 28.34 | 34.26 |
| 2013 | 33.67 | 24.21 | 27.7 | 26.17 | 27.15 | 31.22 |
| 2014 | 24.6 | 19.45 | 23.74 | 26.09 | 22.83 | 28.33 |
| 2015 | 22.8 | 19.13 | 13.64 | 29.18 | 18.77 | 24.38 |
| 2016 | 25.08 | 20.9 | 20.14 | 38.49 | 21.2 | 26.67 |
| 2017 | 22.81 | 20.86 | 20.72 | 30.94 | 19.05 | 21.73 |
| 2018 | 23.5 | 24.71 | 21.93 | 27.72 | 17.19 | 23.21 |

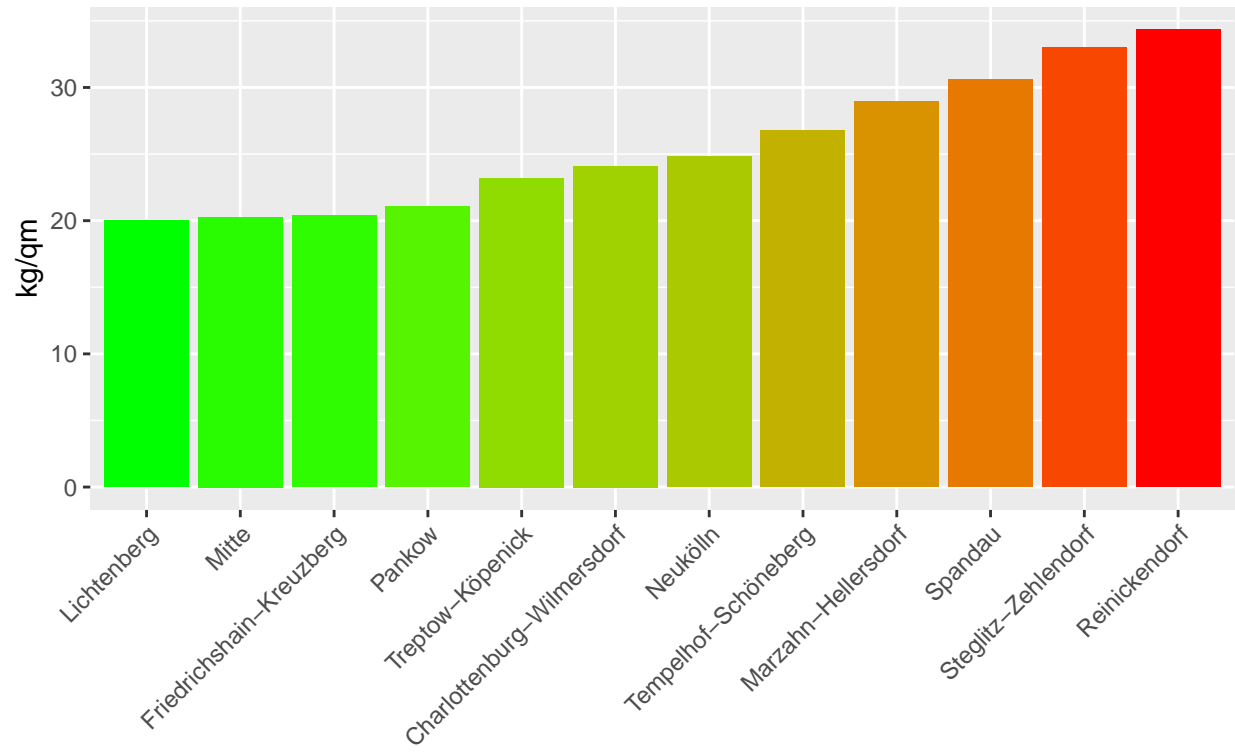
| Berlin, alle Wohngebäude, Spezifische CO2 Emissionen nach Bezirken (kg / q.m.) | | | | | | |
|--|--------|---------------|---------|---------------------|----------------------|------------------|
| Jahr | Pankow | Reinickendorf | Spandau | Steglitz–Zehlendorf | Tempelhof–Schöneberg | Treptow–Köpenick |
| 2002 | 29.86 | 41.3 | 38.67 | 44.27 | 39.94 | 27.58 |
| 2003 | 30.72 | 43.72 | 47.5 | 45.61 | 38.08 | 27.58 |
| 2004 | 27.45 | 43.08 | 42.05 | 45.1 | 38.6 | 26.4 |
| 2005 | 28.29 | 42.39 | 37.52 | 43.1 | 38.99 | 28.35 |
| 2006 | 29.57 | 41.99 | 38.23 | 42.85 | 38.71 | 29.88 |
| 2007 | 25.91 | 39.13 | 35.66 | 39.77 | 36.12 | 28.03 |
| 2008 | 24.58 | 38.39 | 35.45 | 40.03 | 35.19 | 27.55 |
| 2009 | 26.34 | 37.55 | 34.43 | 40.4 | 36.83 | 29.12 |
| 2010 | 26.62 | 40.41 | 38.34 | 39.99 | 37.75 | 33.32 |
| 2011 | 24.28 | 40.26 | 40.11 | 37.93 | 34.33 | 27.08 |
| 2012 | 24.27 | 39.2 | 36.51 | 38.79 | 33.05 | 27.86 |
| 2013 | 23.6 | 37.87 | 36.49 | 38.83 | 30.94 | 24.64 |
| 2014 | 21.15 | 34.98 | 26.49 | 36.04 | 28.63 | 19.53 |
| 2015 | 21.18 | 33.45 | 27.53 | 33.31 | 25.13 | 22.16 |
| 2016 | 21.58 | 33.16 | 32.45 | 35.37 | 27.45 | 23.35 |
| 2017 | 21.2 | 35.25 | 31.16 | 32.65 | 26.53 | 22.01 |
| 2018 | 24.87 | 36.88 | 35.81 | 33.49 | 29.46 | 24.73 |

1.2.3 Stadtbezirke, MFH + 1-2 FH, flächenbezogene co2 Emission aus der Beheizung von Wohnraum im Jahr 2018 in kg/m2 [AN]

2018 values for the specific CO2 emission in each bezirk

Here it makes more sense to put in the values of the linear trend...

Spezifische CO₂ Emissionen 2018, alle Wohngebäude



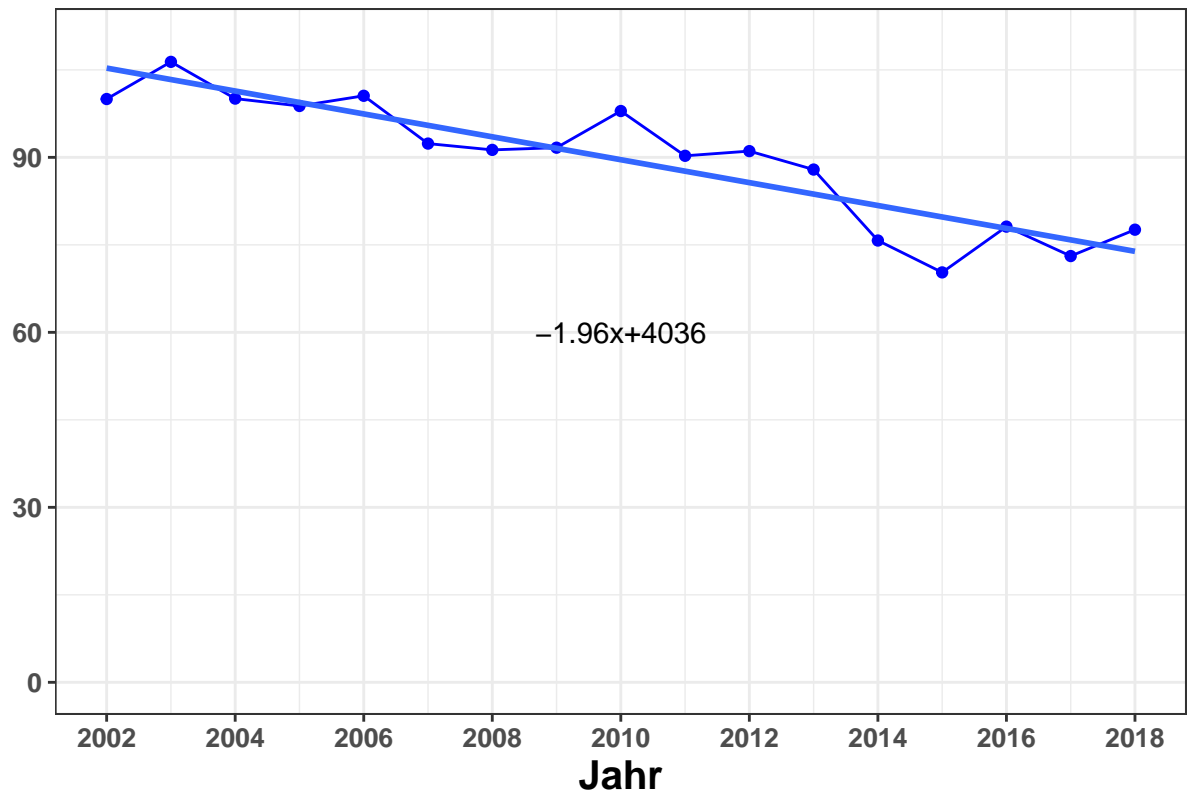
| Berlin, alle Wohngebäude, CO2 Emissionen (2018) | |
|--|------------------|
| Bezirk | kg / q.m. |
| Charlottenburg–Wilmerdorf | 24.10 |
| Friedrichshain–Kreuzberg | 20.36 |
| Lichtenberg | 20.04 |
| Marzahn–Hellersdorf | 28.94 |
| Mitte | 20.27 |
| Neukölln | 24.81 |
| Pankow | 21.05 |
| Reinickendorf | 34.33 |
| Spandau | 30.62 |
| Steglitz–Zehlendorf | 33.01 |
| Tempelhof–Schöneberg | 26.74 |
| Treptow–Köpenick | 23.20 |

1.2.4 Berlin, flächenbezogene co2 Emission aus Beheizung von Wohnraum nach Stadtbezirken, 2002-2008, 2002=100

The per unit area co2 emission when the 2002 value is 100.

spez_co2_emission contains the berlin values of the specific co2 emission.

Spezifische CO₂ Emissionen in Berlin, alle Wohngebäude, 2002 Wert = 100



| Berlin, alle Wohngebäude, Spezifische CO2 Emissionen (2002 Wert = 100) | |
|--|--------|
| Jahr | Wert |
| 2002 | 100 |
| 2003 | 106.37 |
| 2004 | 100.07 |
| 2005 | 98.81 |
| 2006 | 100.55 |
| 2007 | 92.36 |
| 2008 | 91.28 |
| 2009 | 91.66 |
| 2010 | 97.94 |
| 2011 | 90.26 |
| 2012 | 91.07 |
| 2013 | 87.91 |
| 2014 | 75.74 |
| 2015 | 70.28 |
| 2016 | 78.13 |
| 2017 | 73.08 |
| 2018 | 77.6 |

1.2.5 Alle Stadtbezirke, MFH + 1-2 FH, flächenbezogene CO₂ Emission aus der Beheizung von Wohnraum, Entwicklung 2002-2018 und Niveau 2018 (Rang-folge)

Specific CO2 emission in bezirk X in 2018 - Specific CO2 emission in Berlin in 2018

Take the Berlin specific CO2 emission for 2018 as the baseline, Subtract from this the 2018 value of specific co2 emission of Stadtbezirk X. Do for all the bezirks and make a barplot.

Make a linear trend of `spez_co2_emission`. This is the value for Berlin total. The 2018 value is the baseline. `bezirke_spezco2_linear_2018` gives the 2018 values of the linear trend for the bezirke.

First find the linear trend:

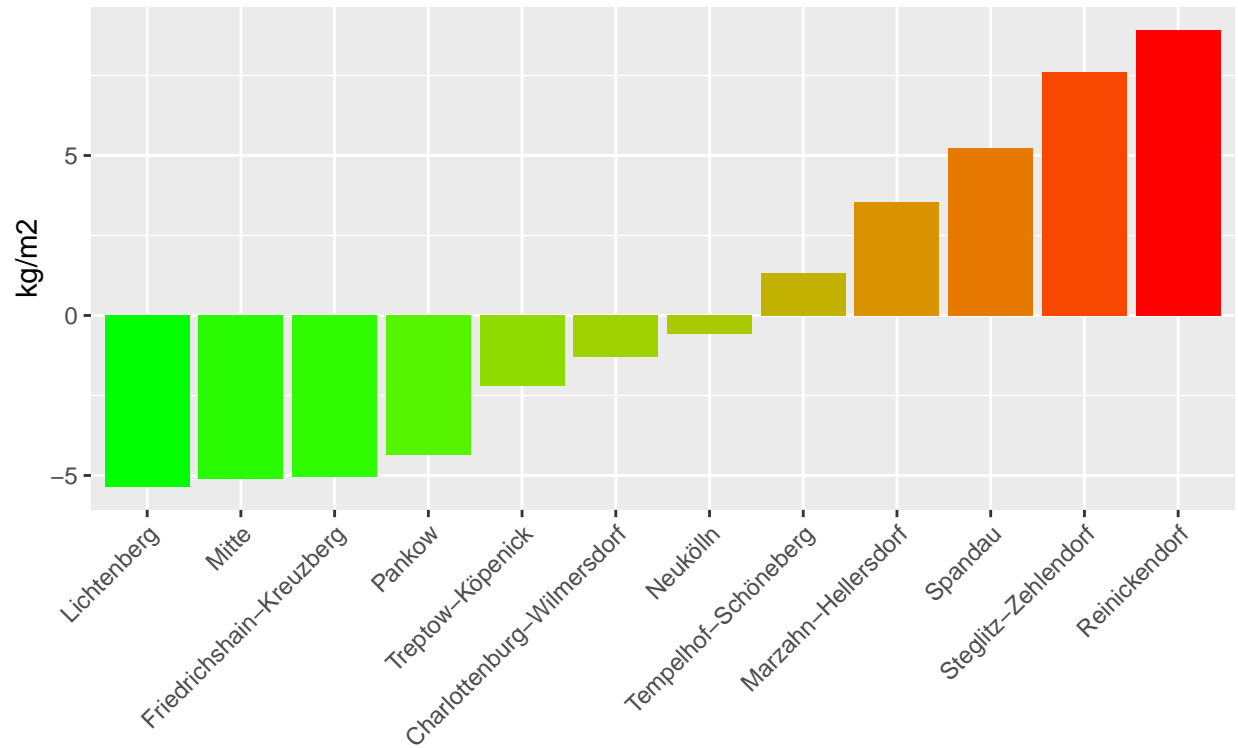
```

bezirke_spezco2_linear_2018$bezirk <- factor(
  bezirke_spezco2_linear_2018$bezirk ,
  levels = bezirke_spezco2_linear_2018$bezirk[order(bezirke_spezco2_linear_2018$dev_from_berlin)])

ggplot(data=bezirke_spezco2_linear_2018,aes(x=bezirk,y=dev_from_berlin,fill=dev_from_berlin))+geom_bar(
  low="green",high="red"
)+theme(legend.position="none",axis.text.x=element_text(angle=45,hjust=1))+labs(x=" ")#coord_flip()

```

Abweichung von Berlin 2018, Spezifische CO₂ Emissionen, alle Wohngebäude



| Bezirke, alle Wohngebäude, CO2 Emissionen (2018) Abweichung von Berlin | |
|---|------------------|
| Bezirk | kg / q.m. |
| Charlottenburg–Wilmerdorf | –1.29 |
| Friedrichshain–Kreuzberg | –5.04 |
| Lichtenberg | –5.36 |
| Marzahn–Hellersdorf | 3.54 |
| Mitte | –5.12 |
| Neukölln | –0.58 |
| Pankow | –4.34 |
| Reinickendorf | 8.93 |
| Spandau | 5.23 |
| Steglitz–Zehlendorf | 7.61 |
| Tempelhof–Schöneberg | 1.34 |
| Treptow–Köpenick | –2.19 |

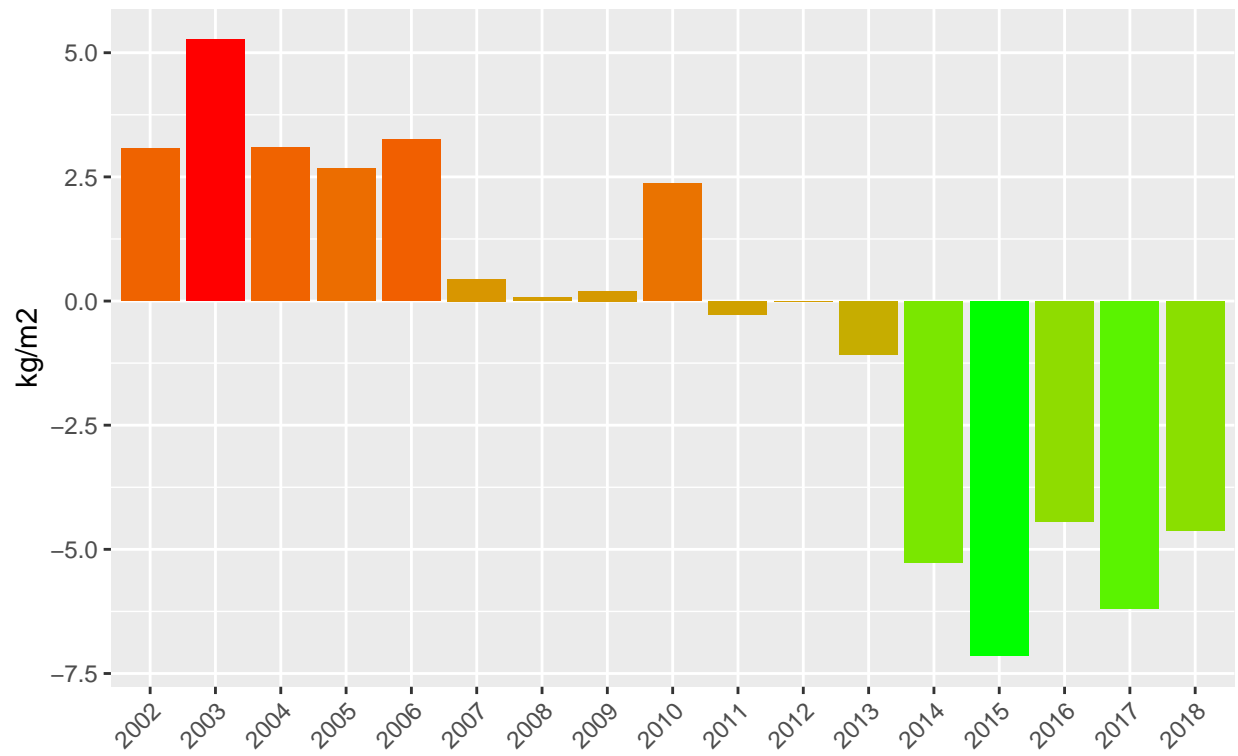
1.2.6 Berlin, MFH + 1-2 FH, durchschnittliche Emissionsminderung je qm Nutzfläche im Zeitraum 2002-2018

Berlin, specific co2 emission with 2012 value as the reference

Take the 2012 value of specific co2 emission as the base line. Plot the changes of each year with respect to this value.

spez_co2_emission contains the berlin specific co2 emissions.

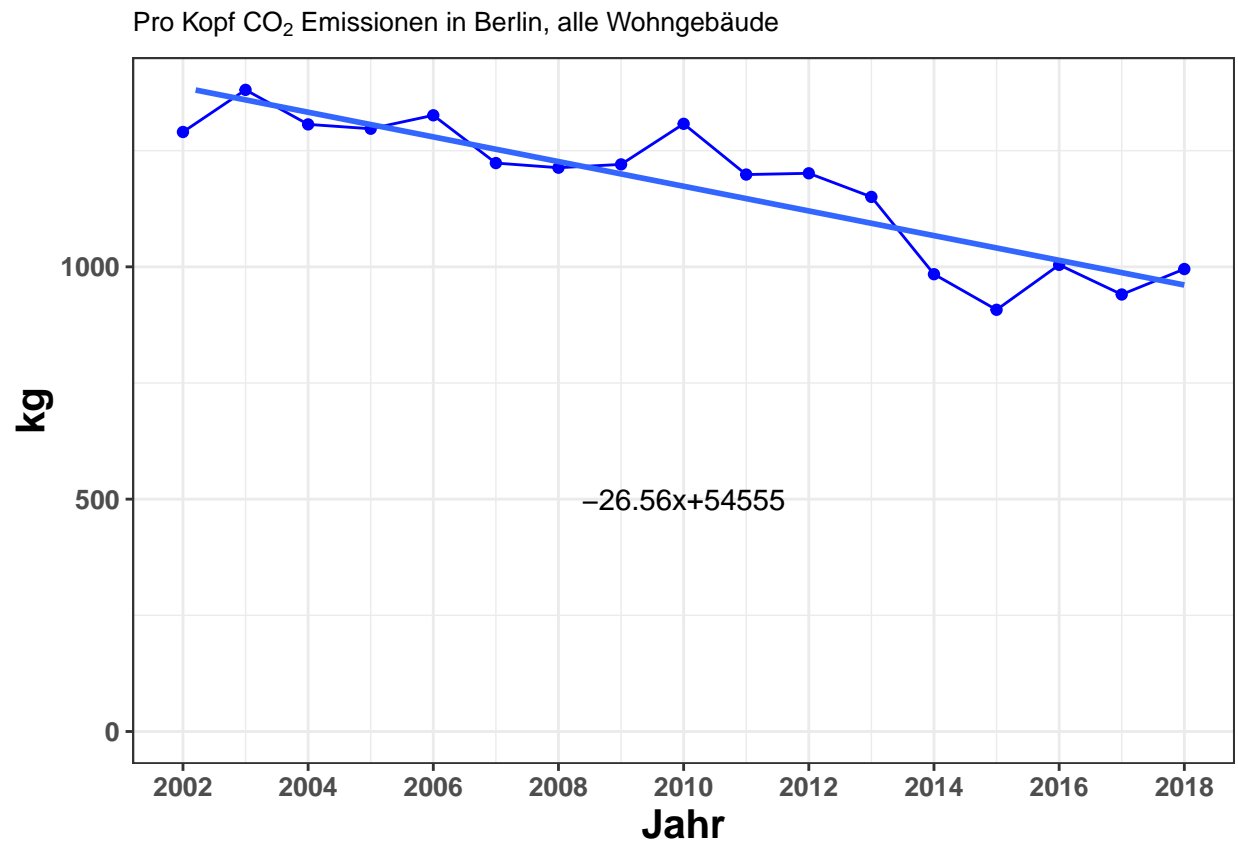
Spezifische CO₂ Emissionen, Berlin, alle Wohngebäude, zentriert um 2012



| Berlin, alle Wohngebäude, Spezifische CO2 Emissionen Zentriert um 2012 | |
|---|------------------|
| Jahr | kg / q.m. |
| 2002 | 3.07 |
| 2003 | 5.26 |
| 2004 | 3.09 |
| 2005 | 2.66 |
| 2006 | 3.26 |
| 2007 | 0.44 |
| 2008 | 0.07 |
| 2009 | 0.2 |
| 2010 | 2.36 |
| 2011 | −0.28 |
| 2012 | 0 |
| 2013 | −1.09 |
| 2014 | −5.27 |
| 2015 | −7.15 |
| 2016 | −4.45 |
| 2017 | −6.18 |
| 2018 | −4.63 |

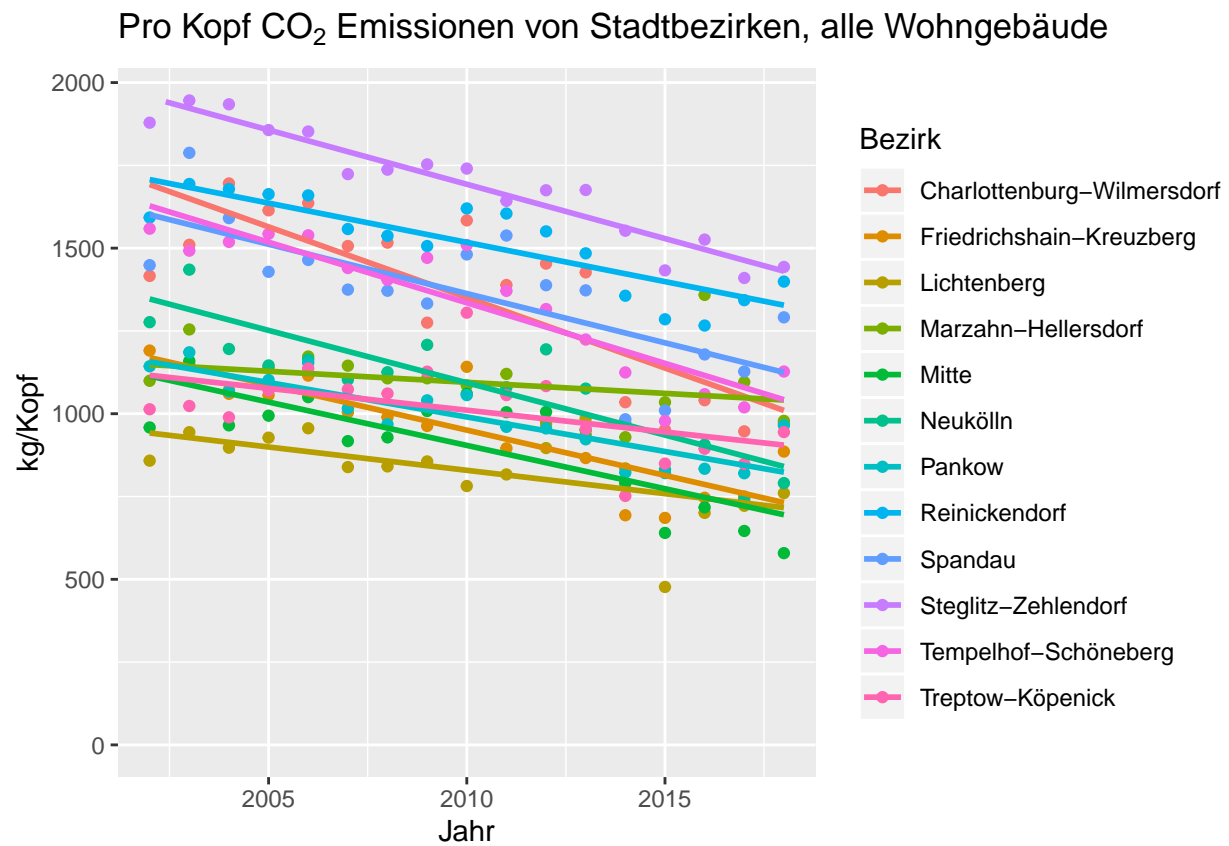
1.3 Emission pro Einwohner

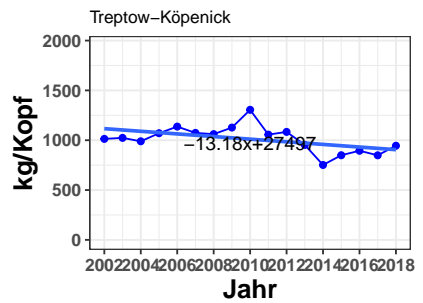
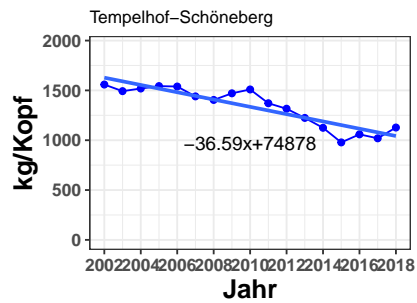
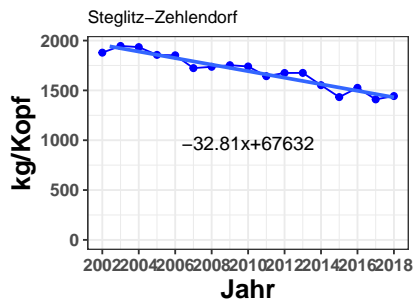
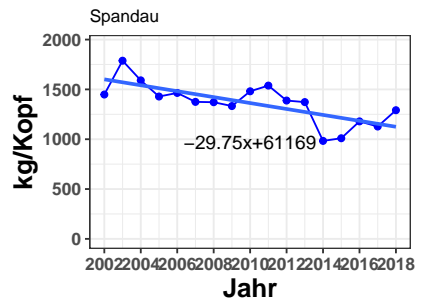
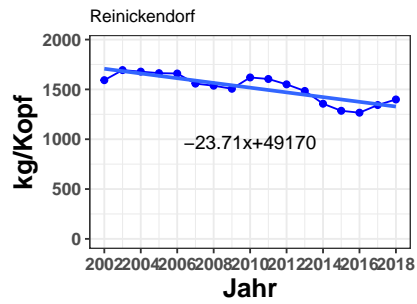
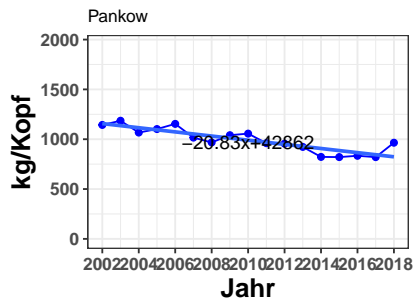
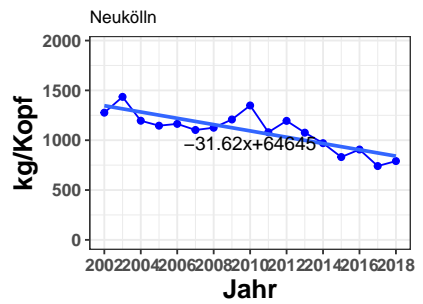
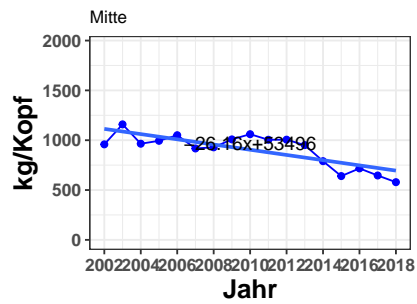
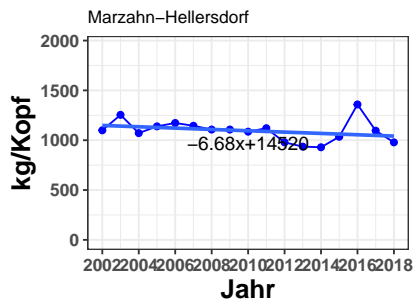
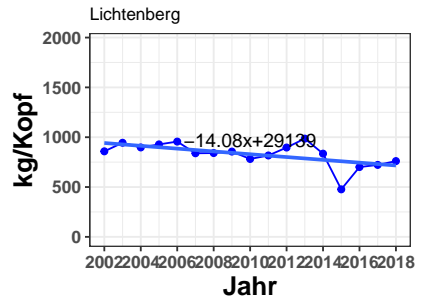
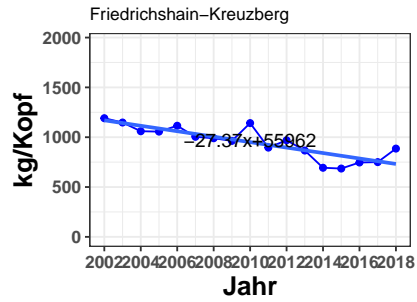
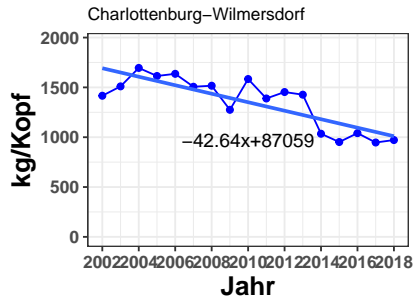
1.3.1 Stadtbezirke, MFH + 1-2 FH, co2-Emission aus der Beheizung von Wohnraum pro Einwohner



| Berlin, alle Wohngebäude, Pro Kopf CO2 Emissionen | |
|--|---------|
| Jahr | kilo t. |
| 2002 | 1290.16 |
| 2003 | 1380.84 |
| 2004 | 1306.57 |
| 2005 | 1297.16 |
| 2006 | 1326.11 |
| 2007 | 1223.29 |
| 2008 | 1213.29 |
| 2009 | 1220.46 |
| 2010 | 1307.73 |
| 2011 | 1198.59 |
| 2012 | 1201.27 |
| 2013 | 1150.51 |
| 2014 | 984.15 |
| 2015 | 907.54 |
| 2016 | 1004.27 |
| 2017 | 940.48 |
| 2018 | 995.27 |

1.3.2. Stadtbezirke, MFH + 1-2 FH, CO₂-Emission aus der Beheizung von Wohnraum pro Einwohner

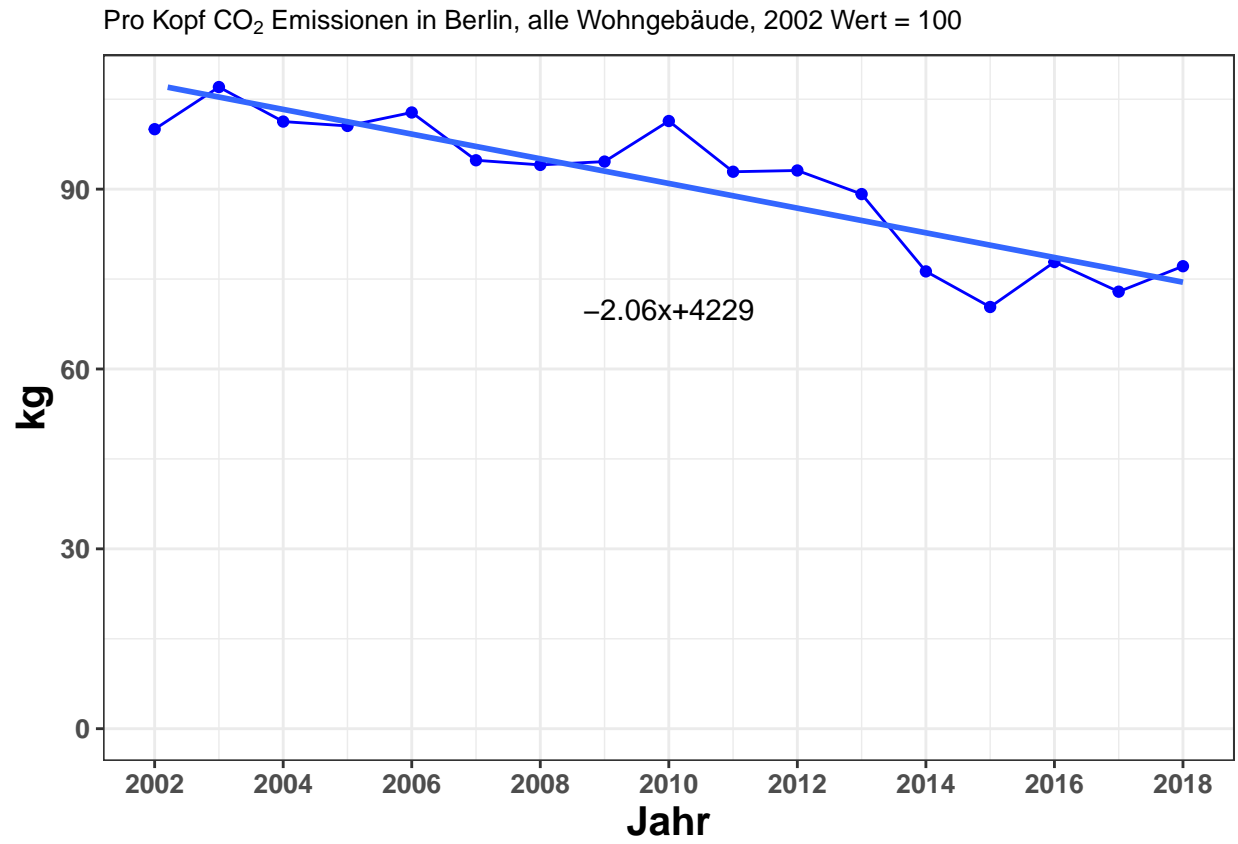




| Berlin, alle Wohngebäude, Pro Kopf CO2 Emissionen nach Bezirken (kg) | | | | | | |
|--|-------------------------------|------------------------------|-------------|-------------------------|---------|----------|
| Jahr | Charlottenburg- Wilmerdorf | Friedrichshain- Kreuzberg | Lichtenberg | Marzahn- Hellersdorf | Mitte | Neukölln |
| 2002 | 1416.13 | 1190.76 | 858.27 | 1099.48 | 958.53 | 1276.55 |
| 2003 | 1510.17 | 1147.45 | 944.31 | 1254.55 | 1159.12 | 1435.07 |
| 2004 | 1695.34 | 1060.13 | 897.35 | 1071.25 | 964.87 | 1195.57 |
| 2005 | 1614.3 | 1056.16 | 927.8 | 1139.11 | 994.1 | 1145.84 |
| 2006 | 1636.16 | 1115.03 | 956.1 | 1172.72 | 1050.2 | 1163.89 |
| 2007 | 1506.48 | 1004 | 838.88 | 1145.12 | 917.32 | 1102.7 |
| 2008 | 1516.67 | 989.76 | 840.98 | 1106.88 | 928.58 | 1125.32 |
| 2009 | 1275.03 | 963.06 | 855.92 | 1107.05 | 1008.25 | 1208.04 |
| 2010 | 1583.83 | 1141.71 | 781.7 | 1085.64 | 1060.45 | 1348.77 |
| 2011 | 1388.68 | 895.58 | 816.67 | 1120.28 | 1004.57 | 1080.03 |
| 2012 | 1453.37 | 969.21 | 896.32 | 978.36 | 1005.41 | 1194.39 |
| 2013 | 1426.8 | 866.16 | 985.85 | 935.56 | 950.81 | 1075.85 |
| 2014 | 1034.78 | 693.46 | 834.98 | 929.1 | 789.78 | 970.36 |
| 2015 | 951.65 | 685.49 | 476.86 | 1034.7 | 640.14 | 830.99 |
| 2016 | 1040.81 | 746.27 | 700.61 | 1358.84 | 717.22 | 906.73 |
| 2017 | 946.89 | 750.11 | 722.04 | 1095.47 | 646 | 740.78 |
| 2018 | 971.58 | 885.74 | 760.34 | 978.46 | 578.97 | 790.55 |

| Berlin, alle Wohngebäude, Pro Kopf CO2 Emissionen nach Bezirken (kg) | | | | | | |
|--|---------|---------------|---------|-------------------------|--------------------------|----------------------|
| Jahr | Pankow | Reinickendorf | Spandau | Steglitz– Zehlendorf | Tempelhof– Schöneberg | Treptow– Köpenick |
| 2002 | 1143.34 | 1592.56 | 1448.59 | 1878.86 | 1558.75 | 1013.53 |
| 2003 | 1185.45 | 1693.72 | 1787.9 | 1946.05 | 1492.45 | 1023.47 |
| 2004 | 1066.81 | 1678.45 | 1590.76 | 1934.42 | 1518.95 | 989.22 |
| 2005 | 1101.94 | 1663.06 | 1428.57 | 1856.64 | 1543.1 | 1070.3 |
| 2006 | 1154.08 | 1659.35 | 1464.5 | 1852.22 | 1538.85 | 1136.75 |
| 2007 | 1016.29 | 1557.84 | 1374.78 | 1723.6 | 1439.97 | 1073.64 |
| 2008 | 967.93 | 1537.13 | 1371.36 | 1736.99 | 1404.29 | 1061.02 |
| 2009 | 1040.46 | 1506.35 | 1332.86 | 1752.99 | 1470.76 | 1127.02 |
| 2010 | 1056.19 | 1619.91 | 1481.02 | 1740.3 | 1509.47 | 1305.1 |
| 2011 | 960.38 | 1604.48 | 1538.15 | 1642.75 | 1371.03 | 1056.3 |
| 2012 | 955.61 | 1550.68 | 1388.14 | 1674.83 | 1316.06 | 1083.51 |
| 2013 | 922.8 | 1484.38 | 1372.63 | 1675.72 | 1224 | 952.85 |
| 2014 | 822.51 | 1356.33 | 983.23 | 1552.54 | 1124.7 | 751.72 |
| 2015 | 820.67 | 1285.26 | 1009.78 | 1432.85 | 978.13 | 849.5 |
| 2016 | 833.8 | 1266.29 | 1179.02 | 1525.91 | 1059 | 894.23 |
| 2017 | 820.34 | 1343 | 1127.46 | 1409.97 | 1019.21 | 848.74 |
| 2018 | 964.88 | 1399 | 1291.14 | 1443.22 | 1127.47 | 944.64 |

1.3.3 Stadtbezirke, MFH + 1-2 FH, co2-Emission pro Einwohner aus der Beheizung von Wohnraum, 2002-2018, 2002=100

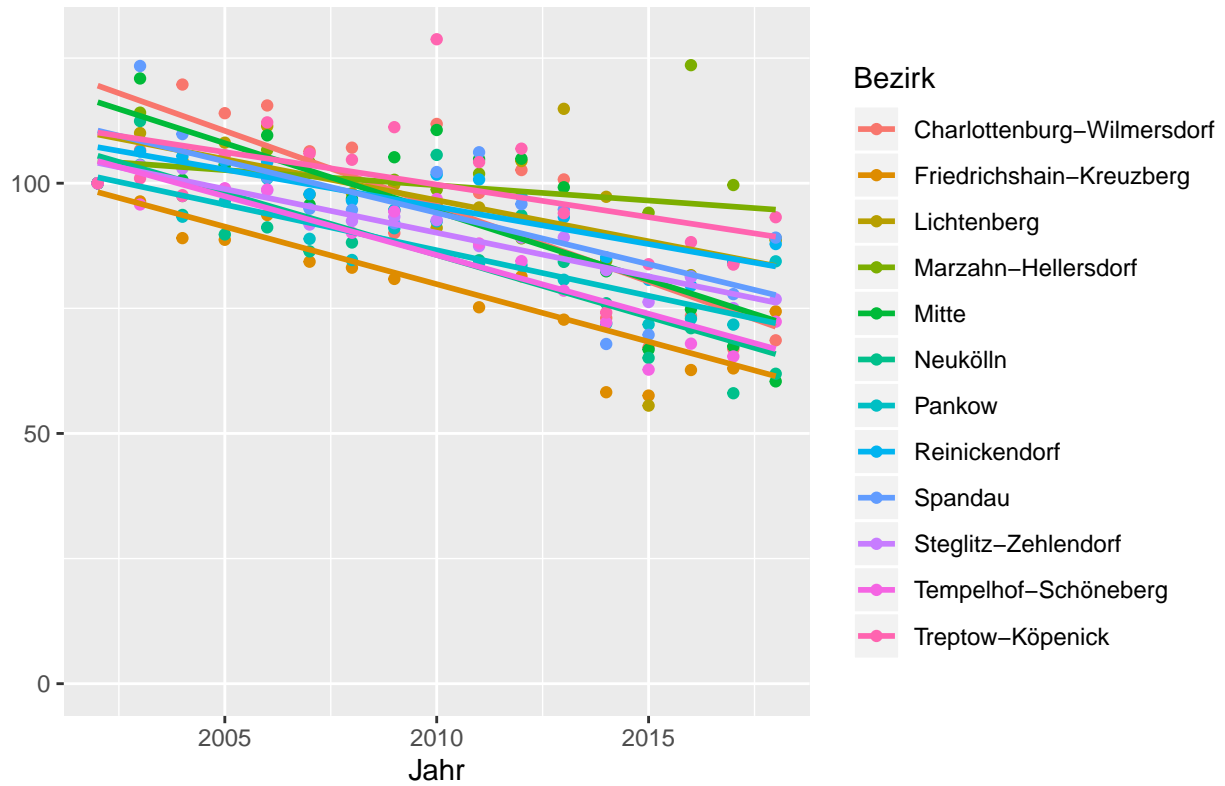


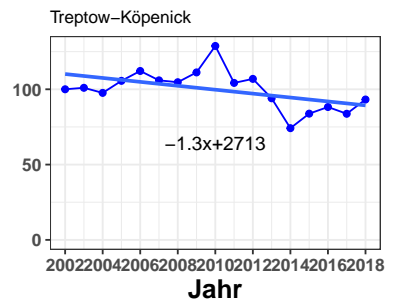
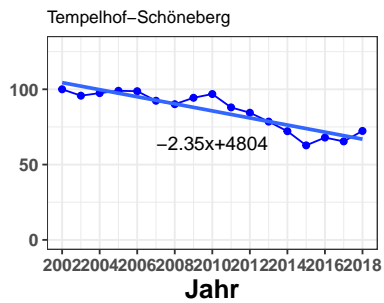
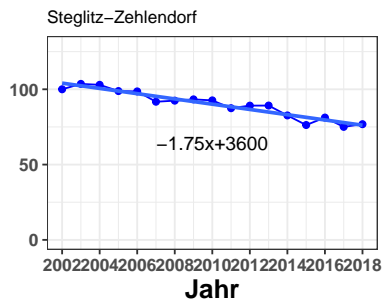
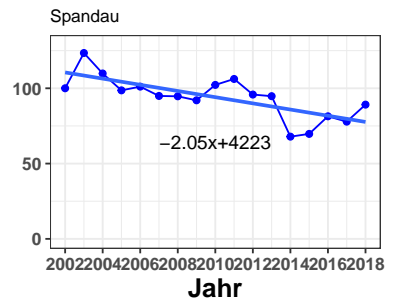
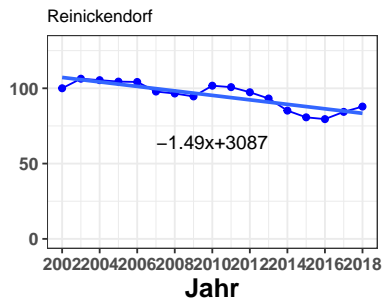
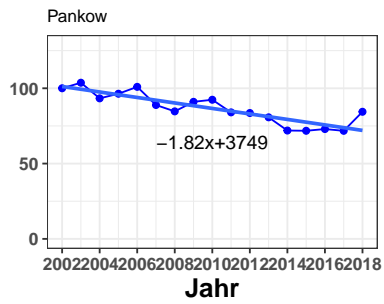
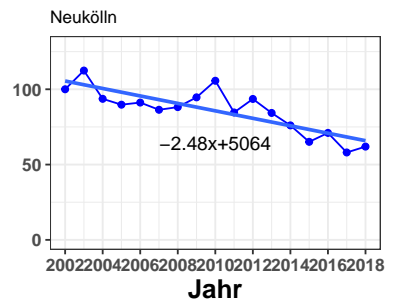
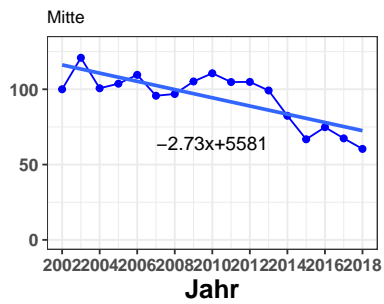
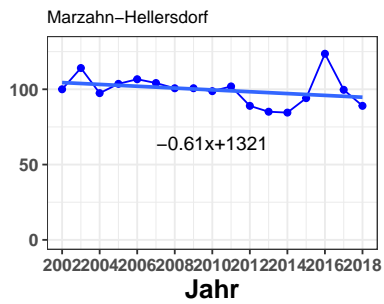
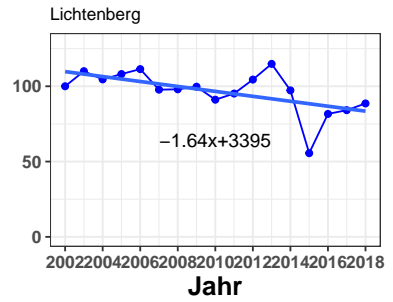
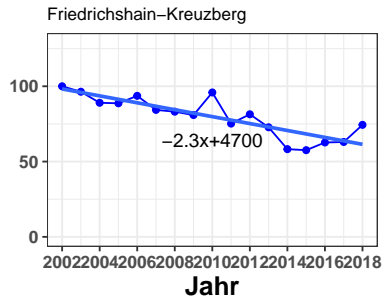
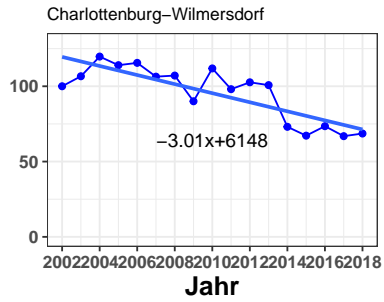
| Berlin, alle Wohngebäude, Pro Kopf CO2 Emissionen (2002 Wert = 100) | |
|---|--------|
| Jahr | Wert |
| 2002 | 100 |
| 2003 | 107.03 |
| 2004 | 101.27 |
| 2005 | 100.54 |
| 2006 | 102.79 |
| 2007 | 94.82 |
| 2008 | 94.04 |
| 2009 | 94.6 |
| 2010 | 101.36 |
| 2011 | 92.9 |
| 2012 | 93.11 |
| 2013 | 89.18 |
| 2014 | 76.28 |
| 2015 | 70.34 |
| 2016 | 77.84 |
| 2017 | 72.9 |
| 2018 | 77.14 |

1.3.4. Stadtbezirke, MFH + 1-2 FH, CO2-Emission pro Einwohner aus der Beheizung von Wohnraum, 2002 - 2018, 2002 = 100

One Graph: CO2 Emissions with 2002 value = 100 for each Bezirk. All 12 lines on the same plot.

Pro Kopf CO₂ Emissionen in Stadtbezirken, alle Wohngebäude, 2002 Wert =

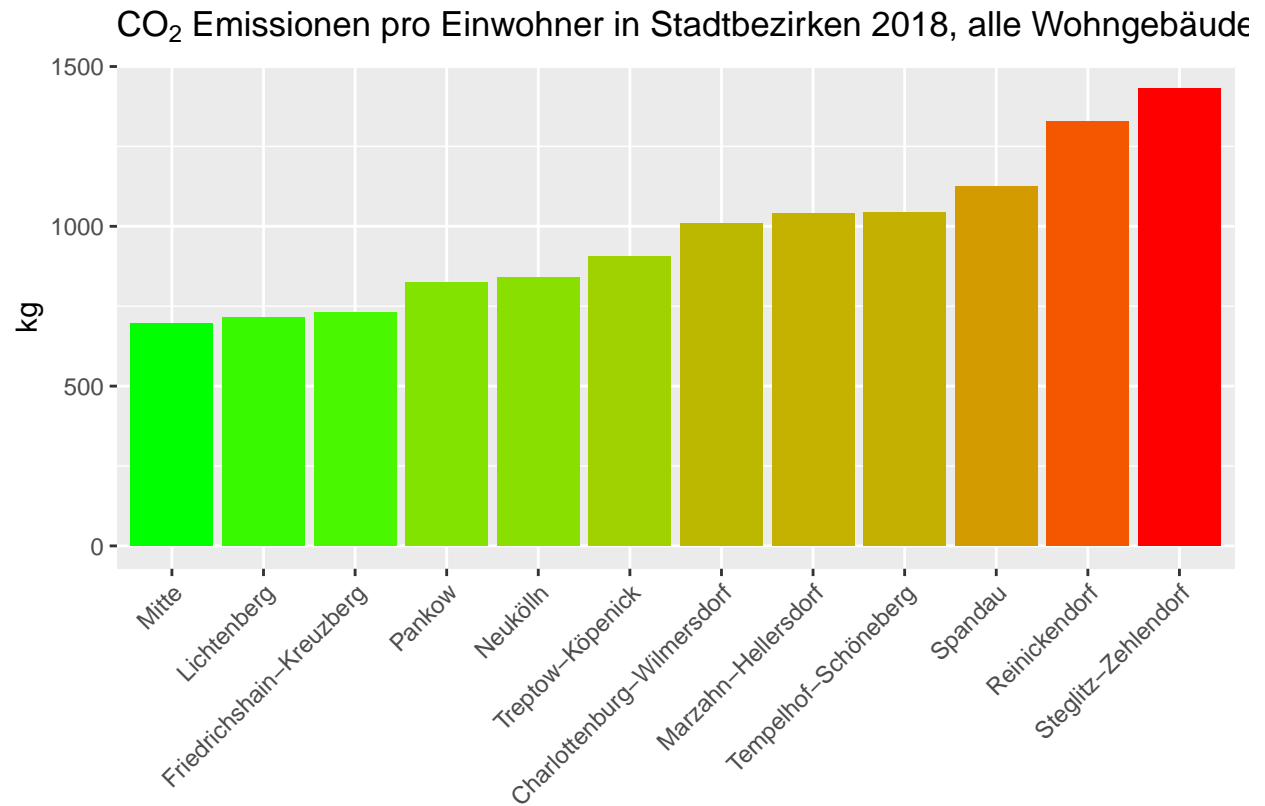




| Berlin, alle Wohngebäude, Pro Kopf CO2 Emissionen nach Bezirken, 2002 Wert = 100 | | | | | | |
|--|-------------------------------|------------------------------|-------------|-------------------------|--------|----------|
| Jahr | Charlottenburg- Wilmerdorf | Friedrichshain- Kreuzberg | Lichtenberg | Marzahn- Hellersdorf | Mitte | Neukölln |
| 2002 | 100 | 100 | 100 | 100 | 100 | 100 |
| 2003 | 106.64 | 96.36 | 110.02 | 114.1 | 120.93 | 112.42 |
| 2004 | 119.72 | 89.03 | 104.55 | 97.43 | 100.66 | 93.66 |
| 2005 | 113.99 | 88.7 | 108.1 | 103.6 | 103.71 | 89.76 |
| 2006 | 115.54 | 93.64 | 111.4 | 106.66 | 109.56 | 91.18 |
| 2007 | 106.38 | 84.32 | 97.74 | 104.15 | 95.7 | 86.38 |
| 2008 | 107.1 | 83.12 | 97.99 | 100.67 | 96.88 | 88.15 |
| 2009 | 90.04 | 80.88 | 99.73 | 100.69 | 105.19 | 94.63 |
| 2010 | 111.84 | 95.88 | 91.08 | 98.74 | 110.63 | 105.66 |
| 2011 | 98.06 | 75.21 | 95.15 | 101.89 | 104.8 | 84.61 |
| 2012 | 102.63 | 81.39 | 104.43 | 88.98 | 104.89 | 93.56 |
| 2013 | 100.75 | 72.74 | 114.87 | 85.09 | 99.19 | 84.28 |
| 2014 | 73.07 | 58.24 | 97.29 | 84.5 | 82.4 | 76.01 |
| 2015 | 67.2 | 57.57 | 55.56 | 94.11 | 66.78 | 65.1 |
| 2016 | 73.5 | 62.67 | 81.63 | 123.59 | 74.83 | 71.03 |
| 2017 | 66.86 | 62.99 | 84.13 | 99.63 | 67.39 | 58.03 |
| 2018 | 68.61 | 74.38 | 88.59 | 88.99 | 60.4 | 61.93 |

| Berlin, alle Wohngebäude, Pro Kopf CO2 Emissionen nach Bezirken, 2002 Wert = 100 | | | | | | |
|--|--------|---------------|---------|-------------------------|--------------------------|----------------------|
| Jahr | Pankow | Reinickendorf | Spandau | Steglitz– Zehlendorf | Tempelhof– Schöneberg | Treptow– Köpenick |
| 2002 | 100 | 100 | 100 | 100 | 100 | 100 |
| 2003 | 103.68 | 106.35 | 123.42 | 103.58 | 95.75 | 100.98 |
| 2004 | 93.31 | 105.39 | 109.81 | 102.96 | 97.45 | 97.6 |
| 2005 | 96.38 | 104.43 | 98.62 | 98.82 | 99 | 105.6 |
| 2006 | 100.94 | 104.19 | 101.1 | 98.58 | 98.72 | 112.16 |
| 2007 | 88.89 | 97.82 | 94.9 | 91.74 | 92.38 | 105.93 |
| 2008 | 84.66 | 96.52 | 94.67 | 92.45 | 90.09 | 104.69 |
| 2009 | 91 | 94.59 | 92.01 | 93.3 | 94.36 | 111.2 |
| 2010 | 92.38 | 101.72 | 102.24 | 92.63 | 96.84 | 128.77 |
| 2011 | 84 | 100.75 | 106.18 | 87.43 | 87.96 | 104.22 |
| 2012 | 83.58 | 97.37 | 95.83 | 89.14 | 84.43 | 106.9 |
| 2013 | 80.71 | 93.21 | 94.76 | 89.19 | 78.52 | 94.01 |
| 2014 | 71.94 | 85.17 | 67.88 | 82.63 | 72.15 | 74.17 |
| 2015 | 71.78 | 80.7 | 69.71 | 76.26 | 62.75 | 83.82 |
| 2016 | 72.93 | 79.51 | 81.39 | 81.21 | 67.94 | 88.23 |
| 2017 | 71.75 | 84.33 | 77.83 | 75.04 | 65.39 | 83.74 |
| 2018 | 84.39 | 87.85 | 89.13 | 76.81 | 72.33 | 93.2 |

1.3.5 Stadtbezirke, MFH + 1-2 FH, co2-Emission aus der Beheizung von Wohnraum pro Einwohner, Niveau im Jahr 2018 in t/Einwohner

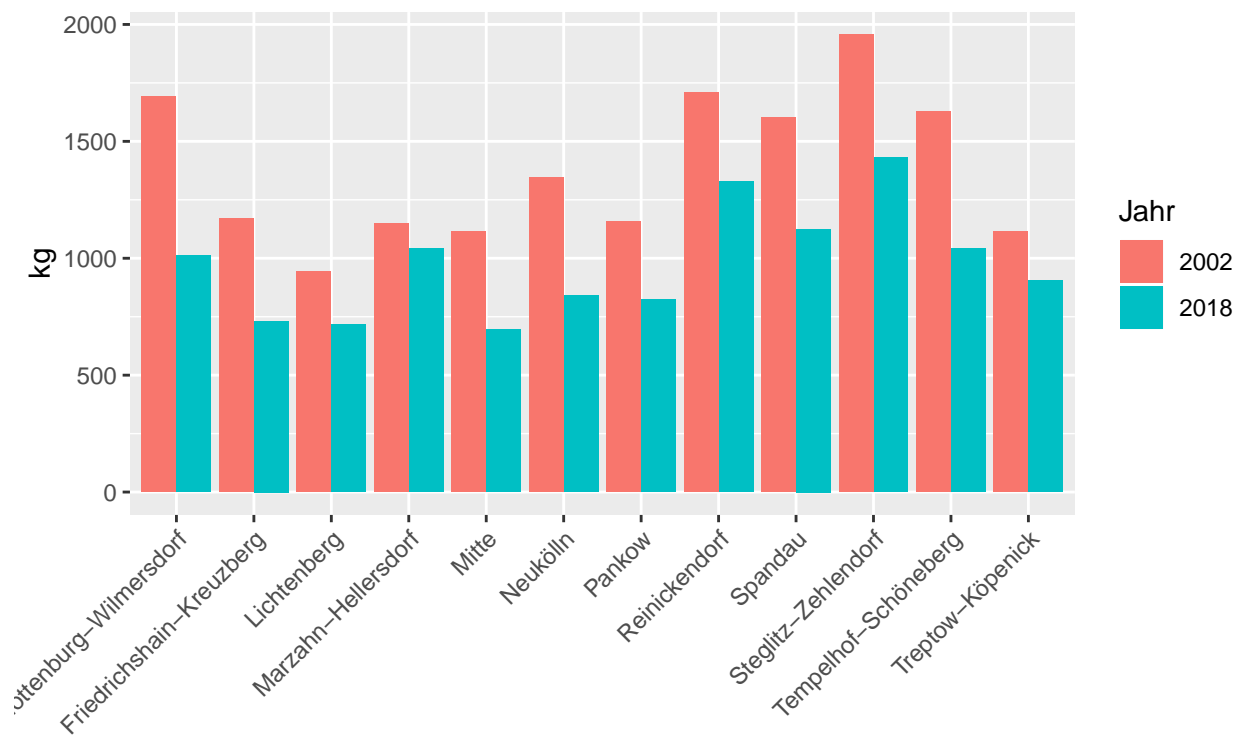


| Bezirke, alle Wohngebäude, pro Kopf CO2 Emissionen (2018) | |
|--|-----------|
| Bezirk | kg |
| Charlottenburg–Wilmerdorf | 1009.97 |
| Friedrichshain–Kreuzberg | 731.64 |
| Lichtenberg | 716.44 |
| Marzahn–Hellersdorf | 1041.42 |
| Mitte | 695.05 |
| Neukölln | 840.67 |
| Pankow | 823.55 |
| Reinickendorf | 1327.86 |
| Spandau | 1124.90 |
| Steglitz–Zehlendorf | 1430.49 |
| Tempelhof–Schöneberg | 1042.36 |
| Treptow–Köpenick | 905.26 |

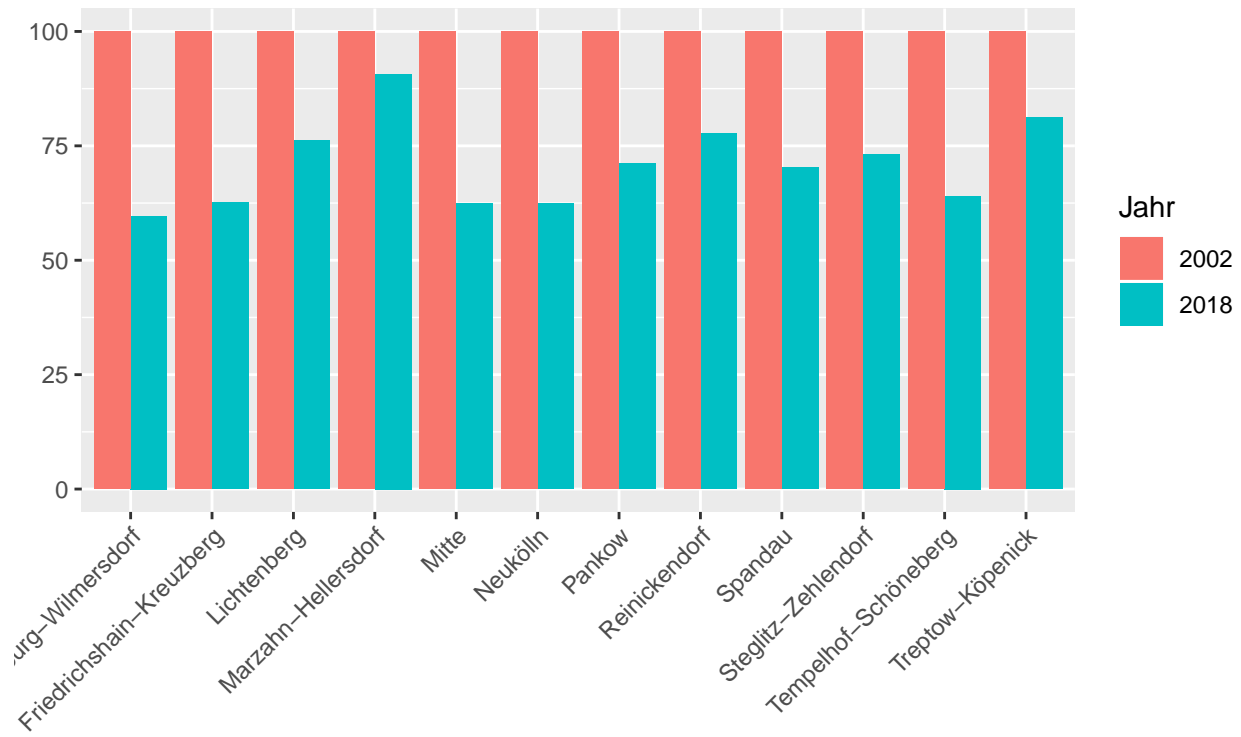
1.3.6 Stadtbezirke, MFH + 1-2 FH, CO₂-Emission aus der Beheizung von Wohnraum pro Einwohner, Veränderung 2002/2018 in Prozent

(Zwei Grafiken: absolute values and percentage values of change compared to 2002 and 2018 values as grouped bar charts.) Group barchart of only 2002 and 2018 values for each city district - either absolute values and percentage.

CO₂ Emissionen pro Einwohner, 2002 und 2018, alle Wohngebäude



pro Kopf CO₂ Emissionen 2018, 2002 Wert = 100



| Bezirke, Pro Kopf CO2 Emissionen, 2002 und 2018 Werte (kg) | | |
|---|-------------|-------------|
| Bezirk | 2002 | 2018 |
| Charlottenburg–Wilmerdorf | 1692.22 | 1009.97 |
| Friedrichshain–Kreuzberg | 1169.54 | 731.64 |
| Lichtenberg | 941.79 | 716.44 |
| Marzahn–Hellersdorf | 1148.29 | 1041.42 |
| Mitte | 1113.69 | 695.05 |
| Neukölln | 1346.55 | 840.67 |
| Pankow | 1156.86 | 823.55 |
| Reinickendorf | 1707.18 | 1327.86 |
| Spandau | 1600.97 | 1124.90 |
| Steglitz–Zehlendorf | 1955.38 | 1430.49 |
| Tempelhof–Schöneberg | 1627.78 | 1042.36 |
| Treptow–Köpenick | 1116.10 | 905.26 |

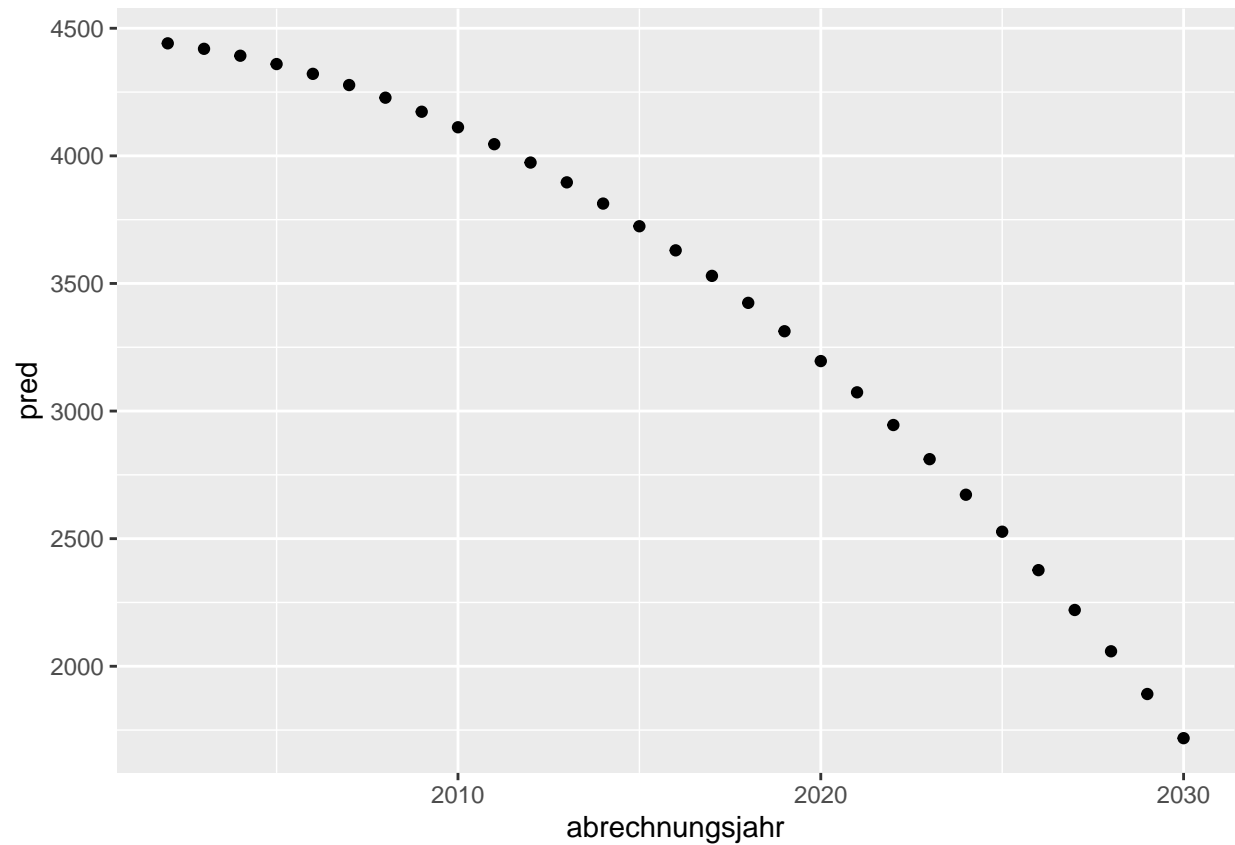
1.4 Prognose

1.4.1 Berlin, MFH + 1-2 FH, Prognose der CO₂-Emissionen aus Beheizung 2019-2030 in Mio. t (Trend Polynom 1. Grades)

[1] 0.6920473

1.4.2 Berlin, MFH + 1-2 FH, Prognose der CO₂-Emissionen aus Beheizung 2019-2030 in Mio. t (Trend Polynom 2. Grades)

[1] 0.7176956



| ## | abrechnungsjahr | pred |
|-------|-----------------|----------|
| ## 1 | 2002 | 4440.911 |
| ## 2 | 2003 | 4419.460 |
| ## 3 | 2004 | 4392.395 |
| ## 4 | 2005 | 4359.716 |
| ## 5 | 2006 | 4321.424 |
| ## 6 | 2007 | 4277.517 |
| ## 7 | 2008 | 4227.996 |
| ## 8 | 2009 | 4172.862 |
| ## 9 | 2010 | 4112.113 |
| ## 10 | 2011 | 4045.751 |
| ## 11 | 2012 | 3973.774 |
| ## 12 | 2013 | 3896.184 |
| ## 13 | 2014 | 3812.979 |
| ## 14 | 2015 | 3724.161 |
| ## 15 | 2016 | 3629.729 |
| ## 16 | 2017 | 3529.683 |
| ## 17 | 2018 | 3424.022 |
| ## 18 | 2019 | 3312.748 |
| ## 19 | 2020 | 3195.860 |
| ## 20 | 2021 | 3073.358 |
| ## 21 | 2022 | 2945.242 |
| ## 22 | 2023 | 2811.512 |
| ## 23 | 2024 | 2672.168 |
| ## 24 | 2025 | 2527.211 |
| ## 25 | 2026 | 2376.639 |

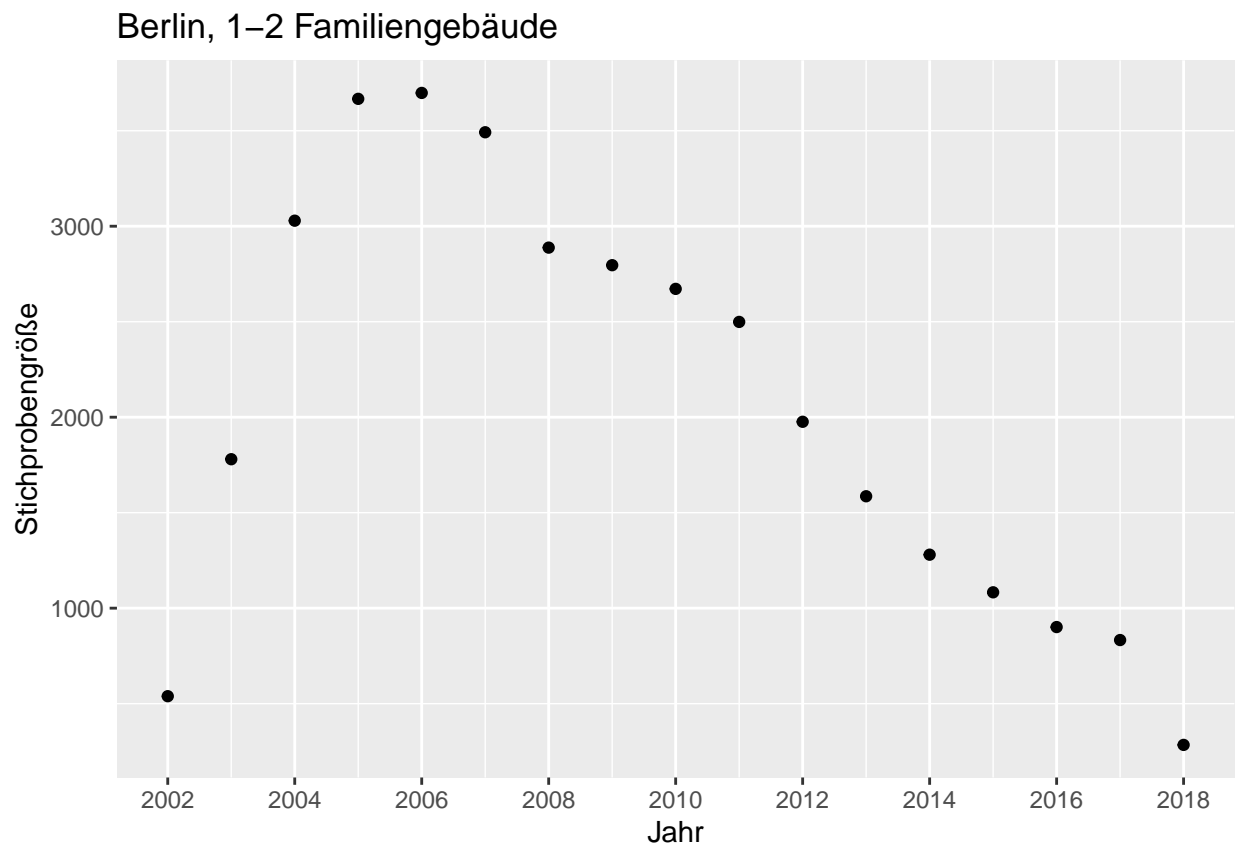
| | | |
|-------|------|----------|
| ## 26 | 2027 | 2220.453 |
| ## 27 | 2028 | 2058.654 |
| ## 28 | 2029 | 1891.240 |
| ## 29 | 2030 | 1718.212 |

1.5 Diskussion

2. Alle Stadtbezirke, CO₂-Emissionen aus Beheizung, 1-2 Familiengebäude

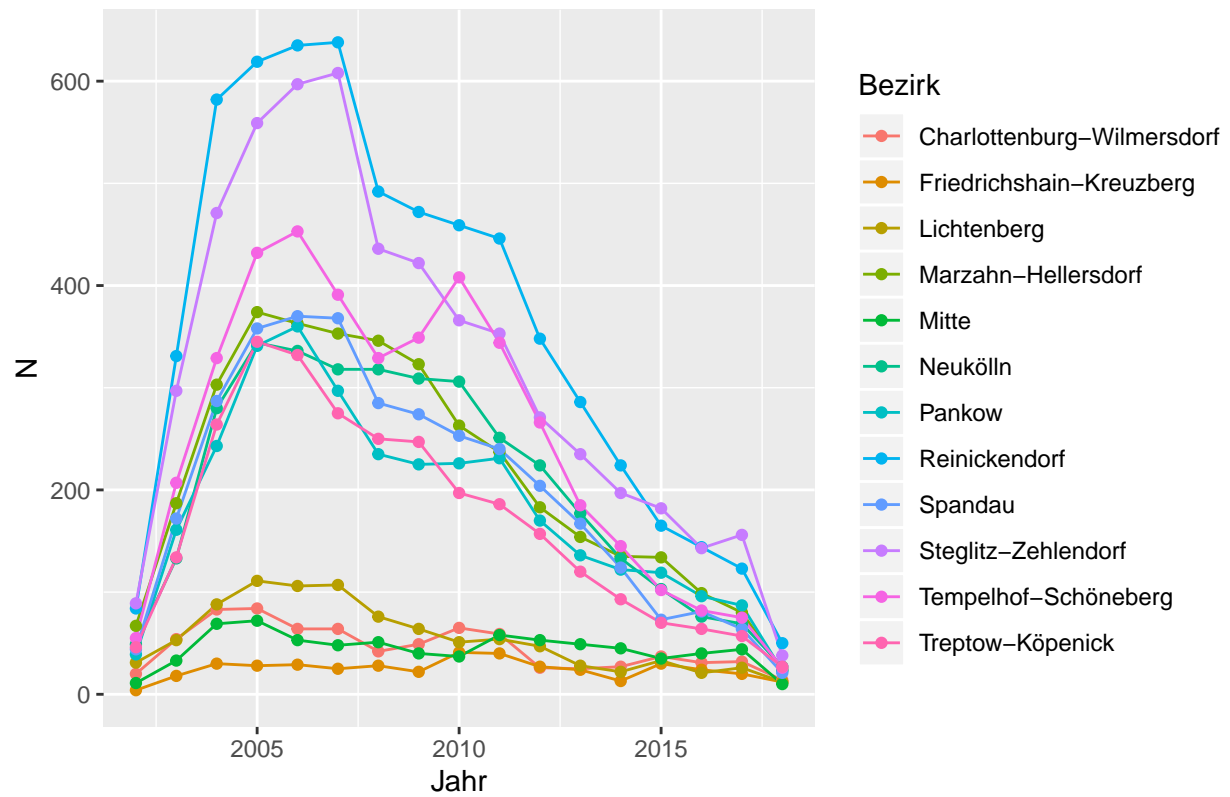
2.1 Absolute Zahlen

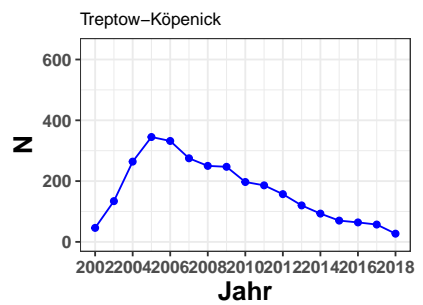
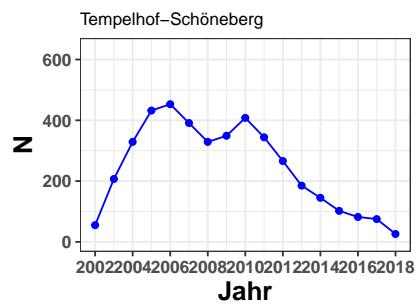
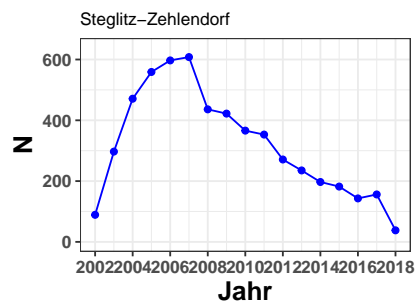
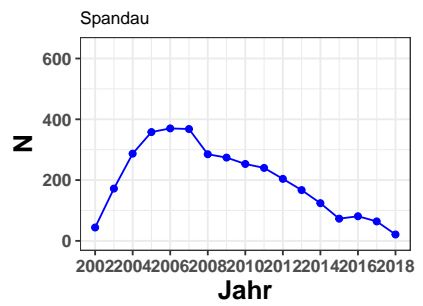
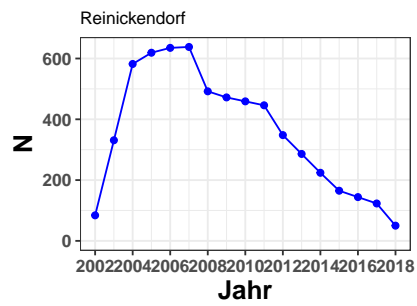
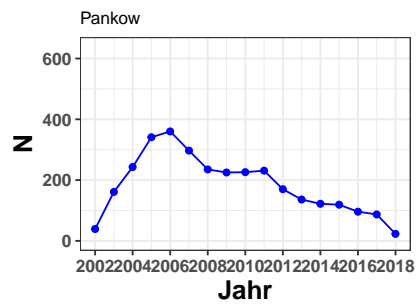
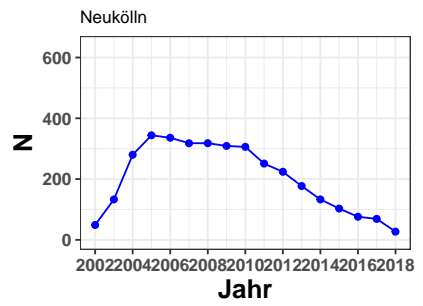
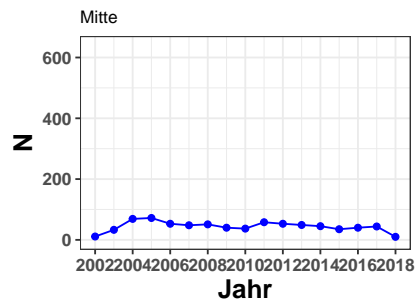
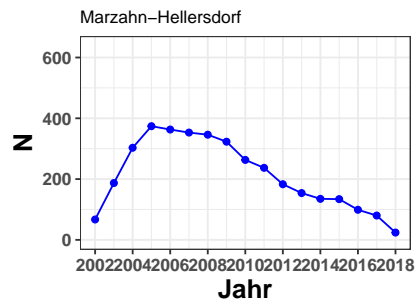
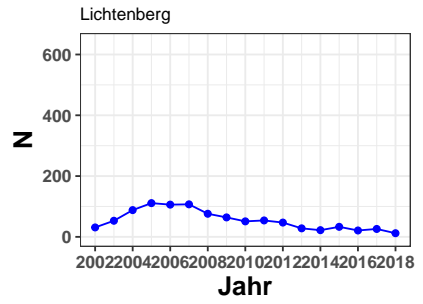
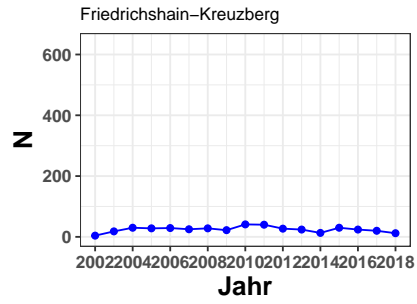
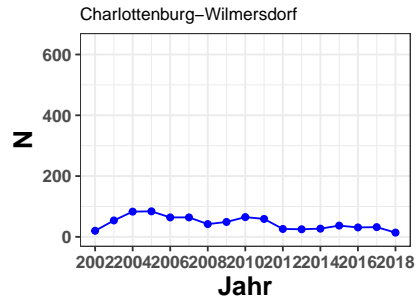
Sample Size



| Berlin, 1–2 Familiengebäude, Stichprobengröße | |
|--|-------|
| Jahr | N |
| 2002 | 539 |
| 2003 | 1780 |
| 2004 | 3029 |
| 2005 | 3667 |
| 2006 | 3698 |
| 2007 | 3492 |
| 2008 | 2888 |
| 2009 | 2796 |
| 2010 | 2672 |
| 2011 | 2499 |
| 2012 | 1976 |
| 2013 | 1586 |
| 2014 | 1280 |
| 2015 | 1083 |
| 2016 | 901 |
| 2017 | 833 |
| 2018 | 284 |
| Gesamt | 35003 |

Stichprobengröße, 1–2 Familiengebäude



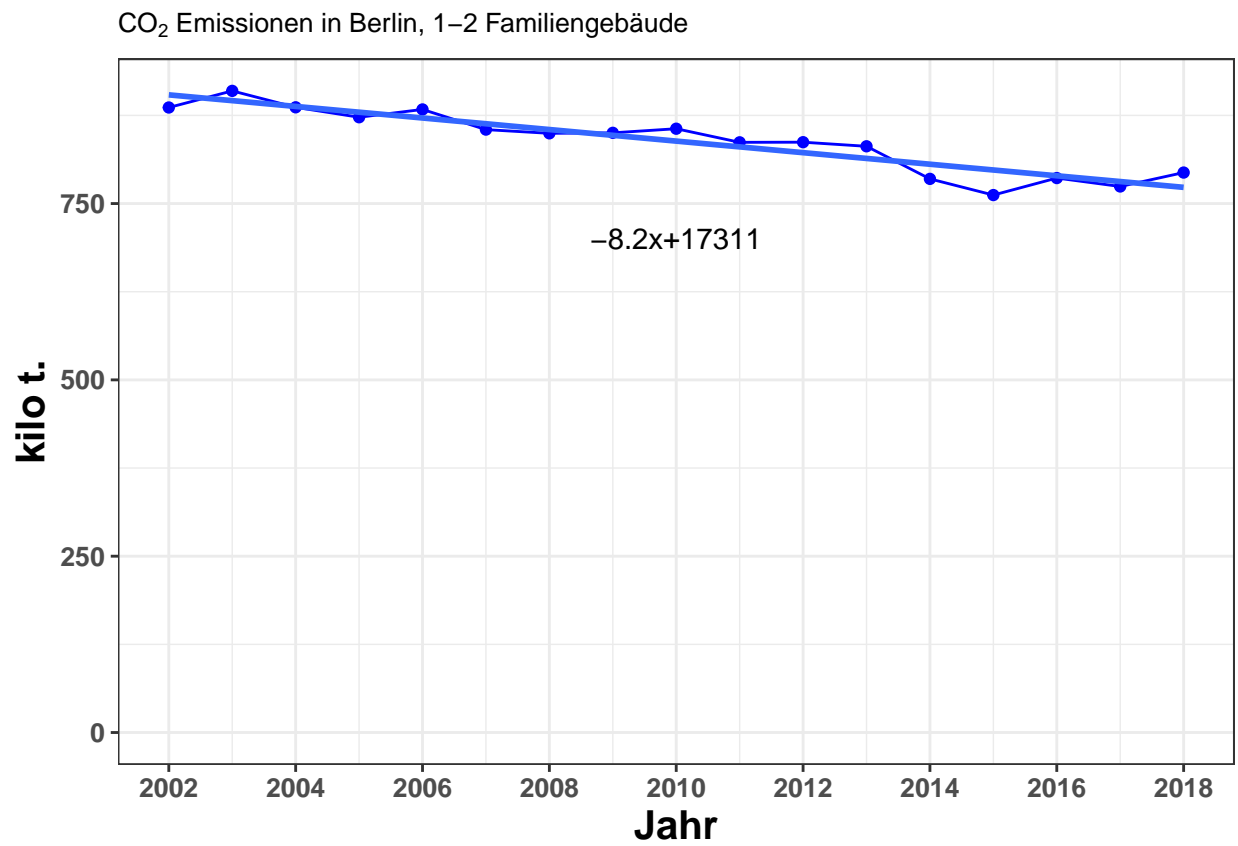


| Berlin, 1–2 Familiengebäude, Stichprobengröße nach Bezirken | | | | | | |
|---|-------------------------------|------------------------------|-------------|-------------------------|-------|----------|
| Jahr | Charlottenburg– Wilmerdorf | Friedrichshain– Kreuzberg | Lichtenberg | Marzahn– Hellersdorf | Mitte | Neukölln |
| 2002 | 20 | 4 | 31 | 67 | 11 | 49 |
| 2003 | 54 | 18 | 53 | 187 | 33 | 133 |
| 2004 | 83 | 30 | 88 | 303 | 69 | 280 |
| 2005 | 84 | 28 | 111 | 374 | 72 | 344 |
| 2006 | 64 | 29 | 106 | 363 | 53 | 336 |
| 2007 | 64 | 25 | 107 | 353 | 48 | 318 |
| 2008 | 42 | 28 | 76 | 346 | 51 | 318 |
| 2009 | 49 | 22 | 64 | 323 | 40 | 309 |
| 2010 | 65 | 41 | 51 | 263 | 37 | 306 |
| 2011 | 59 | 40 | 54 | 237 | 58 | 251 |
| 2012 | 26 | 27 | 47 | 183 | 53 | 224 |
| 2013 | 25 | 24 | 28 | 154 | 49 | 177 |
| 2014 | 27 | 13 | 22 | 135 | 45 | 133 |
| 2015 | 37 | 30 | 33 | 134 | 35 | 103 |
| 2016 | 31 | 24 | 21 | 99 | 40 | 76 |
| 2017 | 32 | 20 | 26 | 80 | 44 | 69 |
| 2018 | 14 | 12 | 12 | 24 | 10 | 27 |

| Berlin, 1–2 Familiengebäude, Stichprobengröße nach Bezirken | | | | | | |
|---|--------|---------------|---------|-------------------------|--------------------------|----------------------|
| Jahr | Pankow | Reinickendorf | Spandau | Steglitz– Zehlendorf | Tempelhof– Schöneberg | Treptow– Köpenick |
| 2002 | 39 | 84 | 44 | 89 | 55 | 46 |
| 2003 | 161 | 331 | 172 | 297 | 207 | 134 |
| 2004 | 243 | 582 | 287 | 471 | 329 | 264 |
| 2005 | 341 | 619 | 358 | 559 | 432 | 345 |
| 2006 | 360 | 635 | 370 | 597 | 453 | 332 |
| 2007 | 297 | 638 | 368 | 608 | 391 | 275 |
| 2008 | 235 | 492 | 285 | 436 | 329 | 250 |
| 2009 | 225 | 472 | 274 | 422 | 349 | 247 |
| 2010 | 226 | 459 | 253 | 366 | 408 | 197 |
| 2011 | 231 | 446 | 240 | 353 | 344 | 186 |
| 2012 | 170 | 348 | 204 | 271 | 266 | 157 |
| 2013 | 136 | 286 | 167 | 235 | 185 | 120 |
| 2014 | 122 | 224 | 124 | 197 | 145 | 93 |
| 2015 | 119 | 165 | 73 | 182 | 102 | 70 |
| 2016 | 96 | 144 | 81 | 143 | 82 | 64 |
| 2017 | 87 | 123 | 64 | 156 | 75 | 57 |
| 2018 | 23 | 50 | 21 | 38 | 26 | 27 |

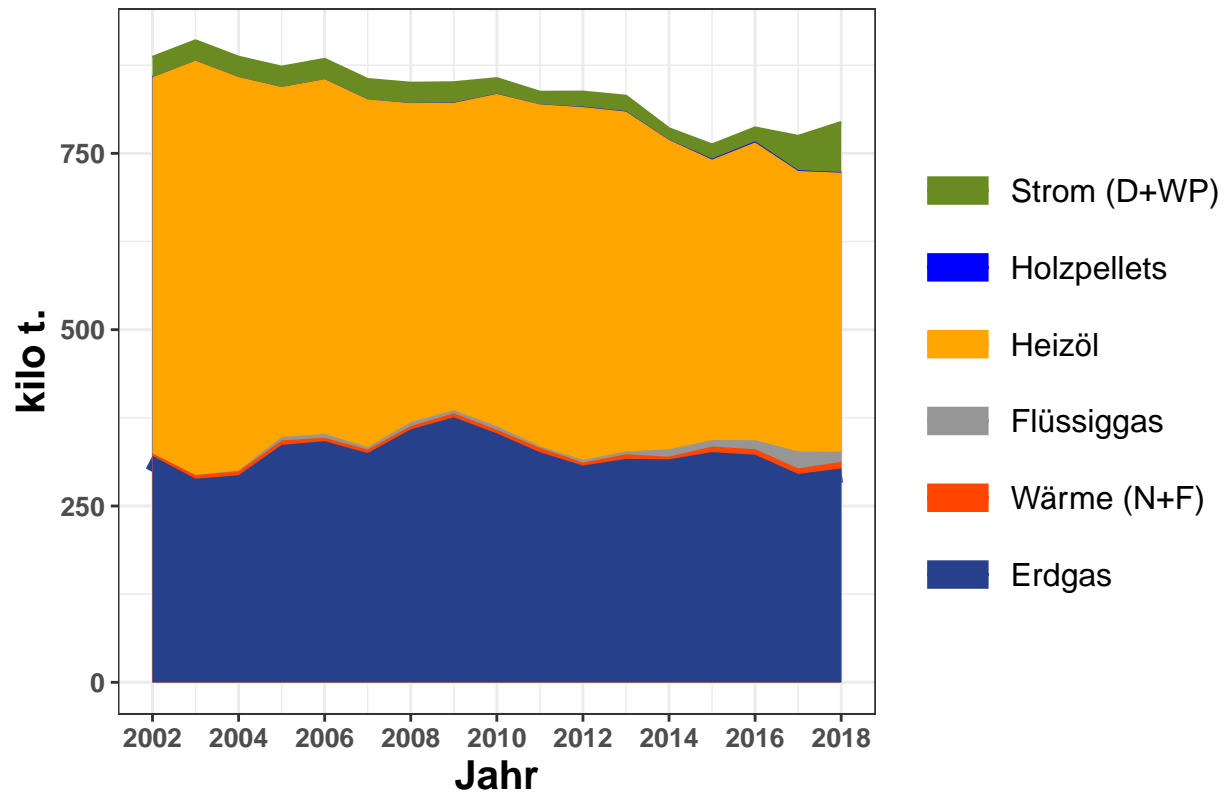
| Berlin, 1–2 Familiengebäude, Stichprobengröße nach Energieträgern | | | | | | | |
|---|--------|-------|------------|--------|-------------|-------|--------|
| Jahr | Erdgas | Wärme | Flüssiggas | Heizöl | Holzpellets | Strom | Gesamt |
| 2002 | 277 | 9 | 0 | 253 | 0 | 0 | 539 |
| 2003 | 766 | 35 | 0 | 979 | 0 | 0 | 1780 |
| 2004 | 1339 | 56 | 9 | 1625 | 0 | 0 | 3029 |
| 2005 | 1772 | 80 | 33 | 1782 | 0 | 0 | 3667 |
| 2006 | 1784 | 73 | 37 | 1803 | 0 | 1 | 3698 |
| 2007 | 1658 | 75 | 21 | 1738 | 0 | 0 | 3492 |
| 2008 | 1503 | 59 | 26 | 1296 | 2 | 2 | 2888 |
| 2009 | 1462 | 64 | 25 | 1228 | 5 | 12 | 2796 |
| 2010 | 1234 | 56 | 24 | 1272 | 8 | 78 | 2672 |
| 2011 | 1091 | 57 | 14 | 1266 | 7 | 64 | 2499 |
| 2012 | 854 | 35 | 17 | 1007 | 13 | 50 | 1976 |
| 2013 | 690 | 38 | 13 | 796 | 7 | 42 | 1586 |
| 2014 | 606 | 34 | 21 | 586 | 4 | 29 | 1280 |
| 2015 | 539 | 46 | 19 | 432 | 11 | 36 | 1083 |
| 2016 | 433 | 37 | 23 | 363 | 13 | 32 | 901 |
| 2017 | 363 | 40 | 28 | 325 | 10 | 67 | 833 |
| 2018 | 123 | 14 | 8 | 106 | 3 | 30 | 284 |

2.1.1 Berlin, 1-2 Familiengebäude, co2-Emission aus der Beheizung von Wohnraum 2002-2018
in 1.000 t



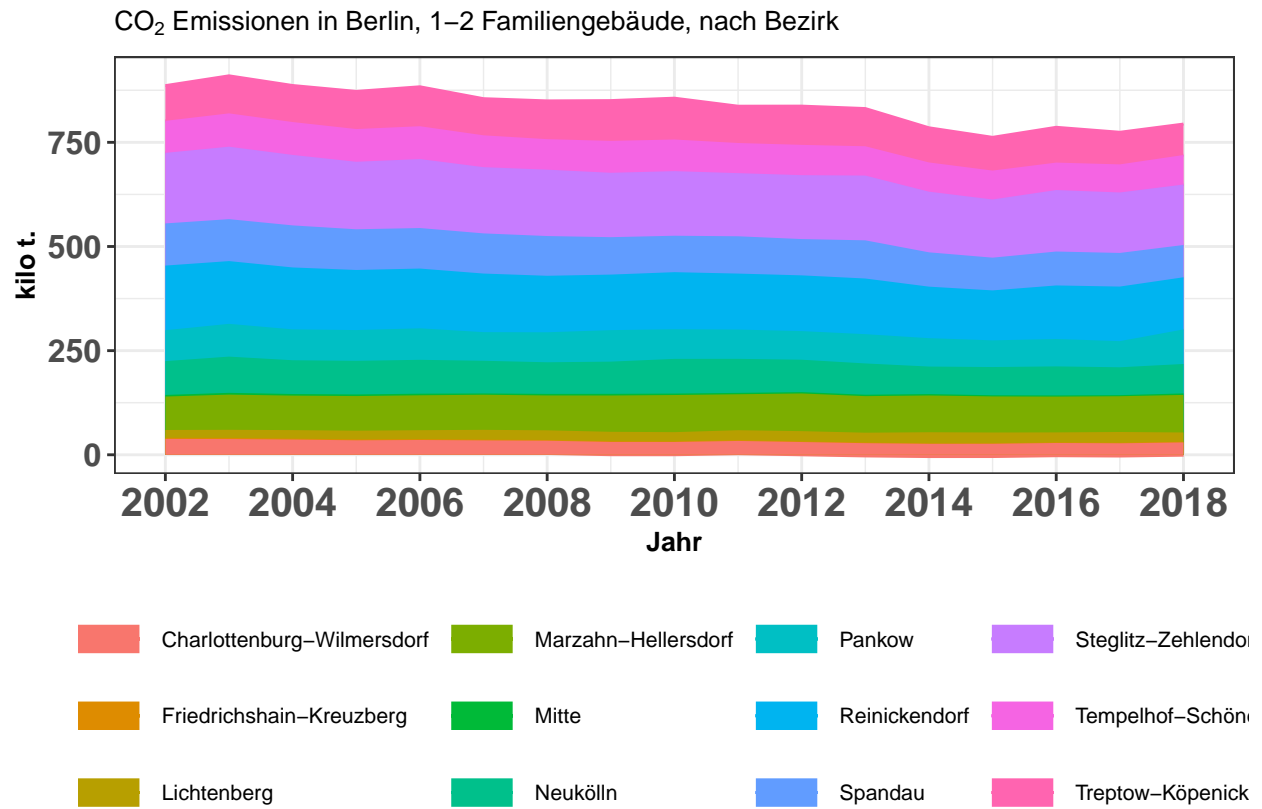
| Berlin 1 – 2 Familiengebäude CO ₂ Emissionen : No commas No newlines. | |
|--|----------------|
| Jahr | kilo t. |
| 2002 | 886.2 |
| 2003 | 909.76 |
| 2004 | 886.47 |
| 2005 | 872.38 |
| 2006 | 883.45 |
| 2007 | 854.86 |
| 2008 | 849.59 |
| 2009 | 850.29 |
| 2010 | 856.12 |
| 2011 | 836.84 |
| 2012 | 837.01 |
| 2013 | 831.19 |
| 2014 | 784.99 |
| 2015 | 762.06 |
| 2016 | 786.19 |
| 2017 | 774.22 |
| 2018 | 793.95 |

CO₂ Emissionen in Berlin, 1–2 Familiengebäude, nach Energiträger



| Berlin, 1–2 Familiengebäude, CO2 Emissionen nach Energieträgern (kilo t.) | | | | | | | |
|---|--------|-------|------------|--------|-------------|-------|--------|
| Jahr | Erdgas | Wärme | Flüssiggas | Heizöl | Holzpellets | Strom | Gesamt |
| 2002 | 320.99 | 3.54 | 0 | 533.47 | 0 | 28.2 | 886.2 |
| 2003 | 288.71 | 5.13 | 0 | 587.72 | 0 | 28.2 | 909.76 |
| 2004 | 293.61 | 5.56 | 1.29 | 557.81 | 0 | 28.2 | 886.47 |
| 2005 | 336.64 | 6.33 | 4.77 | 496.44 | 0 | 28.2 | 872.38 |
| 2006 | 341.93 | 4.81 | 5.42 | 503.09 | 0 | 28.2 | 883.45 |
| 2007 | 325.04 | 5.03 | 3.48 | 493.12 | 0 | 28.2 | 854.86 |
| 2008 | 358.64 | 4.56 | 5.64 | 452.45 | 0.11 | 28.2 | 849.59 |
| 2009 | 375.84 | 5.71 | 4.27 | 435.89 | 0.38 | 28.2 | 850.29 |
| 2010 | 352.88 | 5.23 | 5.04 | 471.2 | 0.29 | 21.48 | 856.12 |
| 2011 | 326.25 | 6.16 | 2.31 | 484.79 | 0.09 | 17.24 | 836.84 |
| 2012 | 307.33 | 4.14 | 3.78 | 500.42 | 0.63 | 20.71 | 837.01 |
| 2013 | 316.69 | 6.66 | 3.91 | 482.07 | 0.55 | 21.31 | 831.19 |
| 2014 | 316.16 | 3.76 | 10.43 | 438.78 | 0.33 | 15.52 | 784.99 |
| 2015 | 326.37 | 7.9 | 9.24 | 397.71 | 1.18 | 19.66 | 762.06 |
| 2016 | 322.72 | 7.83 | 12.77 | 422.25 | 1.45 | 19.18 | 786.19 |
| 2017 | 295.51 | 7.8 | 24.14 | 397.59 | 1.08 | 48.11 | 774.22 |
| 2018 | 303.19 | 9.38 | 14.27 | 395.8 | 0.76 | 70.55 | 793.95 |

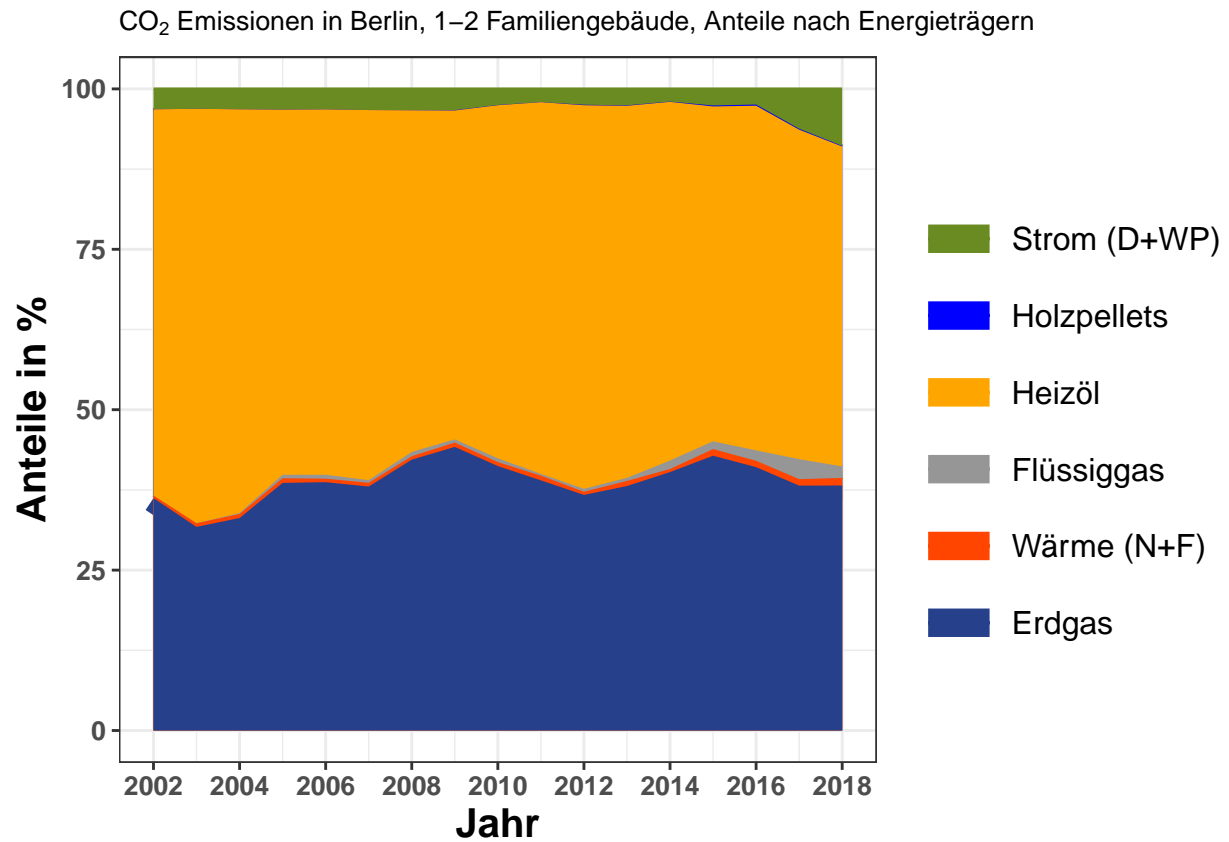
**2.1.2 Stadtbezirke, 1-2 Familiengebäude, co2-emissionen aus der Beheizung von Wohnraum
2002-2018 summiert in 1.000 t**



| Berlin, 1–2 Familiengebäude, CO2 Emissionen nach Bezirken (kilo t.) | | | | | | |
|---|-------------------------------|------------------------------|-------------|-------------------------|-------|----------|
| Jahr | Charlottenburg- Wilmerdorf | Friedrichshain- Kreuzberg | Lichtenberg | Marzahn- Hellersdorf | Mitte | Neukölln |
| 2002 | 38.1 | 2.64 | 18.81 | 80.29 | 3.84 | 81.15 |
| 2003 | 37.8 | 2.76 | 19.43 | 84.47 | 4.18 | 87 |
| 2004 | 36.56 | 2.32 | 20.41 | 82.76 | 3.87 | 81.04 |
| 2005 | 34.81 | 2.17 | 20.93 | 83.03 | 3.89 | 80.69 |
| 2006 | 35.52 | 2.2 | 21.42 | 83.68 | 3.83 | 81.31 |
| 2007 | 34.62 | 1.8 | 23.54 | 84.23 | 3.06 | 78.39 |
| 2008 | 33.82 | 1.74 | 23.23 | 83.67 | 3.7 | 75.9 |
| 2009 | 30.82 | 1.58 | 22.82 | 87.07 | 3.99 | 77.36 |
| 2010 | 30.76 | 1.3 | 22.28 | 89.13 | 3.48 | 83.22 |
| 2011 | 33.24 | 1.89 | 23.9 | 86.27 | 3.27 | 81.69 |
| 2012 | 30.62 | 1.38 | 24.82 | 90.45 | 3.18 | 77.75 |
| 2013 | 27.85 | 1.56 | 23.71 | 87.65 | 3.4 | 75.07 |
| 2014 | 26.36 | 0.89 | 26.93 | 88.18 | 3.38 | 66 |
| 2015 | 26.4 | 1.09 | 26.08 | 86.56 | 2.79 | 67.7 |
| 2016 | 28.38 | 1.28 | 24.14 | 85.85 | 2.85 | 69.64 |
| 2017 | 27.64 | 1.22 | 25.92 | 85.78 | 2.68 | 66.8 |
| 2018 | 29.69 | 1.63 | 22.28 | 90.1 | 3.6 | 70.69 |

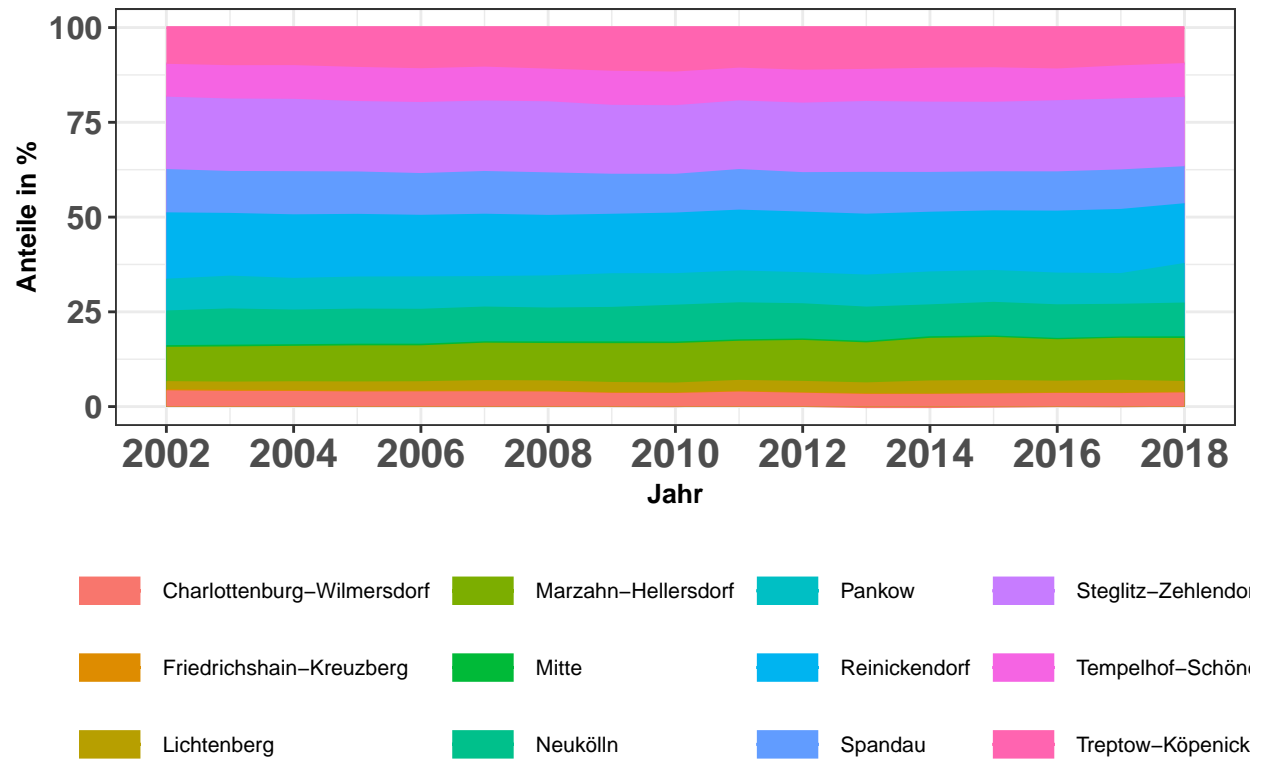
| Berlin, 1–2 Familiengebäude, CO2 Emissionen nach Bezirken (kilo t.) | | | | | | |
|---|--------|---------------|---------|-------------------------|--------------------------|----------------------|
| Jahr | Pankow | Reinickendorf | Spandau | Steglitz– Zehlendorf | Tempelhof– Schöneberg | Treptow– Köpenick |
| 2002 | 74.18 | 155.14 | 101.21 | 169.37 | 76.75 | 84.73 |
| 2003 | 78.64 | 150.6 | 100.72 | 173.88 | 80.01 | 90.27 |
| 2004 | 74.1 | 148.66 | 100.88 | 169.21 | 78.91 | 87.77 |
| 2005 | 73.81 | 144.24 | 97.68 | 162.06 | 78.52 | 90.56 |
| 2006 | 75.59 | 143.43 | 97.31 | 165.55 | 78.8 | 94.81 |
| 2007 | 68.77 | 140.61 | 96.41 | 159 | 76.38 | 88.07 |
| 2008 | 72 | 135.6 | 95.4 | 159.31 | 73.2 | 92.03 |
| 2009 | 75.55 | 133.35 | 89.78 | 154.58 | 76.52 | 96.87 |
| 2010 | 71.2 | 136.96 | 87.44 | 155.05 | 75.96 | 99.35 |
| 2011 | 70.36 | 134.33 | 89.5 | 151.59 | 72.35 | 88.44 |
| 2012 | 68.67 | 133.82 | 87.06 | 153.47 | 72.66 | 93.14 |
| 2013 | 70.26 | 133.58 | 91.68 | 155.48 | 70.33 | 90.62 |
| 2014 | 68.17 | 123.66 | 82.36 | 145.61 | 70.16 | 83.27 |
| 2015 | 64.08 | 119.86 | 78.59 | 139.69 | 69.37 | 79.86 |
| 2016 | 65.76 | 128.56 | 81.42 | 147.58 | 65.83 | 84.88 |
| 2017 | 62.71 | 131.01 | 80.73 | 145.17 | 67.41 | 77.15 |
| 2018 | 82.91 | 125.13 | 77.53 | 145.2 | 70.79 | 74.42 |

2.1.3 Stadtbezirke, 1-2 Familiengebäude, co2-emissionen aus der Beheizung von Wohnraum 2002-2018 in Prozent



| Berlin, 1–2 Familiengebäude, CO2 Emissionen, Anteile nach Energieträgern (%) | | | | | | |
|--|--------|-------|------------|--------|-------------|-------|
| Jahr | Erdgas | Wärme | Flüssiggas | Heizöl | Holzpellets | Strom |
| 2002 | 36.22 | 0.4 | 0 | 60.2 | 0 | 3.18 |
| 2003 | 31.73 | 0.56 | 0 | 64.6 | 0 | 3.1 |
| 2004 | 33.12 | 0.63 | 0.15 | 62.92 | 0 | 3.18 |
| 2005 | 38.59 | 0.73 | 0.55 | 56.91 | 0 | 3.23 |
| 2006 | 38.7 | 0.54 | 0.61 | 56.95 | 0 | 3.19 |
| 2007 | 38.02 | 0.59 | 0.41 | 57.68 | 0 | 3.3 |
| 2008 | 42.21 | 0.54 | 0.66 | 53.26 | 0.01 | 3.32 |
| 2009 | 44.2 | 0.67 | 0.5 | 51.26 | 0.05 | 3.32 |
| 2010 | 41.22 | 0.61 | 0.59 | 55.04 | 0.03 | 2.51 |
| 2011 | 38.99 | 0.74 | 0.28 | 57.93 | 0.01 | 2.06 |
| 2012 | 36.72 | 0.49 | 0.45 | 59.79 | 0.07 | 2.47 |
| 2013 | 38.1 | 0.8 | 0.47 | 58 | 0.07 | 2.56 |
| 2014 | 40.28 | 0.48 | 1.33 | 55.9 | 0.04 | 1.98 |
| 2015 | 42.83 | 1.04 | 1.21 | 52.19 | 0.15 | 2.58 |
| 2016 | 41.05 | 1 | 1.62 | 53.71 | 0.18 | 2.44 |
| 2017 | 38.17 | 1.01 | 3.12 | 51.35 | 0.14 | 6.21 |
| 2018 | 38.19 | 1.18 | 1.8 | 49.85 | 0.1 | 8.89 |

CO₂ Emissionen in Berlin, 1–2 Familiengebäude, Anteile nach Bezirken

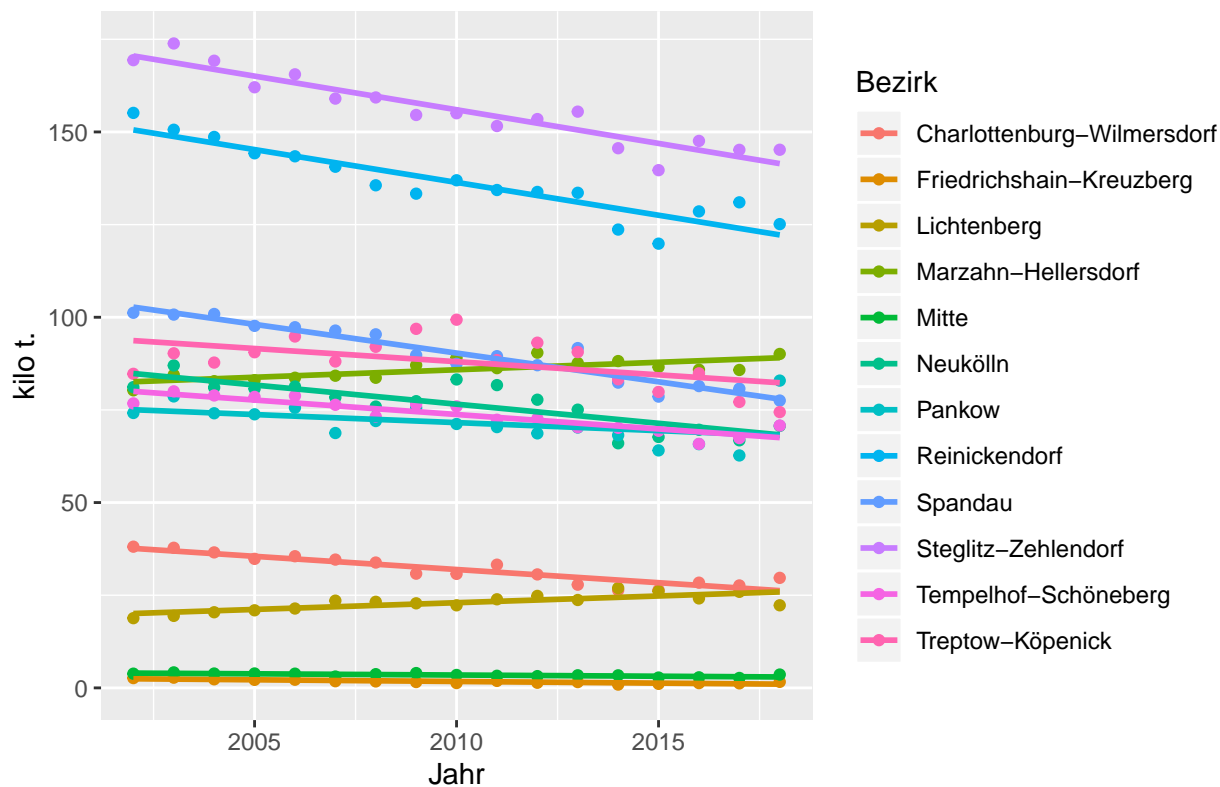


| Berlin, 1–2 Familiengebäude, CO2 Emissionen, Anteile nach Bezirken (%) | | | | | | |
|--|-------------------------------|------------------------------|-------------|-------------------------|-------|----------|
| Jahr | Charlottenburg- Wilmerdorf | Friedrichshain- Kreuzberg | Lichtenberg | Marzahn- Hellersdorf | Mitte | Neukölln |
| 2002 | 4.3 | 0.3 | 2.12 | 9.06 | 0.43 | 9.16 |
| 2003 | 4.16 | 0.3 | 2.14 | 9.28 | 0.46 | 9.56 |
| 2004 | 4.12 | 0.26 | 2.3 | 9.34 | 0.44 | 9.14 |
| 2005 | 3.99 | 0.25 | 2.4 | 9.52 | 0.45 | 9.25 |
| 2006 | 4.02 | 0.25 | 2.42 | 9.47 | 0.43 | 9.2 |
| 2007 | 4.05 | 0.21 | 2.75 | 9.85 | 0.36 | 9.17 |
| 2008 | 3.98 | 0.2 | 2.73 | 9.85 | 0.44 | 8.93 |
| 2009 | 3.62 | 0.19 | 2.68 | 10.24 | 0.47 | 9.1 |
| 2010 | 3.59 | 0.15 | 2.6 | 10.41 | 0.41 | 9.72 |
| 2011 | 3.97 | 0.23 | 2.86 | 10.31 | 0.39 | 9.76 |
| 2012 | 3.66 | 0.17 | 2.96 | 10.81 | 0.38 | 9.29 |
| 2013 | 3.35 | 0.19 | 2.85 | 10.55 | 0.41 | 9.03 |
| 2014 | 3.36 | 0.11 | 3.43 | 11.23 | 0.43 | 8.41 |
| 2015 | 3.46 | 0.14 | 3.42 | 11.36 | 0.37 | 8.88 |
| 2016 | 3.61 | 0.16 | 3.07 | 10.92 | 0.36 | 8.86 |
| 2017 | 3.57 | 0.16 | 3.35 | 11.08 | 0.35 | 8.63 |
| 2018 | 3.74 | 0.21 | 2.81 | 11.35 | 0.45 | 8.9 |

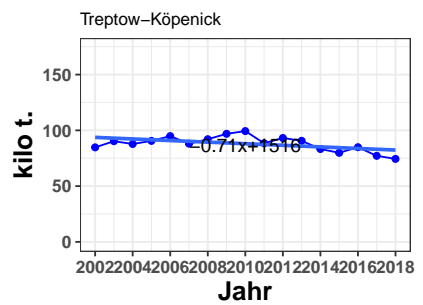
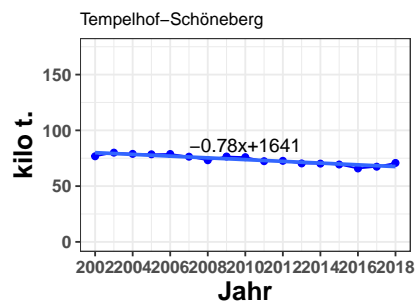
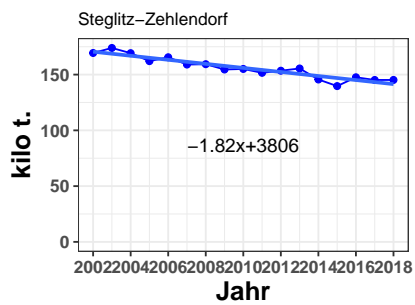
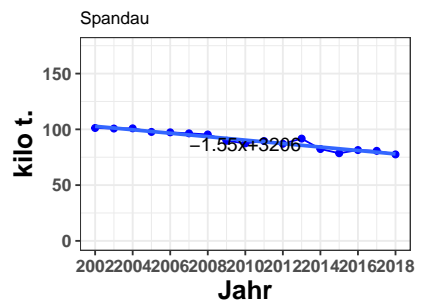
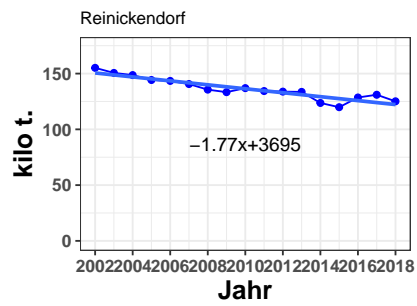
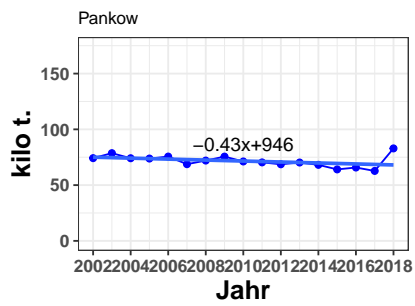
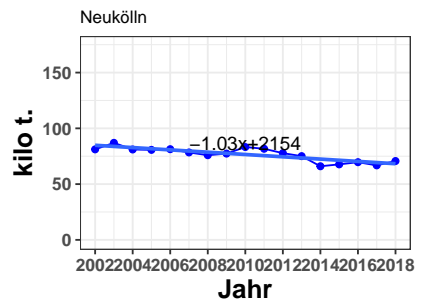
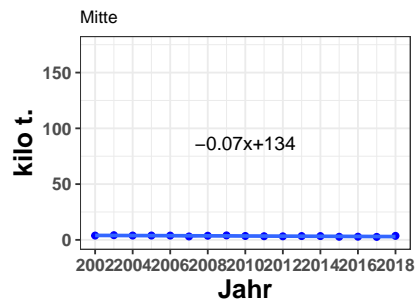
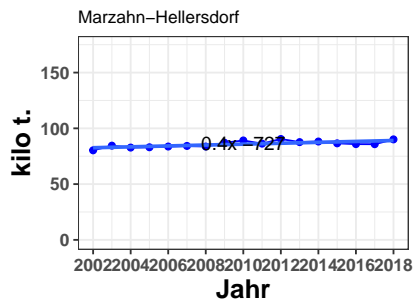
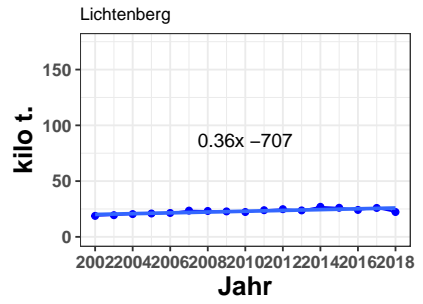
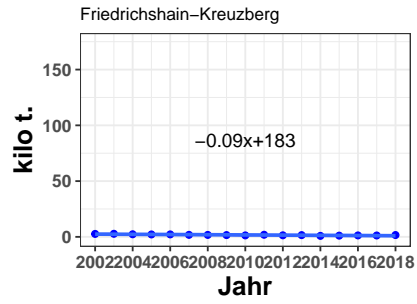
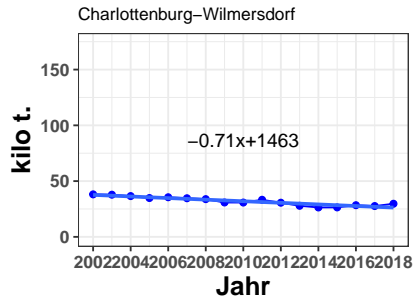
| Berlin, 1–2 Familiengebäude, CO2 Emissionen, Anteile nach Bezirken (%) | | | | | | |
|--|--------|---------------|---------|-------------------------|--------------------------|----------------------|
| Jahr | Pankow | Reinickendorf | Spandau | Steglitz– Zehlendorf | Tempelhof– Schöneberg | Treptow– Köpenick |
| 2002 | 8.37 | 17.51 | 11.42 | 19.11 | 8.66 | 9.56 |
| 2003 | 8.64 | 16.55 | 11.07 | 19.11 | 8.79 | 9.92 |
| 2004 | 8.36 | 16.77 | 11.38 | 19.09 | 8.9 | 9.9 |
| 2005 | 8.46 | 16.53 | 11.2 | 18.58 | 9 | 10.38 |
| 2006 | 8.56 | 16.23 | 11.01 | 18.74 | 8.92 | 10.73 |
| 2007 | 8.04 | 16.45 | 11.28 | 18.6 | 8.93 | 10.3 |
| 2008 | 8.47 | 15.96 | 11.23 | 18.75 | 8.62 | 10.83 |
| 2009 | 8.89 | 15.68 | 10.56 | 18.18 | 9 | 11.39 |
| 2010 | 8.32 | 16 | 10.21 | 18.11 | 8.87 | 11.6 |
| 2011 | 8.41 | 16.05 | 10.7 | 18.12 | 8.65 | 10.57 |
| 2012 | 8.2 | 15.99 | 10.4 | 18.34 | 8.68 | 11.13 |
| 2013 | 8.45 | 16.07 | 11.03 | 18.71 | 8.46 | 10.9 |
| 2014 | 8.68 | 15.75 | 10.49 | 18.55 | 8.94 | 10.61 |
| 2015 | 8.41 | 15.73 | 10.31 | 18.33 | 9.1 | 10.48 |
| 2016 | 8.36 | 16.35 | 10.36 | 18.77 | 8.37 | 10.8 |
| 2017 | 8.1 | 16.92 | 10.43 | 18.75 | 8.71 | 9.97 |
| 2018 | 10.44 | 15.76 | 9.76 | 18.29 | 8.92 | 9.37 |

2.1.4 Stadtbezirke, 1-2 Familiengebäude, co2-emissionen aus der Beheizung von Wohnraum
2002-2018 in 1.000 t

CO₂ Emissionen von Stadtbezirken, 1–2 Familiengebäude



BOOKMARK

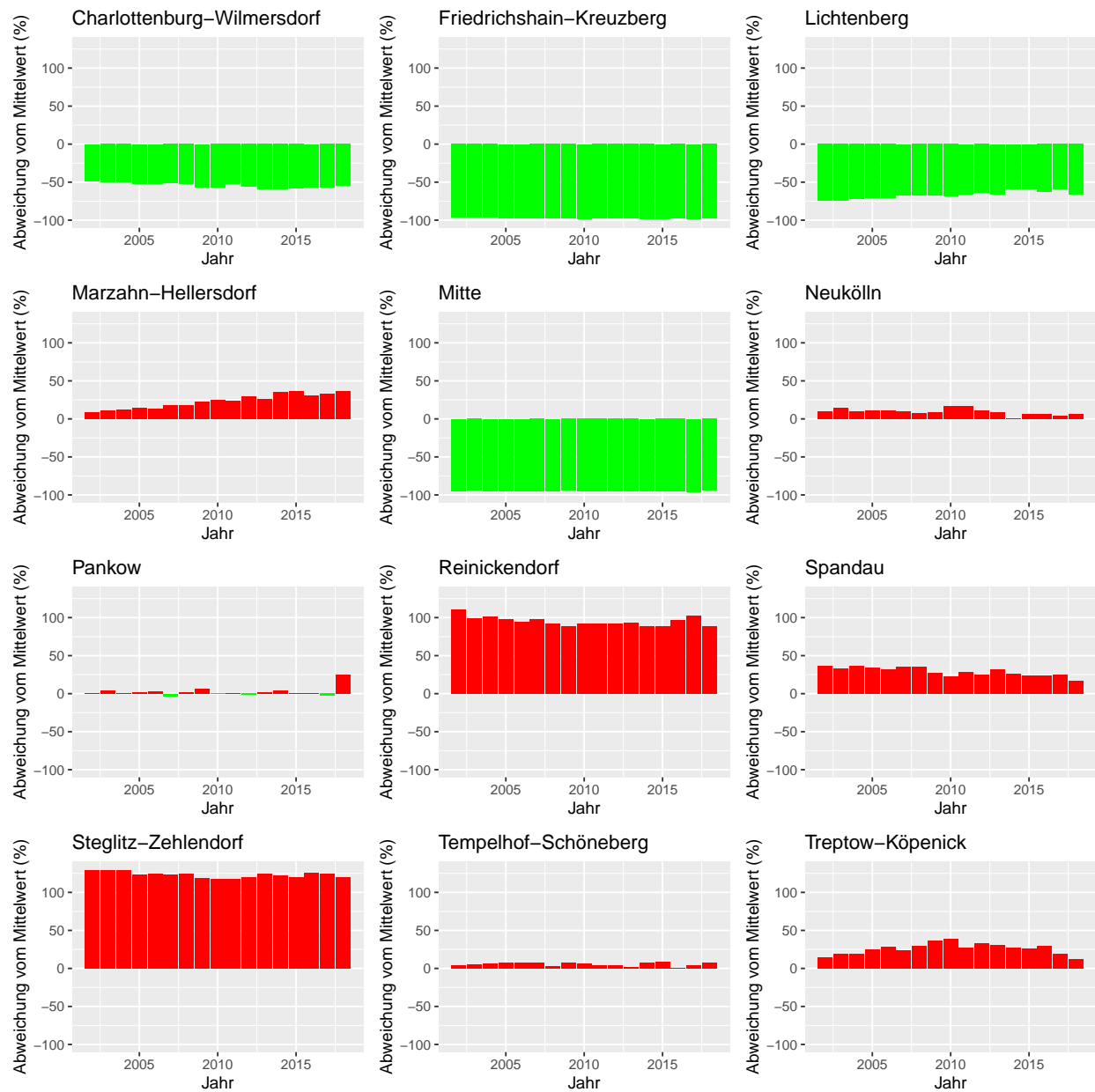


| Berlin, 1–2 Familiengebäude, CO2 Emissionen nach Bezirken (kilo t.) | | | | | | |
|---|-------------------------------|------------------------------|-------------|-------------------------|-------|----------|
| Jahr | Charlottenburg- Wilmerdorf | Friedrichshain- Kreuzberg | Lichtenberg | Marzahn- Hellersdorf | Mitte | Neukölln |
| 2002 | 38.1 | 2.64 | 18.81 | 80.29 | 3.84 | 81.15 |
| 2003 | 37.8 | 2.76 | 19.43 | 84.47 | 4.18 | 87 |
| 2004 | 36.56 | 2.32 | 20.41 | 82.76 | 3.87 | 81.04 |
| 2005 | 34.81 | 2.17 | 20.93 | 83.03 | 3.89 | 80.69 |
| 2006 | 35.52 | 2.2 | 21.42 | 83.68 | 3.83 | 81.31 |
| 2007 | 34.62 | 1.8 | 23.54 | 84.23 | 3.06 | 78.39 |
| 2008 | 33.82 | 1.74 | 23.23 | 83.67 | 3.7 | 75.9 |
| 2009 | 30.82 | 1.58 | 22.82 | 87.07 | 3.99 | 77.36 |
| 2010 | 30.76 | 1.3 | 22.28 | 89.13 | 3.48 | 83.22 |
| 2011 | 33.24 | 1.89 | 23.9 | 86.27 | 3.27 | 81.69 |
| 2012 | 30.62 | 1.38 | 24.82 | 90.45 | 3.18 | 77.75 |
| 2013 | 27.85 | 1.56 | 23.71 | 87.65 | 3.4 | 75.07 |
| 2014 | 26.36 | 0.89 | 26.93 | 88.18 | 3.38 | 66 |
| 2015 | 26.4 | 1.09 | 26.08 | 86.56 | 2.79 | 67.7 |
| 2016 | 28.38 | 1.28 | 24.14 | 85.85 | 2.85 | 69.64 |
| 2017 | 27.64 | 1.22 | 25.92 | 85.78 | 2.68 | 66.8 |
| 2018 | 29.69 | 1.63 | 22.28 | 90.1 | 3.6 | 70.69 |

| Berlin, 1–2 Familiengebäude, CO2 Emissionen nach Bezirken (kilo t.) | | | | | | |
|---|--------|---------------|---------|---------------------|----------------------|------------------|
| Jahr | Pankow | Reinickendorf | Spandau | Steglitz–Zehlendorf | Tempelhof–Schöneberg | Treptow–Köpenick |
| 2002 | 74.18 | 155.14 | 101.21 | 169.37 | 76.75 | 84.73 |
| 2003 | 78.64 | 150.6 | 100.72 | 173.88 | 80.01 | 90.27 |
| 2004 | 74.1 | 148.66 | 100.88 | 169.21 | 78.91 | 87.77 |
| 2005 | 73.81 | 144.24 | 97.68 | 162.06 | 78.52 | 90.56 |
| 2006 | 75.59 | 143.43 | 97.31 | 165.55 | 78.8 | 94.81 |
| 2007 | 68.77 | 140.61 | 96.41 | 159 | 76.38 | 88.07 |
| 2008 | 72 | 135.6 | 95.4 | 159.31 | 73.2 | 92.03 |
| 2009 | 75.55 | 133.35 | 89.78 | 154.58 | 76.52 | 96.87 |
| 2010 | 71.2 | 136.96 | 87.44 | 155.05 | 75.96 | 99.35 |
| 2011 | 70.36 | 134.33 | 89.5 | 151.59 | 72.35 | 88.44 |
| 2012 | 68.67 | 133.82 | 87.06 | 153.47 | 72.66 | 93.14 |
| 2013 | 70.26 | 133.58 | 91.68 | 155.48 | 70.33 | 90.62 |
| 2014 | 68.17 | 123.66 | 82.36 | 145.61 | 70.16 | 83.27 |
| 2015 | 64.08 | 119.86 | 78.59 | 139.69 | 69.37 | 79.86 |
| 2016 | 65.76 | 128.56 | 81.42 | 147.58 | 65.83 | 84.88 |
| 2017 | 62.71 | 131.01 | 80.73 | 145.17 | 67.41 | 77.15 |
| 2018 | 82.91 | 125.13 | 77.53 | 145.2 | 70.79 | 74.42 |

2.1.5 Stadtbezirke, 1-2 Familiengebäude, co2-emissionen aus der Beheizung von Wohnraum 2002-2018, Veränderung in Prozent

(CO2 emitted by a bezirk for a particular year - Average CO2 emitted by a bezirk in particular year)/(Average CO2 emitted by a bezirk in particular year) times 100



| Berlin, 1–2 Familiengebäude, CO2 Emissionen nach Bezirken, Abweichung vom jährlichen Mittelwert (%) | | | | | | |
|---|-------------------------------|------------------------------|-------------|-------------------------|--------|----------|
| Jahr | Charlottenburg– Wilmerdorf | Friedrichshain– Kreuzberg | Lichtenberg | Marzahn– Hellersdorf | Mitte | Neukölln |
| 2002 | –48.41 | –96.42 | –74.54 | 8.72 | –94.8 | 9.88 |
| 2003 | –50.13 | –96.36 | –74.38 | 11.42 | –94.48 | 14.75 |
| 2004 | –50.52 | –96.87 | –72.37 | 12.03 | –94.76 | 9.7 |
| 2005 | –52.12 | –97.02 | –71.21 | 14.21 | –94.65 | 11 |
| 2006 | –51.75 | –97.01 | –70.91 | 13.66 | –94.79 | 10.45 |
| 2007 | –51.41 | –97.47 | –66.96 | 18.23 | –95.71 | 10.04 |
| 2008 | –52.24 | –97.54 | –67.19 | 18.18 | –94.78 | 7.21 |
| 2009 | –56.51 | –97.77 | –67.8 | 22.88 | –94.37 | 9.17 |
| 2010 | –56.88 | –98.17 | –68.77 | 24.93 | –95.12 | 16.64 |
| 2011 | –52.33 | –97.3 | –65.73 | 23.71 | –95.31 | 17.14 |
| 2012 | –56.1 | –98.02 | –64.42 | 29.67 | –95.45 | 11.47 |
| 2013 | –59.8 | –97.75 | –65.76 | 26.54 | –95.09 | 8.38 |
| 2014 | –59.7 | –98.64 | –58.83 | 34.8 | –94.83 | 0.89 |
| 2015 | –58.43 | –98.28 | –58.94 | 36.31 | –95.61 | 6.6 |
| 2016 | –56.68 | –98.04 | –63.15 | 31.04 | –95.65 | 6.3 |
| 2017 | –57.17 | –98.1 | –59.83 | 32.95 | –95.84 | 3.53 |
| 2018 | –55.13 | –97.54 | –66.32 | 36.18 | –94.56 | 6.84 |

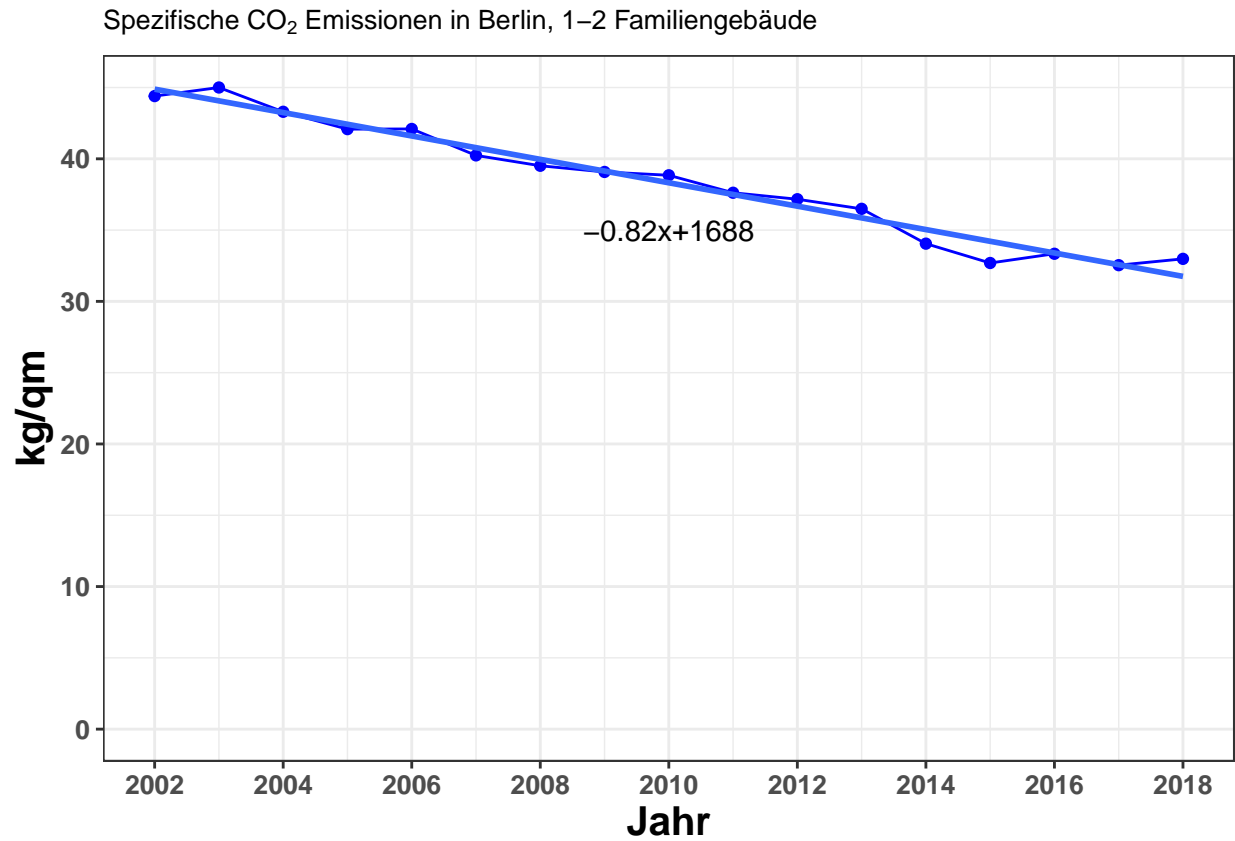
| Berlin, 1–2 Familiengebäude, CO2 Emissionen nach Bezirken, Abweichung vom jährlichen Mittelwert (%) | | | | | | |
|---|--------|---------------|---------|---------------------|----------------------|------------------|
| Jahr | Pankow | Reinickendorf | Spandau | Steglitz–Zehlendorf | Tempelhof–Schöneberg | Treptow–Köpenick |
| 2002 | 0.44 | 110.08 | 37.05 | 129.34 | 3.93 | 14.74 |
| 2003 | 3.73 | 98.64 | 32.85 | 129.35 | 5.54 | 19.07 |
| 2004 | 0.3 | 101.24 | 36.56 | 129.06 | 6.81 | 18.82 |
| 2005 | 1.53 | 98.41 | 34.37 | 122.92 | 8 | 24.57 |
| 2006 | 2.68 | 94.82 | 32.18 | 124.86 | 7.04 | 28.79 |
| 2007 | –3.47 | 97.39 | 35.33 | 123.19 | 7.22 | 23.63 |
| 2008 | 1.7 | 91.53 | 34.74 | 125.01 | 3.39 | 29.99 |
| 2009 | 6.62 | 88.19 | 26.71 | 118.16 | 8 | 36.72 |
| 2010 | –0.2 | 91.97 | 22.56 | 117.33 | 6.47 | 39.25 |
| 2011 | 0.9 | 92.63 | 28.34 | 117.38 | 3.75 | 26.82 |
| 2012 | –1.55 | 91.85 | 24.82 | 120.03 | 4.17 | 33.54 |
| 2013 | 1.43 | 92.85 | 32.37 | 124.47 | 1.54 | 30.82 |
| 2014 | 4.22 | 89.04 | 25.91 | 122.59 | 7.26 | 27.3 |
| 2015 | 0.9 | 88.74 | 23.76 | 119.96 | 9.23 | 25.76 |
| 2016 | 0.38 | 96.23 | 24.28 | 125.26 | 0.48 | 29.55 |
| 2017 | –2.8 | 103.06 | 25.12 | 125.01 | 4.48 | 19.58 |
| 2018 | 25.31 | 89.12 | 17.17 | 119.45 | 6.99 | 12.48 |

2.1.6 Stadtbezirke, 1-2 Familiengebäude, Veränderung der co2-emissionen aus der Beheizung von Wohnraum 2002-2018 in Prozent

*Skip this

2.2. Flächenbezug

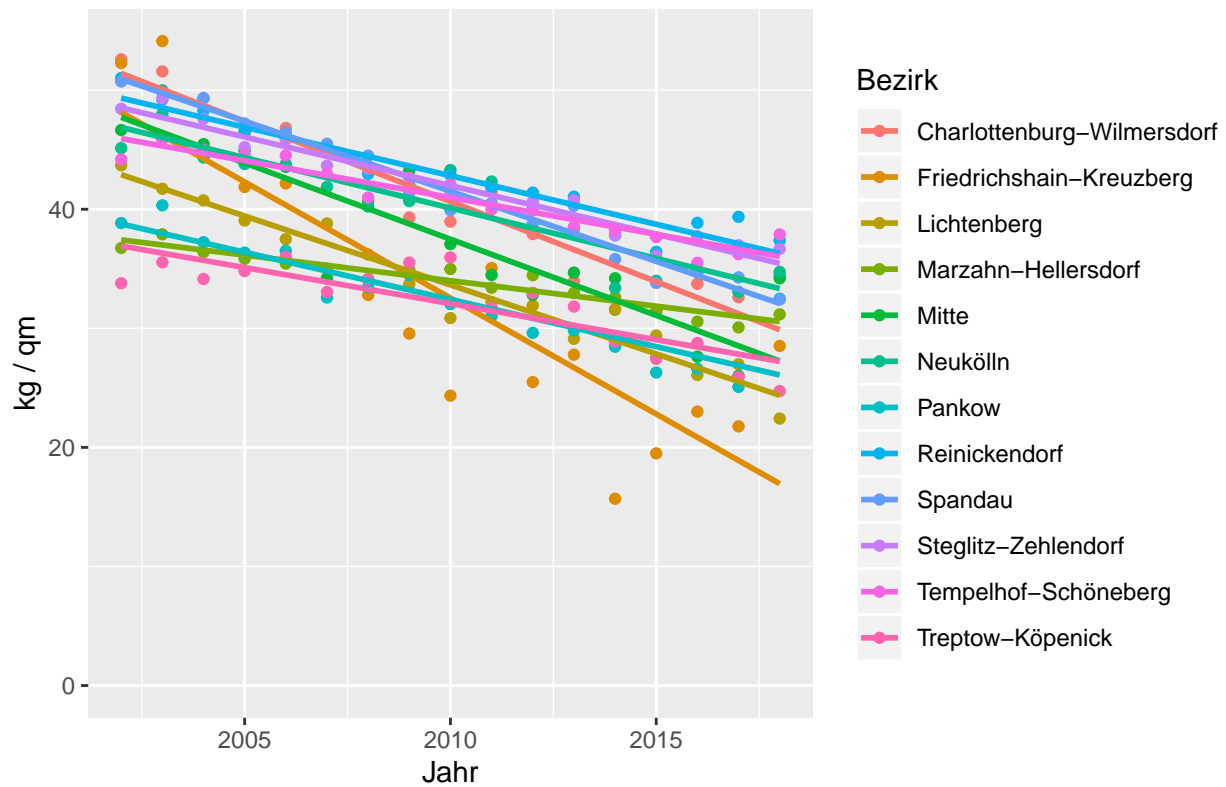
2.2.1 Berlin, 1-2 Familiengebäude, flächenbezogene CO₂-Emission aus der Beheizung von Wohnraum 2002 - 2018 in kg/m²[AN]

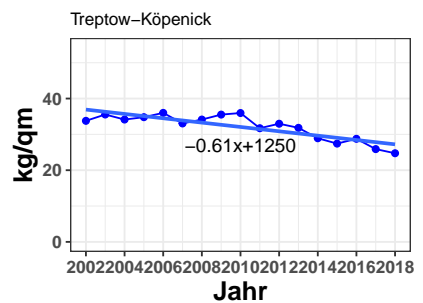
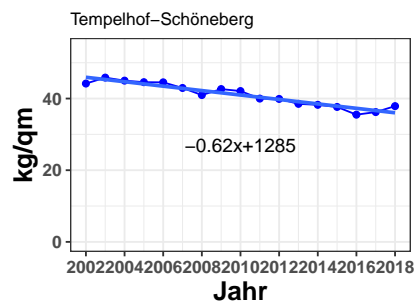
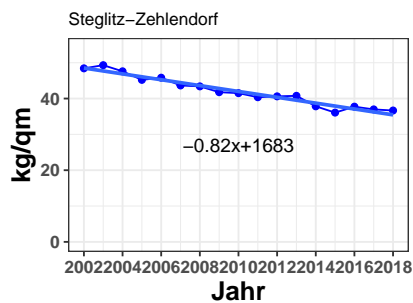
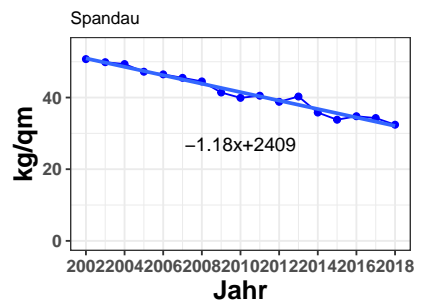
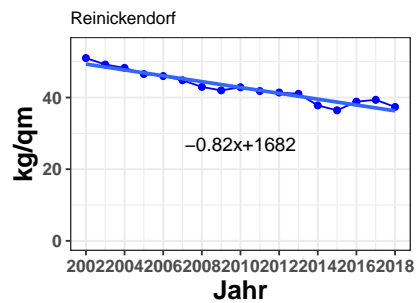
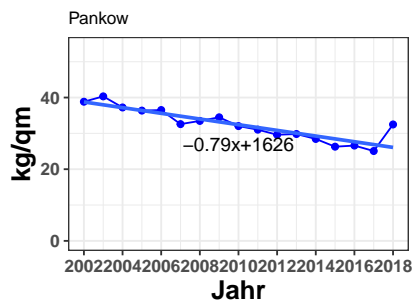
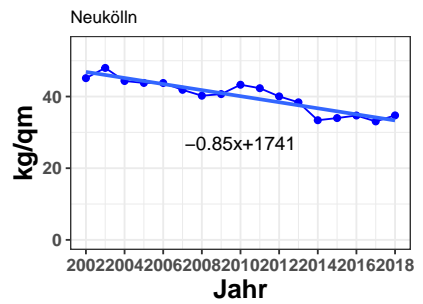
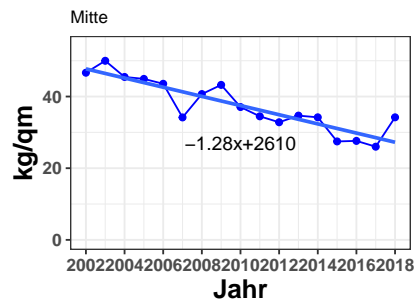
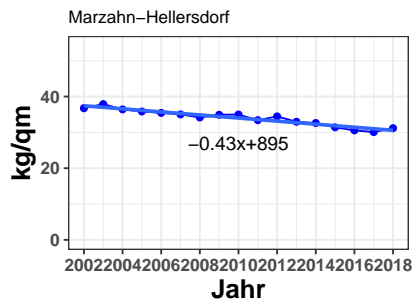
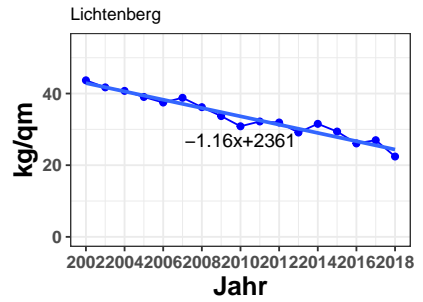
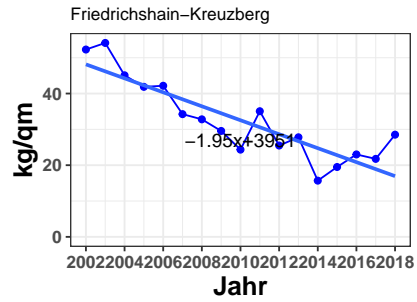
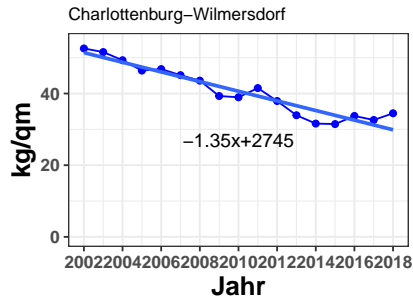


| Berlin, 1–2 Familiengebäude, Spezifische CO2 Emissionen | |
|--|-----------|
| Jahr | kg / q.m. |
| 2002 | 44.4 |
| 2003 | 45 |
| 2004 | 43.3 |
| 2005 | 42.08 |
| 2006 | 42.09 |
| 2007 | 40.24 |
| 2008 | 39.51 |
| 2009 | 39.08 |
| 2010 | 38.84 |
| 2011 | 37.62 |
| 2012 | 37.16 |
| 2013 | 36.49 |
| 2014 | 34.05 |
| 2015 | 32.69 |
| 2016 | 33.34 |
| 2017 | 32.54 |
| 2018 | 32.98 |

2.2.2. Stadtbezirke, 1-2 Familiengebäude, flächenbezogene CO₂-Emission aus Beheizung von Wohnraum 2002 - 2008 in kg/m²[AN]

Spezifische CO₂ Emissionen von Stadtbezirken, 1-2 Familiengebäude





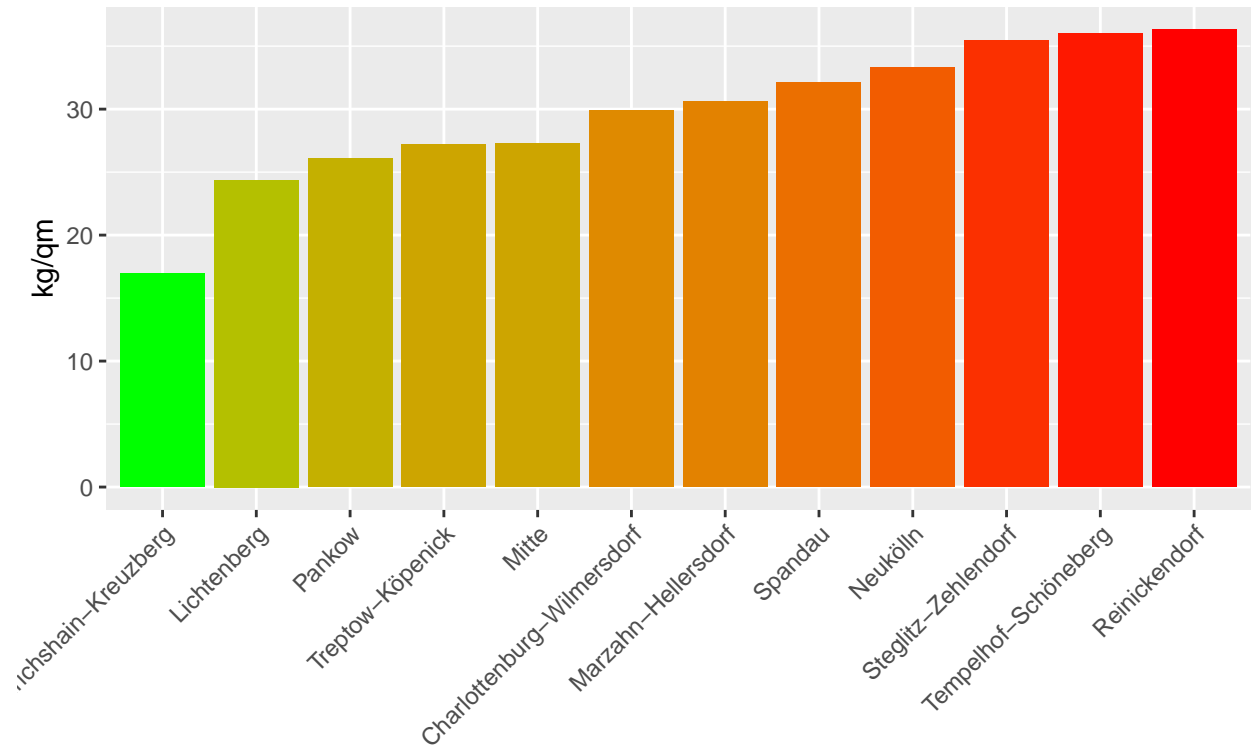
| Berlin, 1–2 Familiengebäude, spezifische CO2 Emissionen (kg / q.m.) | | | | | | |
|---|-------------------------------|------------------------------|-------------|-------------------------|-------|----------|
| Jahr | Charlottenburg- Wilmerdorf | Friedrichshain- Kreuzberg | Lichtenberg | Marzahn- Hellersdorf | Mitte | Neukölln |
| 2002 | 52.58 | 52.28 | 43.69 | 36.74 | 46.65 | 45.13 |
| 2003 | 51.57 | 54.12 | 41.72 | 37.89 | 49.98 | 47.99 |
| 2004 | 49.3 | 45.09 | 40.74 | 36.4 | 45.47 | 44.34 |
| 2005 | 46.41 | 41.87 | 39.04 | 35.83 | 44.92 | 43.8 |
| 2006 | 46.82 | 42.17 | 37.48 | 35.43 | 43.56 | 43.78 |
| 2007 | 45.13 | 34.25 | 38.81 | 35.01 | 34.17 | 41.87 |
| 2008 | 43.6 | 32.8 | 36.19 | 34.16 | 40.69 | 40.23 |
| 2009 | 39.3 | 29.56 | 33.7 | 34.91 | 43.25 | 40.68 |
| 2010 | 38.96 | 24.34 | 30.86 | 34.98 | 37.07 | 43.29 |
| 2011 | 41.53 | 35.06 | 32.2 | 33.4 | 34.48 | 42.33 |
| 2012 | 37.91 | 25.48 | 31.92 | 34.46 | 32.82 | 40.04 |
| 2013 | 33.94 | 27.79 | 29.11 | 32.96 | 34.68 | 38.39 |
| 2014 | 31.61 | 15.69 | 31.55 | 32.61 | 34.2 | 33.39 |
| 2015 | 31.47 | 19.5 | 29.39 | 31.4 | 27.47 | 33.99 |
| 2016 | 33.74 | 23 | 26.08 | 30.56 | 27.62 | 34.71 |
| 2017 | 32.61 | 21.76 | 26.98 | 30.08 | 26 | 33.06 |
| 2018 | 34.49 | 28.52 | 22.42 | 31.17 | 34.2 | 34.74 |

| Berlin, 1–2 Familiengebäude, spezifische CO2 Emissionen (kg / q.m.) | | | | | | |
|---|--------|---------------|---------|---------------------|----------------------|------------------|
| Jahr | Pankow | Reinickendorf | Spandau | Steglitz–Zehlendorf | Tempelhof–Schöneberg | Treptow–Köpenick |
| 2002 | 38.84 | 51.02 | 50.73 | 48.43 | 44.18 | 33.78 |
| 2003 | 40.33 | 49.21 | 49.87 | 49.31 | 45.84 | 35.55 |
| 2004 | 37.23 | 48.27 | 49.34 | 47.6 | 45 | 34.14 |
| 2005 | 36.35 | 46.55 | 47.2 | 45.22 | 44.57 | 34.8 |
| 2006 | 36.51 | 46 | 46.47 | 45.82 | 44.52 | 36 |
| 2007 | 32.58 | 44.83 | 45.5 | 43.66 | 42.95 | 33.05 |
| 2008 | 33.48 | 42.97 | 44.5 | 43.4 | 40.98 | 34.14 |
| 2009 | 34.48 | 42 | 41.4 | 41.78 | 42.64 | 35.52 |
| 2010 | 32.03 | 42.88 | 39.92 | 41.51 | 42.09 | 35.96 |
| 2011 | 31.04 | 41.81 | 40.51 | 40.37 | 39.99 | 31.72 |
| 2012 | 29.61 | 41.4 | 38.81 | 40.61 | 39.9 | 32.97 |
| 2013 | 29.82 | 41.05 | 40.28 | 40.76 | 38.52 | 31.83 |
| 2014 | 28.45 | 37.8 | 35.81 | 37.83 | 38.25 | 28.92 |
| 2015 | 26.29 | 36.43 | 33.81 | 36.08 | 37.66 | 27.43 |
| 2016 | 26.6 | 38.86 | 34.78 | 37.73 | 35.5 | 28.77 |
| 2017 | 25.08 | 39.36 | 34.27 | 36.97 | 36.22 | 25.89 |
| 2018 | 32.49 | 37.38 | 32.42 | 36.66 | 37.88 | 24.73 |

2.2.3. Stadtbezirke, 1-2 Familiengebäude, flächenbezogene CO2-Emission aus der Beheizung von Wohnraum im Jahr 2018 in kg/m²[AN]

2018 values for the specific CO2 emission in each bezirk

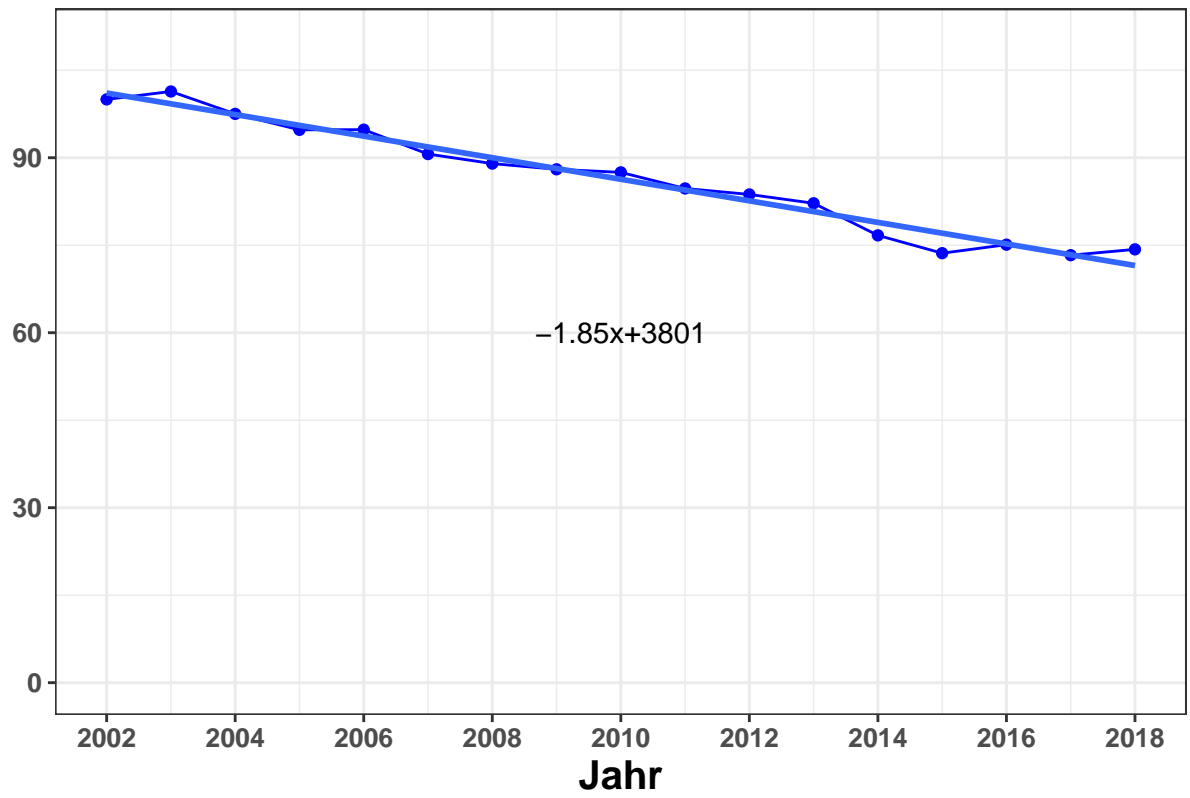
Spezifische CO₂ Emissionen 2018, 1–2 Familiengebäude



| Berlin, 1–2 Familingebäude, CO2 Emissionen (2018) | |
|--|------------------|
| Bezirk | kg / q.m. |
| Charlottenburg–Wilmerdorf | 29.88 |
| Friedrichshain–Kreuzberg | 16.95 |
| Lichtenberg | 24.38 |
| Marzahn–Hellersdorf | 30.57 |
| Mitte | 27.25 |
| Neukölln | 33.33 |
| Pankow | 26.08 |
| Reinickendorf | 36.29 |
| Spandau | 32.09 |
| Steglitz–Zehlendorf | 35.45 |
| Tempelhof–Schöneberg | 36.03 |
| Treptow–Köpenick | 27.22 |

2.2.4. Berlin, 1-2 Familiengebäude, flächenbezogene CO₂-Emission aus Beheizung von Wohnraum nach Stadtbezirken, 2002 - 2008, 2002 = 100

Spezifische CO₂ Emissionen in Berlin, 1-2 Familiengebäude, 2002 Wert = 100

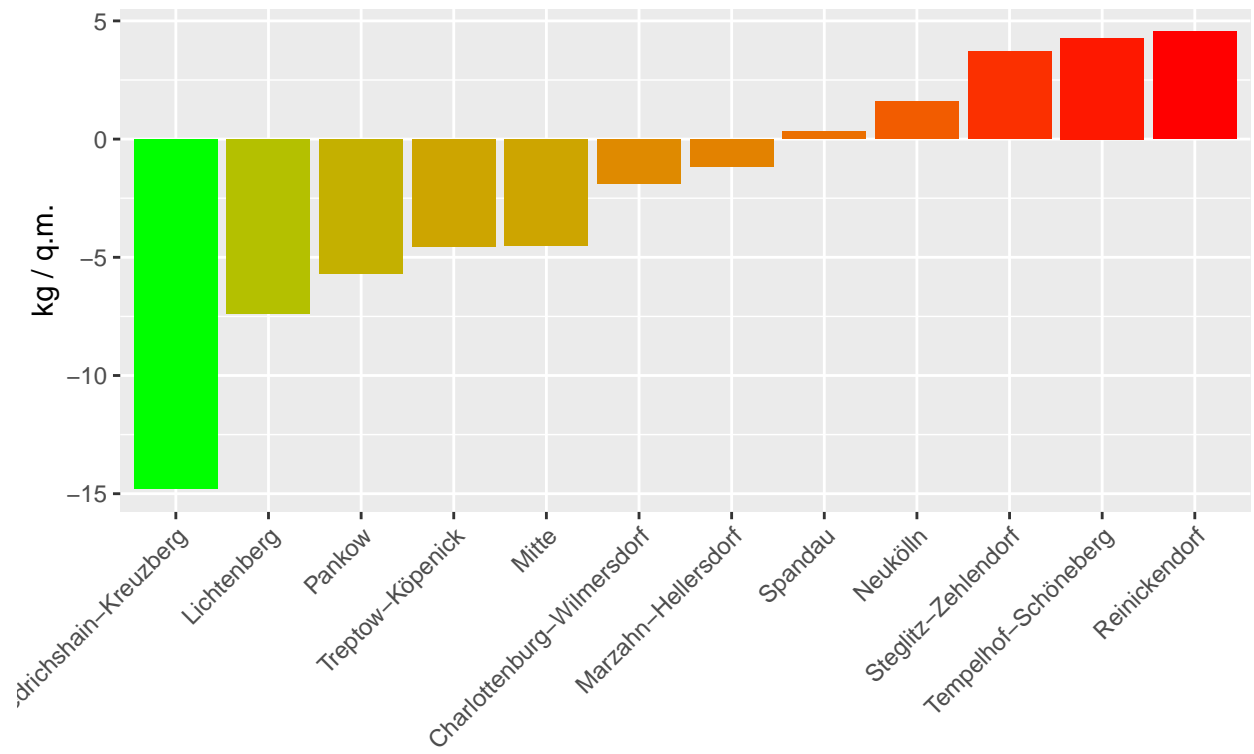


| Berlin, 1–2 Familiengebäude, spezifische CO2 Emissionen (2002 Wert = 100) | |
|--|-------------|
| Jahr | Wert |
| 2002 | 100 |
| 2003 | 101.35 |
| 2004 | 97.52 |
| 2005 | 94.78 |
| 2006 | 94.81 |
| 2007 | 90.63 |
| 2008 | 88.99 |
| 2009 | 88.01 |
| 2010 | 87.49 |
| 2011 | 84.73 |
| 2012 | 83.7 |
| 2013 | 82.19 |
| 2014 | 76.69 |
| 2015 | 73.63 |
| 2016 | 75.09 |
| 2017 | 73.29 |
| 2018 | 74.29 |

2.2.5. Alle Stadtbezirke, 1-2 Familiengebäude, flächenbezogene CO2-Emission aus der Beheizung von Wohnraum, Entwicklung 2002 - 2018 und Niveau 2018 (Rangfolge)

Specific CO2 emission in bezirk X in 2018 - Specific CO2 emission in Berlin in 2018

Spezifische CO₂ Emissionen, Abweichung von Berlin 2018, 1–2 Familiengröße

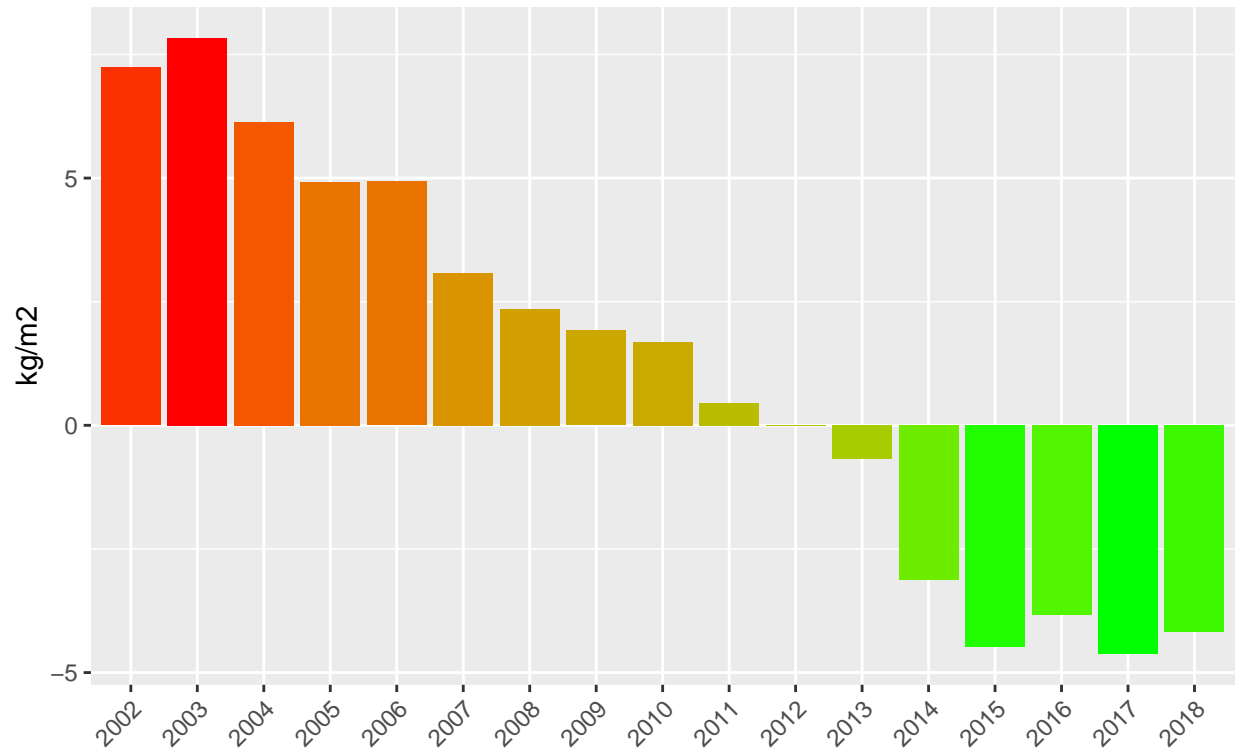


| Bezirke, 1–2 Familiengebäude, CO2 Emissionen (2018) Abweichung von Berlin | |
|--|------------------|
| Bezirk | kg / q.m. |
| Charlottenburg–Wilmerdorf | –1.87 |
| Friedrichshain–Kreuzberg | –14.80 |
| Lichtenberg | –7.38 |
| Marzahn–Hellersdorf | –1.18 |
| Mitte | –4.51 |
| Neukölln | 1.58 |
| Pankow | –5.67 |
| Reinickendorf | 4.54 |
| Spandau | 0.33 |
| Steglitz–Zehlendorf | 3.70 |
| Tempelhof–Schöneberg | 4.28 |
| Treptow–Köpenick | –4.53 |

2.2.6. Berlin, 1-2 Familiengebäude, durchschnittliche Emissionsminderung je qm Nutzfläche im Zeitraum 2012 - 2018

Berlin, specific co2 emission with 2012 value as the reference

Spezifische CO₂ Berlin, 1–2 Familiengebäude, zentriert um 2012

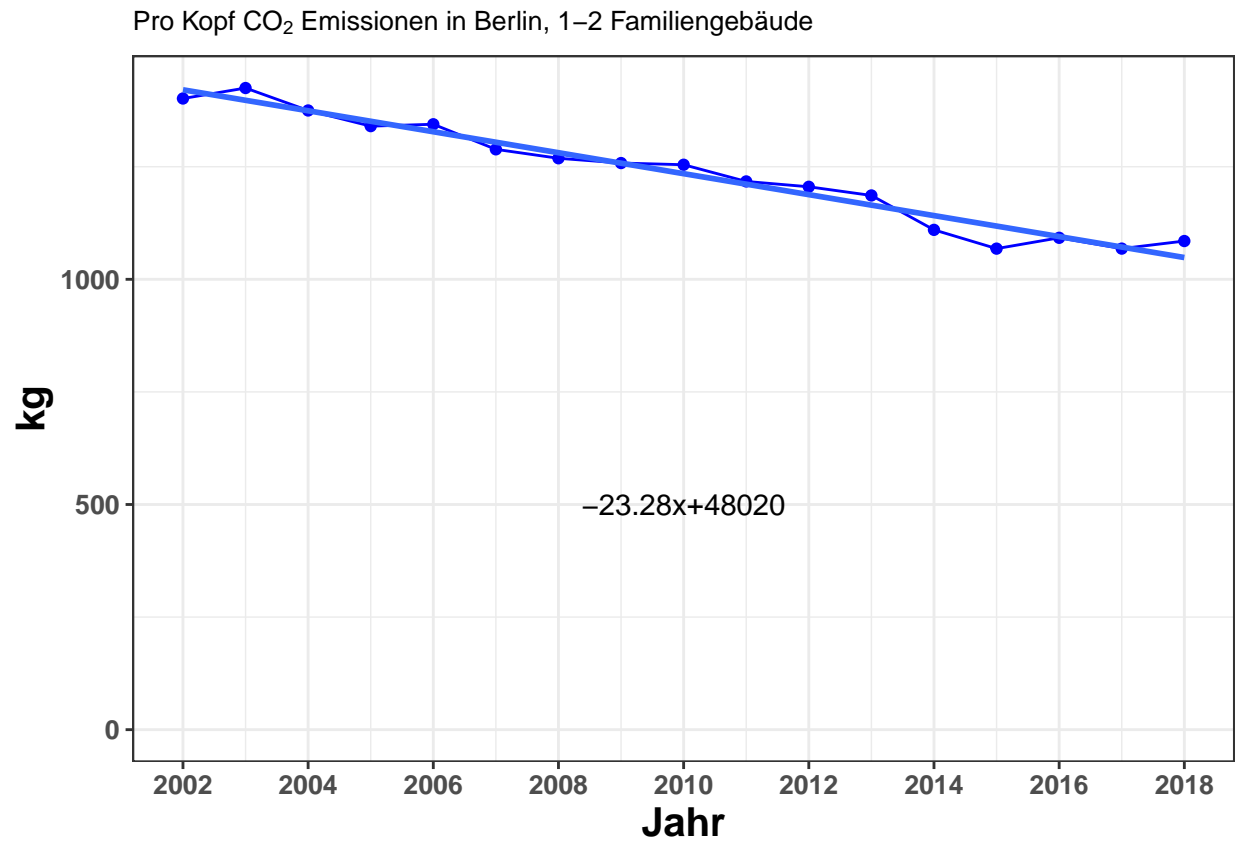


**Berlin, 1–2 Familiengebäude,
Spezifische CO2 Emissionen
Zentriert um 2012**

| Jahr | kg / q.m. |
|-------------|------------------|
| 2002 | 7.24 |
| 2003 | 7.84 |
| 2004 | 6.13 |
| 2005 | 4.92 |
| 2006 | 4.93 |
| 2007 | 3.07 |
| 2008 | 2.35 |
| 2009 | 1.91 |
| 2010 | 1.68 |
| 2011 | 0.46 |
| 2012 | 0 |
| 2013 | –0.67 |
| 2014 | –3.12 |
| 2015 | –4.47 |
| 2016 | –3.82 |
| 2017 | –4.62 |
| 2018 | –4.18 |

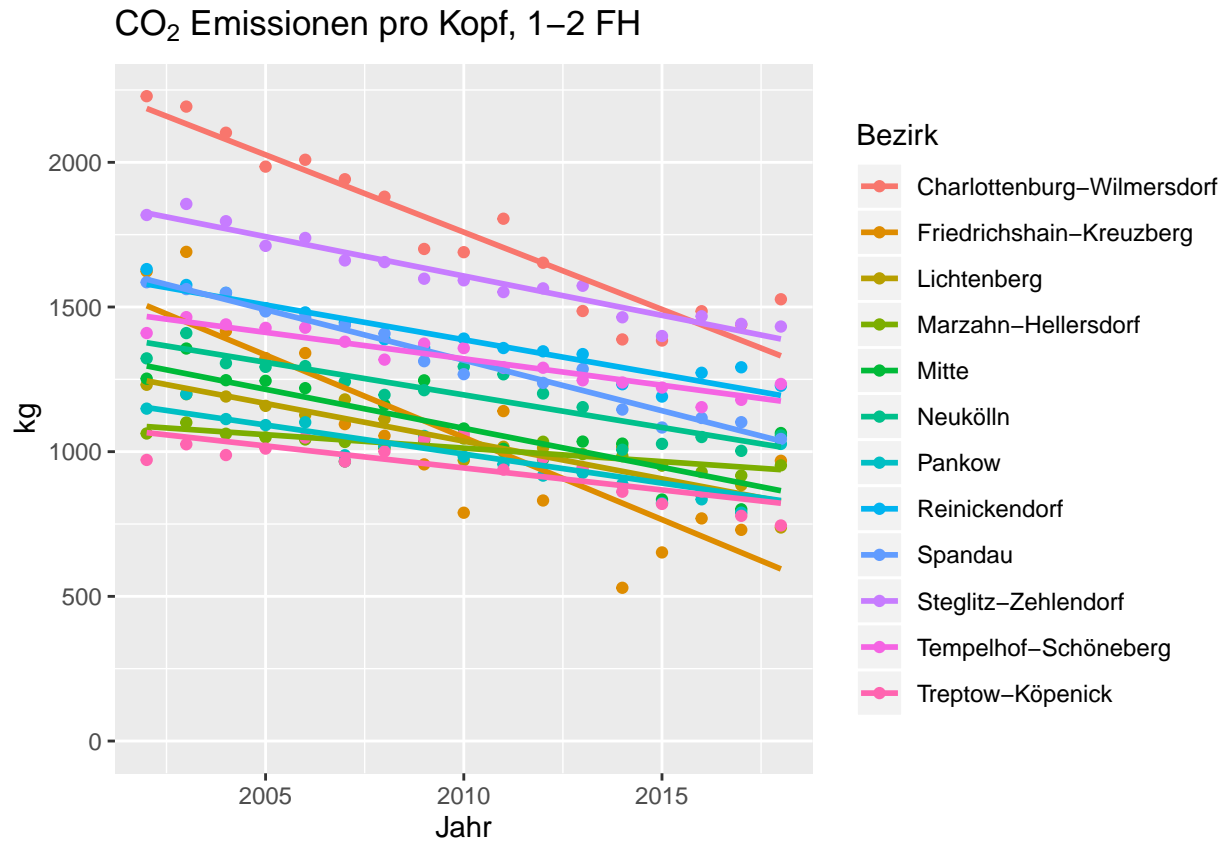
2.3. Emission pro Einwohner

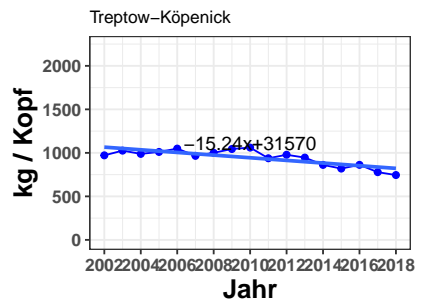
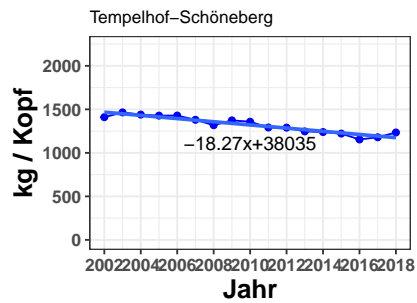
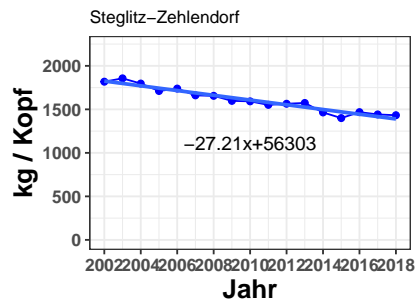
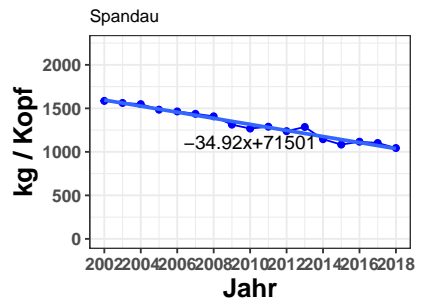
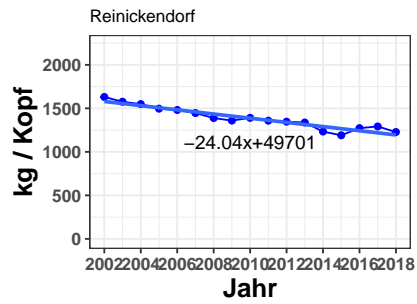
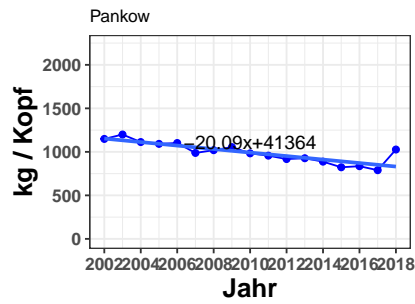
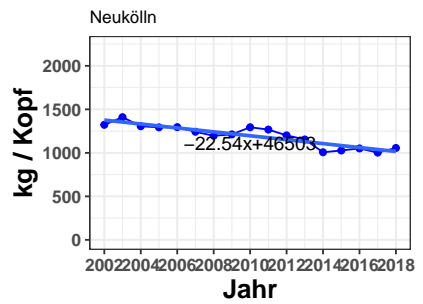
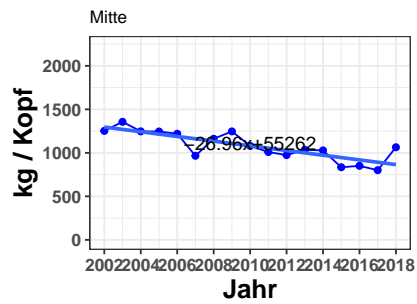
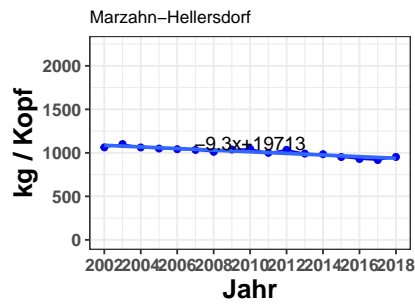
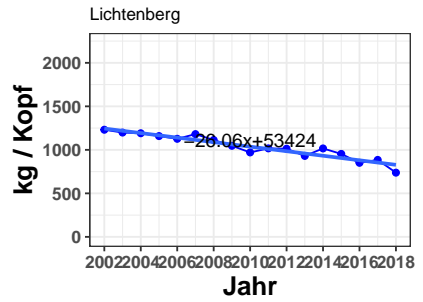
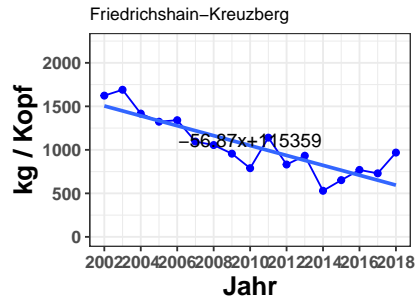
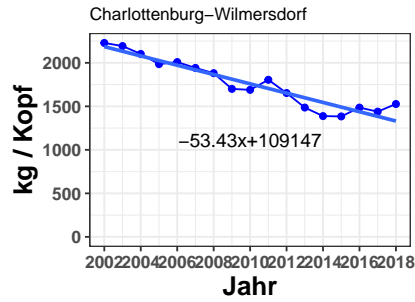
2.3.1. Stadtbezirke, 1-2 Familiengebäude, CO₂-Emission aus der Beheizung von Wohnraum pro Einwohner



| Berlin, 1–2 Familiengebäude, Pro Kopf CO2 Emissionen | |
|---|---------|
| Jahr | kg |
| 2002 | 1401.52 |
| 2003 | 1424.77 |
| 2004 | 1374.92 |
| 2005 | 1340.15 |
| 2006 | 1344.32 |
| 2007 | 1288.64 |
| 2008 | 1268.81 |
| 2009 | 1258.17 |
| 2010 | 1254.45 |
| 2011 | 1217.35 |
| 2012 | 1205.49 |
| 2013 | 1186.24 |
| 2014 | 1109.84 |
| 2015 | 1068.17 |
| 2016 | 1092.21 |
| 2017 | 1068.22 |
| 2018 | 1085.01 |

2.3.2. Stadtbezirke, 1-2 Familiengebäude, CO₂-Emission aus der Beheizung von Wohnraum pro Einwohner

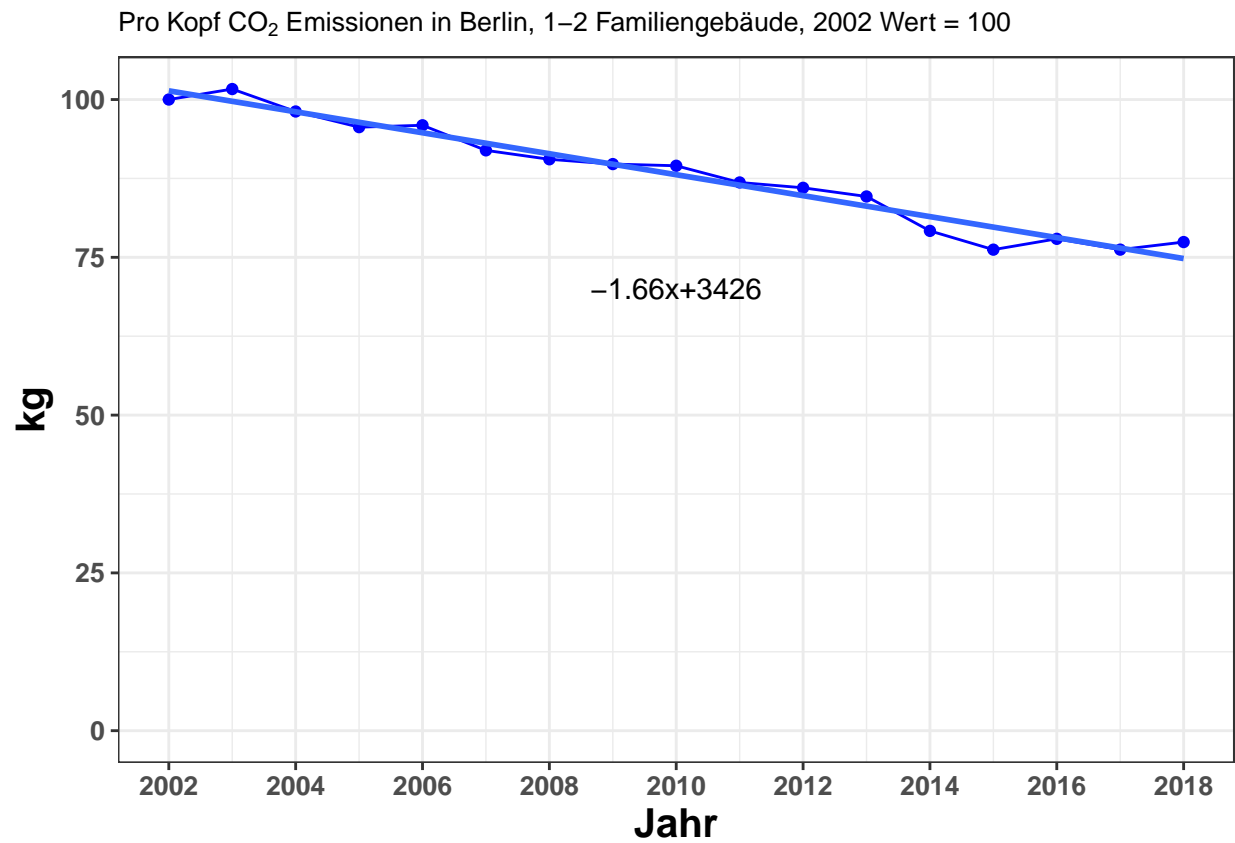




| Bezirke, 1–2 Familiengebäude, Pro Kopf CO2 Emissionen (kg) | | | | | | |
|--|-------------------------------|------------------------------|-------------|-------------------------|---------|----------|
| Jahr | Charlottenburg- Wilmerdorf | Friedrichshain- Kreuzberg | Lichtenberg | Marzahn- Hellersdorf | Mitte | Neukölln |
| 2002 | 2228.62 | 1623.25 | 1231.21 | 1062.84 | 1252.46 | 1322.41 |
| 2003 | 2192.68 | 1690.58 | 1198.7 | 1100.81 | 1356.44 | 1409.8 |
| 2004 | 2102.31 | 1416.81 | 1190.71 | 1062.03 | 1247.1 | 1305.81 |
| 2005 | 1985.15 | 1323.44 | 1158.29 | 1049.51 | 1245.08 | 1293.01 |
| 2006 | 2008.86 | 1340.78 | 1126.91 | 1042.08 | 1219.54 | 1295.7 |
| 2007 | 1941.58 | 1095.24 | 1180.66 | 1033.61 | 966.32 | 1242.23 |
| 2008 | 1881.26 | 1055.03 | 1113.01 | 1012.03 | 1161.69 | 1196.24 |
| 2009 | 1700.61 | 956.11 | 1046.54 | 1038.19 | 1246.52 | 1212.48 |
| 2010 | 1689.46 | 789 | 970.31 | 1045.43 | 1080.15 | 1294.04 |
| 2011 | 1805.08 | 1140.26 | 1016.93 | 1000.24 | 1009.77 | 1267.31 |
| 2012 | 1652.91 | 831.28 | 1012.92 | 1034.39 | 973.95 | 1201.02 |
| 2013 | 1486.16 | 932.23 | 930.24 | 991.53 | 1034.93 | 1153.9 |
| 2014 | 1387.92 | 529.64 | 1016.14 | 984.43 | 1027.9 | 1006.67 |
| 2015 | 1384.09 | 651.76 | 953.25 | 951.93 | 834.69 | 1027.02 |
| 2016 | 1485.53 | 769.29 | 851.02 | 929.61 | 850.54 | 1050.71 |
| 2017 | 1439.07 | 729.88 | 884.35 | 917.49 | 800.79 | 1002.88 |
| 2018 | 1526.78 | 968.52 | 737.98 | 952.82 | 1064.43 | 1056.06 |

| Bezirke, 1–2 Familiengebäude, Pro Kopf CO2 Emissionen (kg) | | | | | | |
|--|---------|---------------|---------|---------------------|----------------------|------------------|
| Jahr | Pankow | Reinickendorf | Spandau | Steglitz–Zehlendorf | Tempelhof–Schöneberg | Treptow–Köpenick |
| 2002 | 1148.71 | 1630.98 | 1585.53 | 1818 | 1410 | 971.46 |
| 2003 | 1199.12 | 1576.15 | 1561.93 | 1856.2 | 1464.97 | 1025.58 |
| 2004 | 1112.66 | 1548.96 | 1548.76 | 1796.57 | 1439.89 | 988.35 |
| 2005 | 1091.83 | 1496.31 | 1484.78 | 1711.27 | 1428.01 | 1010.68 |
| 2006 | 1101.65 | 1481.36 | 1464.59 | 1738.7 | 1428.48 | 1048.9 |
| 2007 | 987.67 | 1445.98 | 1436.93 | 1660.98 | 1379.95 | 965.86 |
| 2008 | 1019.32 | 1388.4 | 1408.19 | 1655.37 | 1318.1 | 1000.58 |
| 2009 | 1054.49 | 1359.37 | 1312.68 | 1597.73 | 1373.47 | 1044.25 |
| 2010 | 982.81 | 1390.89 | 1267.84 | 1592.19 | 1357.95 | 1060.68 |
| 2011 | 956.4 | 1358.18 | 1289.19 | 1551.65 | 1291.56 | 937.98 |
| 2012 | 917.33 | 1346.89 | 1237.76 | 1564.39 | 1290.06 | 978.04 |
| 2013 | 926.77 | 1337.26 | 1285.88 | 1573.45 | 1246.63 | 945.75 |
| 2014 | 887.56 | 1233.05 | 1145.57 | 1464.5 | 1239.14 | 861.6 |
| 2015 | 822.76 | 1190.47 | 1083.53 | 1399.71 | 1221.61 | 819.45 |
| 2016 | 835.28 | 1272.68 | 1116.53 | 1468.07 | 1153.81 | 862.29 |
| 2017 | 789.29 | 1291.71 | 1101.89 | 1441.65 | 1179.12 | 778.26 |
| 2018 | 1026.8 | 1227.79 | 1043.9 | 1432.46 | 1234.04 | 744.96 |

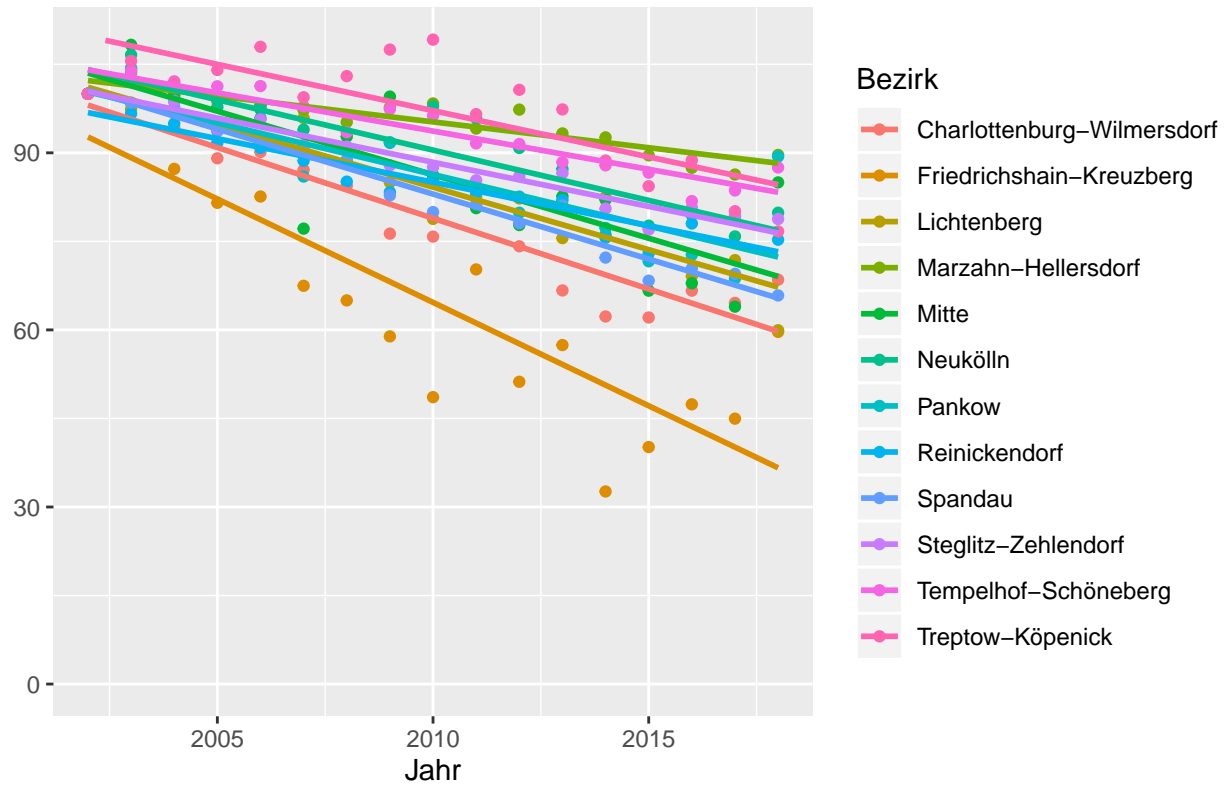
2.3.3. Stadtbezirke, 1-2 Familiengebäude, CO₂-Emission pro Einwohner aus der Beheizung von Wohnraum, 2002 - 2008, 2002 = 100

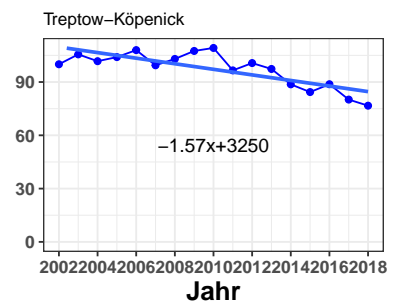
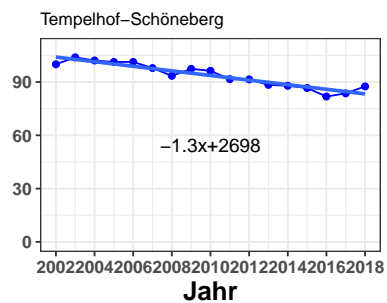
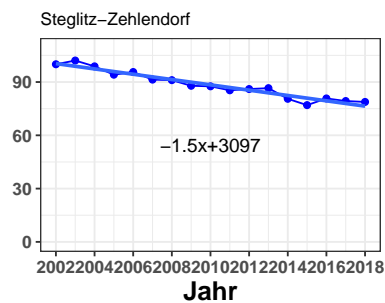
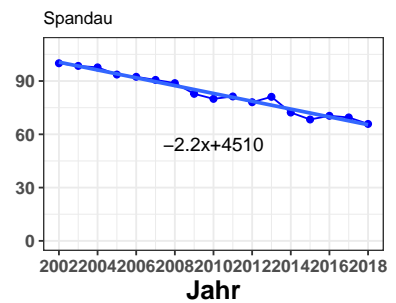
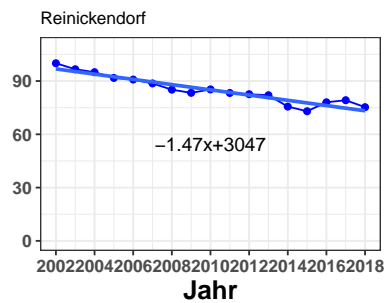
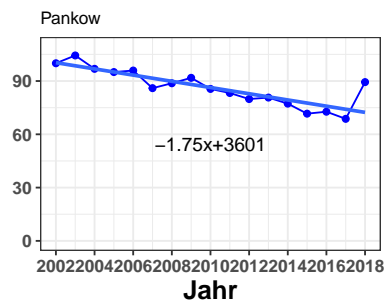
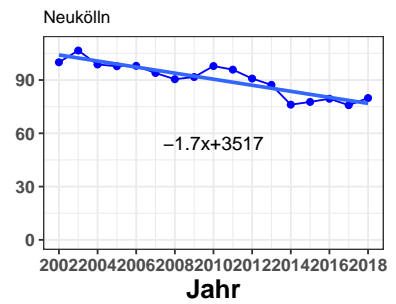
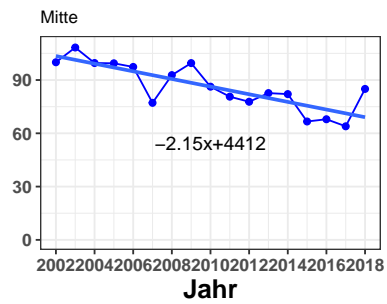
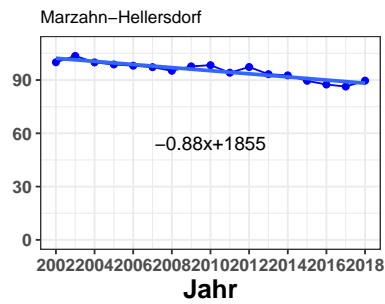
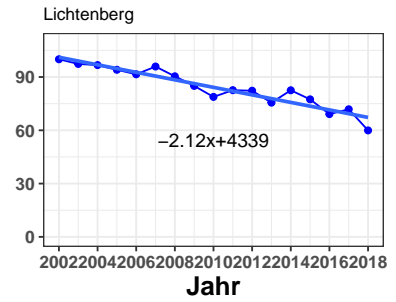
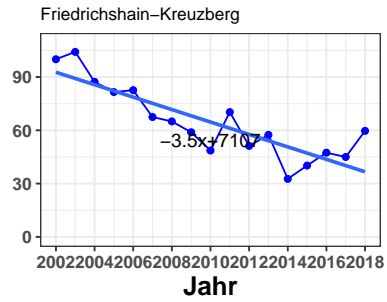
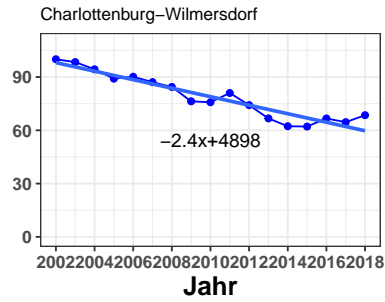


| Berlin, 1–2 Familiengebäude, Pro Kopf CO2 Emissionen (2002 Wert = 100) | |
|---|-------------|
| Jahr | Wert |
| 2002 | 100 |
| 2003 | 101.66 |
| 2004 | 98.1 |
| 2005 | 95.62 |
| 2006 | 95.92 |
| 2007 | 91.95 |
| 2008 | 90.53 |
| 2009 | 89.77 |
| 2010 | 89.51 |
| 2011 | 86.86 |
| 2012 | 86.01 |
| 2013 | 84.64 |
| 2014 | 79.19 |
| 2015 | 76.21 |
| 2016 | 77.93 |
| 2017 | 76.22 |
| 2018 | 77.42 |

2.3.4. Stadtbezirke, 1-2 Familiengebäude, CO₂-Emissionen aus der Beheizung von Wohnraum pro Einwohner

Pro Kopf CO₂ Emissionen in Stadtbezirken, 1–2 Familiengebäude, 2002 Wert





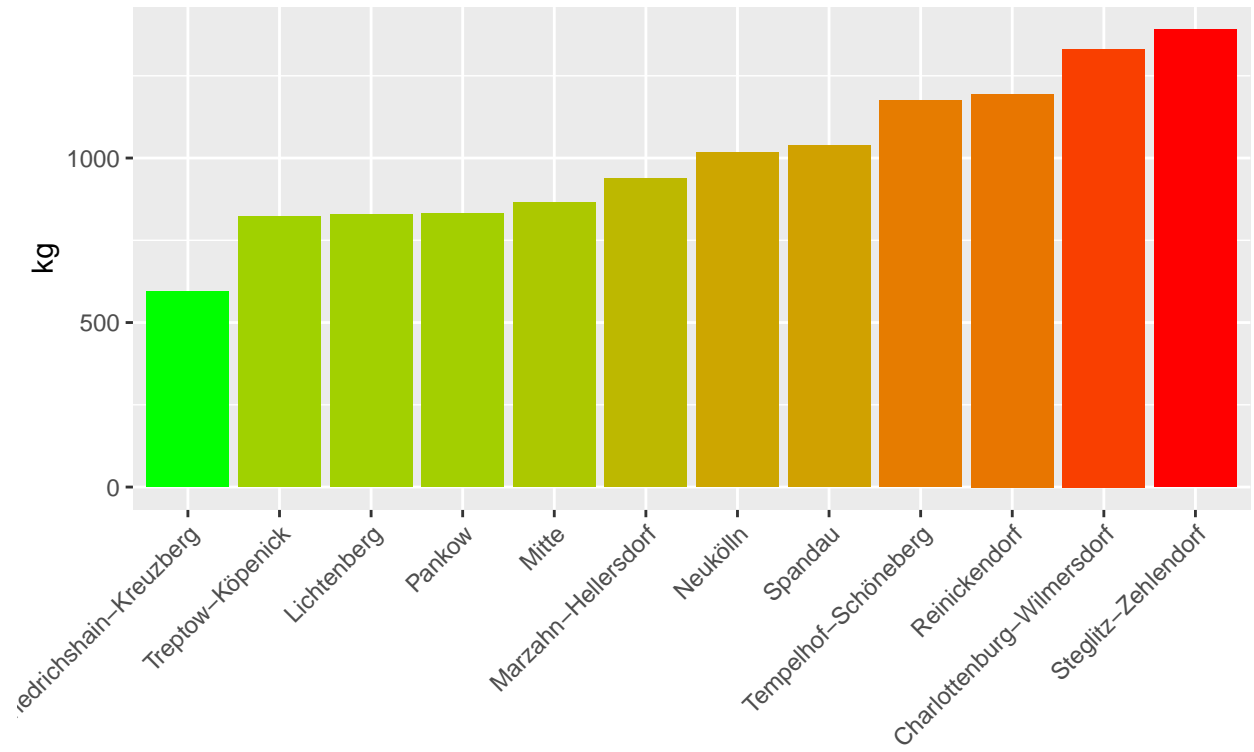
| Berlin, 1–2 Familiengebäude, Pro Kopf CO2 Emissionen nach Bezirken, 2002 Wert = 100 | | | | | | |
|---|-------------------------------|------------------------------|-------------|-------------------------|-------|----------|
| Jahr | Charlottenburg- Wilmerdorf | Friedrichshain- Kreuzberg | Lichtenberg | Marzahn- Hellersdorf | Mitte | Neukölln |
| 2002 | 100 | 100 | 100 | 100 | 100 | 100 |
| 2003 | 98.39 | 104.15 | 97.36 | 103.57 | 108.3 | 106.61 |
| 2004 | 94.33 | 87.28 | 96.71 | 99.92 | 99.57 | 98.74 |
| 2005 | 89.08 | 81.53 | 94.08 | 98.75 | 99.41 | 97.78 |
| 2006 | 90.14 | 82.6 | 91.53 | 98.05 | 97.37 | 97.98 |
| 2007 | 87.12 | 67.47 | 95.89 | 97.25 | 77.15 | 93.94 |
| 2008 | 84.41 | 64.99 | 90.4 | 95.22 | 92.75 | 90.46 |
| 2009 | 76.31 | 58.9 | 85 | 97.68 | 99.53 | 91.69 |
| 2010 | 75.81 | 48.61 | 78.81 | 98.36 | 86.24 | 97.85 |
| 2011 | 81 | 70.25 | 82.6 | 94.11 | 80.62 | 95.83 |
| 2012 | 74.17 | 51.21 | 82.27 | 97.32 | 77.76 | 90.82 |
| 2013 | 66.69 | 57.43 | 75.55 | 93.29 | 82.63 | 87.26 |
| 2014 | 62.28 | 32.63 | 82.53 | 92.62 | 82.07 | 76.12 |
| 2015 | 62.11 | 40.15 | 77.42 | 89.56 | 66.64 | 77.66 |
| 2016 | 66.66 | 47.39 | 69.12 | 87.46 | 67.91 | 79.45 |
| 2017 | 64.57 | 44.96 | 71.83 | 86.32 | 63.94 | 75.84 |
| 2018 | 68.51 | 59.67 | 59.94 | 89.65 | 84.99 | 79.86 |

| Berlin, 1–2 Familiengebäude, Pro Kopf CO2 Emissionen nach Bezirken, 2002 Wert = 100 | | | | | | |
|---|--------|---------------|---------|---------------------|----------------------|------------------|
| Jahr | Pankow | Reinickendorf | Spandau | Steglitz–Zehlendorf | Tempelhof–Schöneberg | Treptow–Köpenick |
| 2002 | 100 | 100 | 100 | 100 | 100 | 100 |
| 2003 | 104.39 | 96.64 | 98.51 | 102.1 | 103.9 | 105.57 |
| 2004 | 96.86 | 94.97 | 97.68 | 98.82 | 102.12 | 101.74 |
| 2005 | 95.05 | 91.74 | 93.65 | 94.13 | 101.28 | 104.04 |
| 2006 | 95.9 | 90.83 | 92.37 | 95.64 | 101.31 | 107.97 |
| 2007 | 85.98 | 88.66 | 90.63 | 91.36 | 97.87 | 99.42 |
| 2008 | 88.74 | 85.13 | 88.81 | 91.05 | 93.48 | 103 |
| 2009 | 91.8 | 83.35 | 82.79 | 87.88 | 97.41 | 107.49 |
| 2010 | 85.56 | 85.28 | 79.96 | 87.58 | 96.31 | 109.18 |
| 2011 | 83.26 | 83.27 | 81.31 | 85.35 | 91.6 | 96.55 |
| 2012 | 79.86 | 82.58 | 78.07 | 86.05 | 91.49 | 100.68 |
| 2013 | 80.68 | 81.99 | 81.1 | 86.55 | 88.41 | 97.35 |
| 2014 | 77.27 | 75.6 | 72.25 | 80.56 | 87.88 | 88.69 |
| 2015 | 71.62 | 72.99 | 68.34 | 76.99 | 86.64 | 84.35 |
| 2016 | 72.71 | 78.03 | 70.42 | 80.75 | 81.83 | 88.76 |
| 2017 | 68.71 | 79.2 | 69.5 | 79.3 | 83.63 | 80.11 |
| 2018 | 89.39 | 75.28 | 65.84 | 78.79 | 87.52 | 76.68 |

2.3.5. Stadtbezirke, 1-2 Familiengebäude, CO2-Emissionen aus der Beheizung von Wohnraum pro Einwohner, Niveau im Jahr 2018 in t/Einwohner

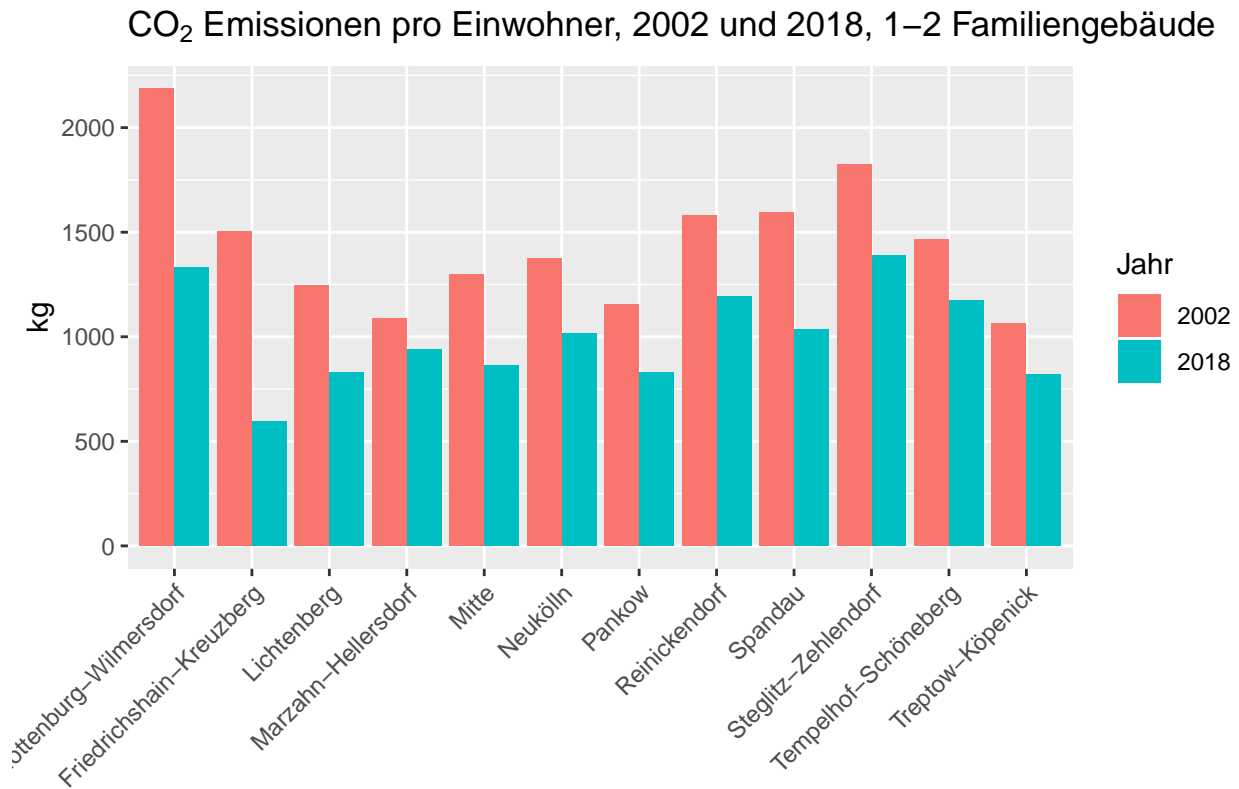
I need the data for the population in SFH and MFH buildings

CO₂ Emissionen pro Einwohner in Stadtbezirken 2018, 1–2 Familiengebäi

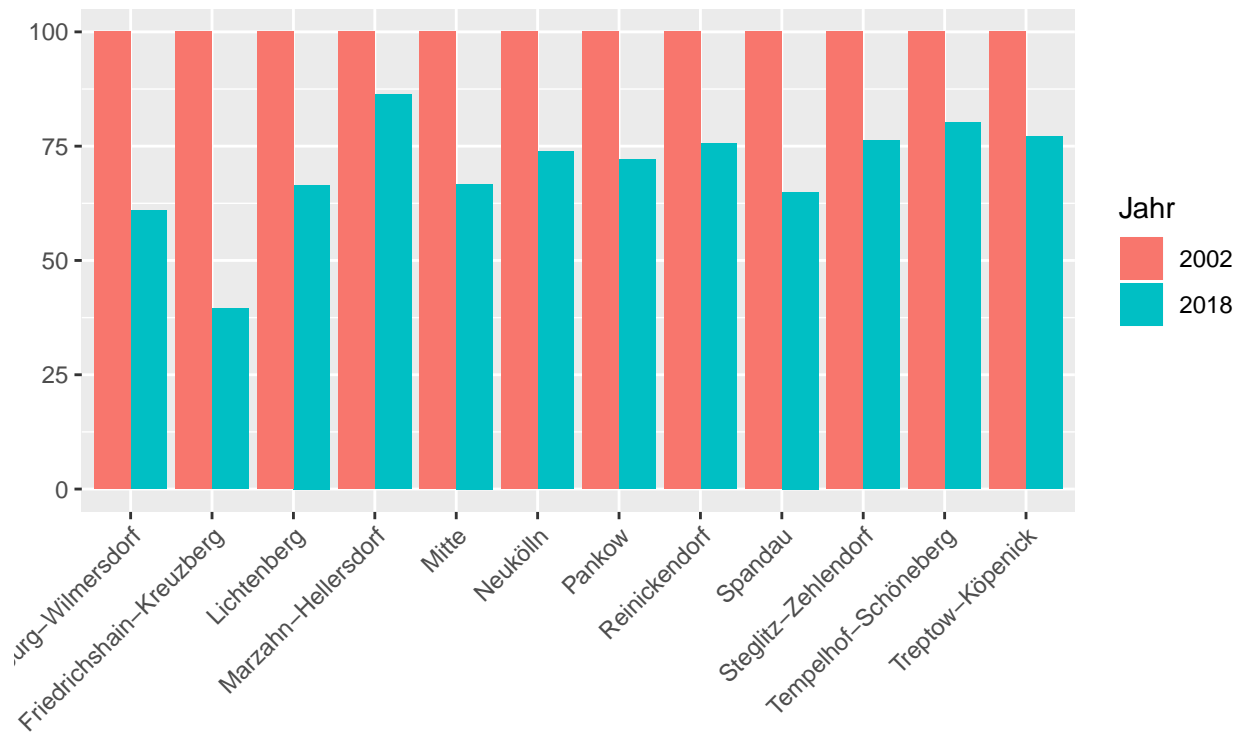


| Bezirke, 1–2 Familiengebäude, pro Kopf CO2 Emissionen (2018) | |
|---|-----------|
| Bezirk | kg |
| Charlottenburg–Wilmerdorf | 1331.29 |
| Friedrichshain–Kreuzberg | 594.63 |
| Lichtenberg | 827.91 |
| Marzahn–Hellersdorf | 937.86 |
| Mitte | 865.08 |
| Neukölln | 1015.98 |
| Pankow | 831.11 |
| Reinickendorf | 1194.55 |
| Spandau | 1036.86 |
| Steglitz–Zehlendorf | 1389.53 |
| Tempelhof–Schöneberg | 1174.86 |
| Treptow–Köpenick | 821.91 |

2.3.6. Stadtbezirke, 1-2 Familiengebäude, CO₂-Emissionen aus der Beheizung von Wohnraum pro Einwohner, Veränderung 2002 / 2018 in Prozent



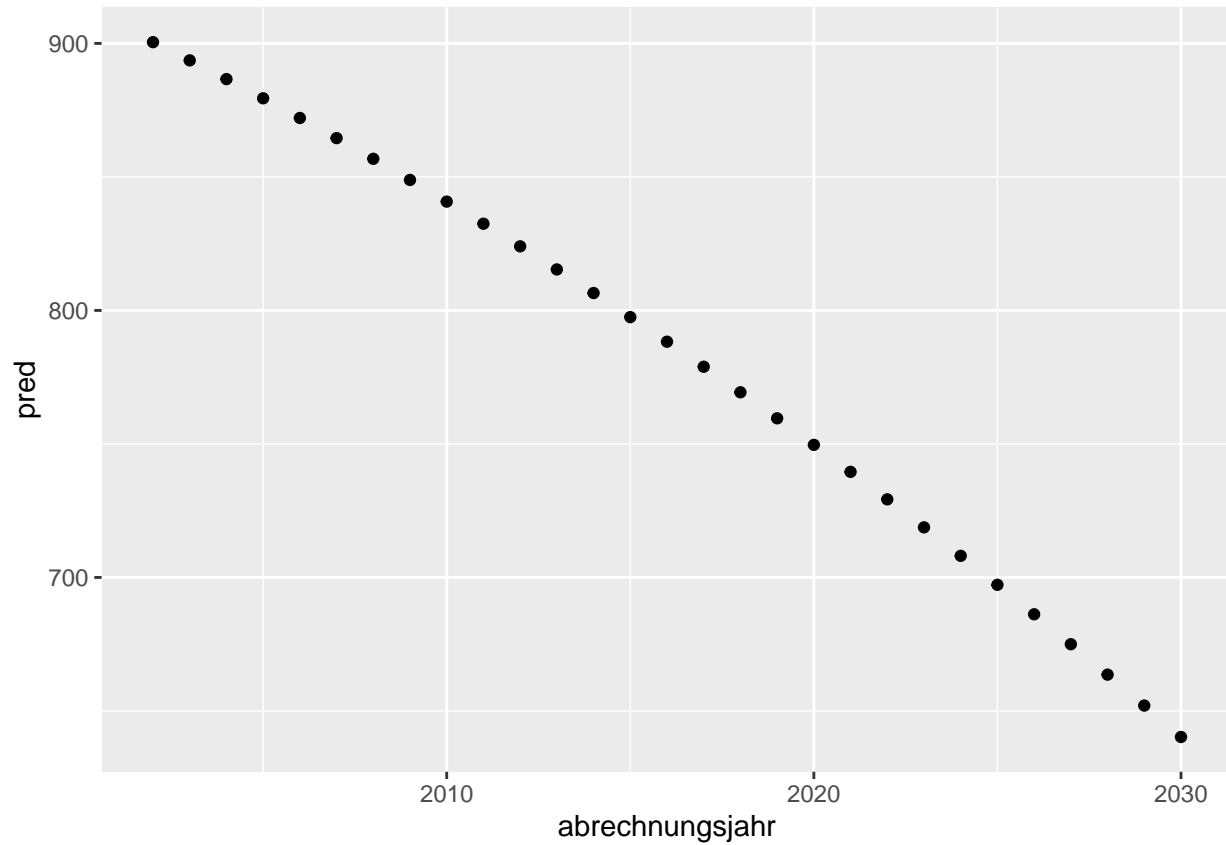
pro Kopf CO₂ Emissionen 2018, 1–2 Familiengebäude, 2002 Wert = 100



| Berlin, 1–2 Familiengebäude, Pro Kopf CO2 Emissionen 2002 und 2018 Werte (kg) | | |
|--|-------------|-------------|
| Bezirk | 2002 | 2018 |
| Charlottenburg–Wilmerdorf | 2186.13 | 1331.29 |
| Friedrichshain–Kreuzberg | 1504.56 | 594.63 |
| Lichtenberg | 1244.93 | 827.91 |
| Marzahn–Hellersdorf | 1086.72 | 937.86 |
| Mitte | 1296.37 | 865.08 |
| Neukölln | 1376.64 | 1015.98 |
| Pankow | 1152.48 | 831.11 |
| Reinickendorf | 1579.15 | 1194.55 |
| Spandau | 1595.55 | 1036.86 |
| Steglitz–Zehlendorf | 1824.92 | 1389.53 |
| Tempelhof–Schöneberg | 1467.11 | 1174.86 |
| Treptow–Köpenick | 1065.70 | 821.91 |

2.4. Prognose

2.4.1 Berlin, 1-2 Familiengebäude, Prognose der CO₂-Emission aus der Beheizung 2019-2030 in Mio. t (Trend Polynom 2. Grades)



| ## | abrechnungsjahr | pred |
|-------|-----------------|----------|
| ## 1 | 2002 | 900.4637 |
| ## 2 | 2003 | 893.6411 |
| ## 3 | 2004 | 886.6354 |
| ## 4 | 2005 | 879.4467 |
| ## 5 | 2006 | 872.0751 |
| ## 6 | 2007 | 864.5205 |
| ## 7 | 2008 | 856.7828 |
| ## 8 | 2009 | 848.8622 |
| ## 9 | 2010 | 840.7586 |
| ## 10 | 2011 | 832.4720 |
| ## 11 | 2012 | 824.0024 |
| ## 12 | 2013 | 815.3498 |
| ## 13 | 2014 | 806.5142 |
| ## 14 | 2015 | 797.4957 |
| ## 15 | 2016 | 788.2941 |
| ## 16 | 2017 | 778.9095 |
| ## 17 | 2018 | 769.3420 |
| ## 18 | 2019 | 759.5914 |
| ## 19 | 2020 | 749.6579 |

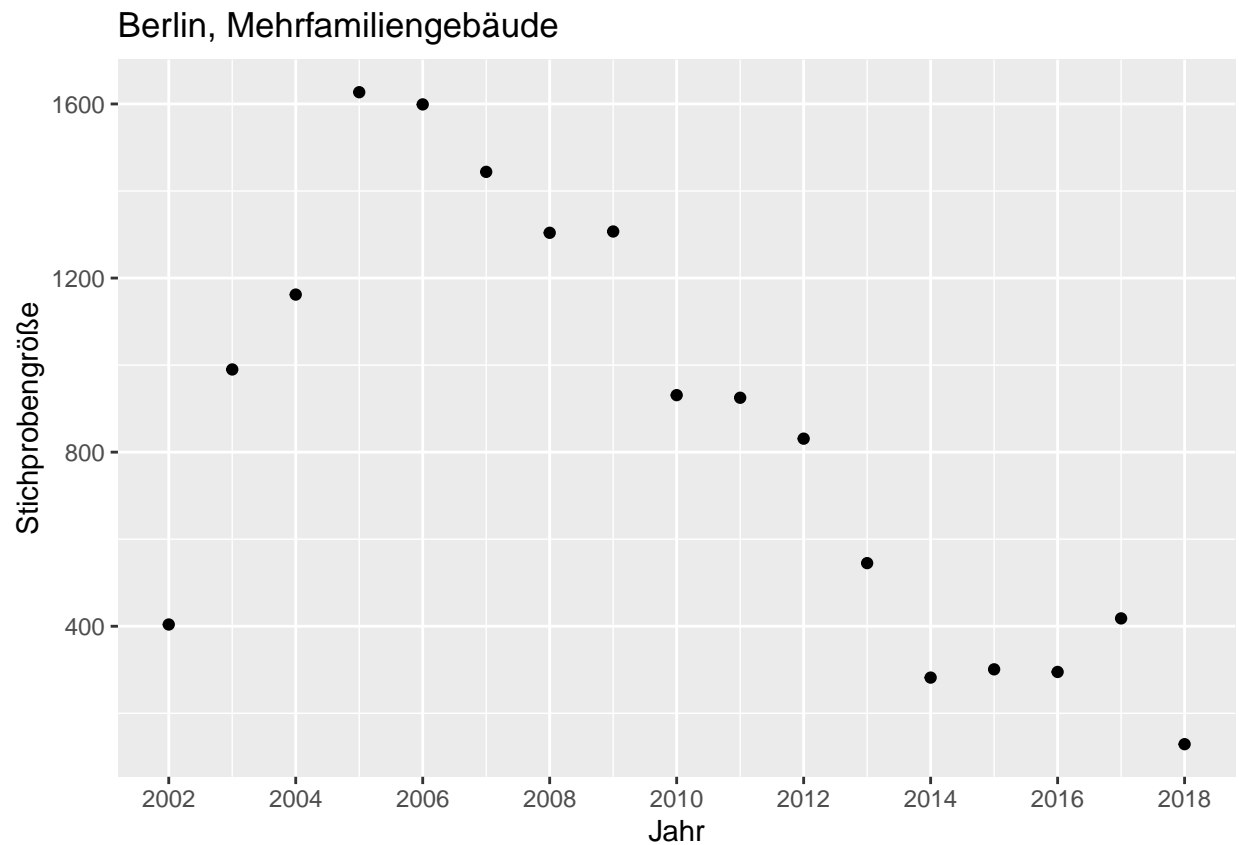
| | | |
|-------|------|----------|
| ## 20 | 2021 | 739.5414 |
| ## 21 | 2022 | 729.2418 |
| ## 22 | 2023 | 718.7593 |
| ## 23 | 2024 | 708.0938 |
| ## 24 | 2025 | 697.2453 |
| ## 25 | 2026 | 686.2138 |
| ## 26 | 2027 | 674.9993 |
| ## 27 | 2028 | 663.6019 |
| ## 28 | 2029 | 652.0214 |
| ## 29 | 2030 | 640.2579 |

2.5. Diskussion

3. Alle Stadtbezirke, CO2-Emission aus Beheizung, Mehrfamiliengebäude

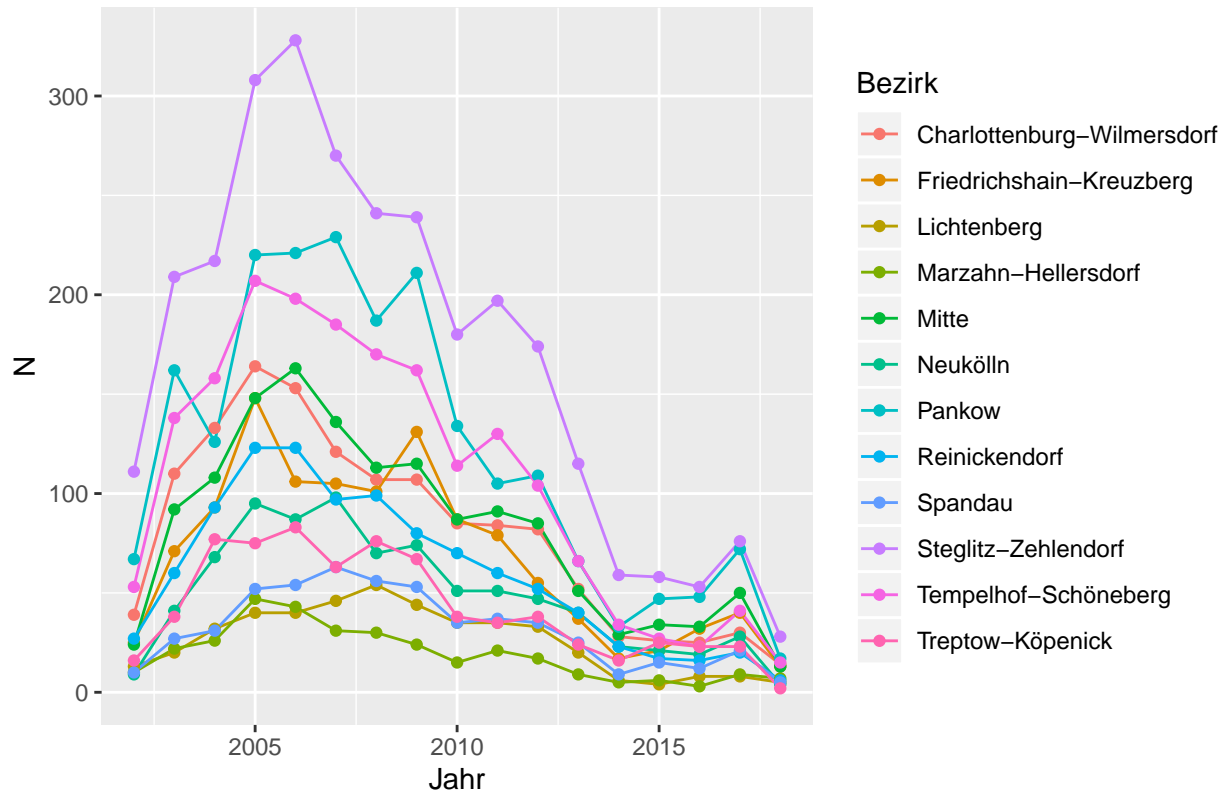
3.1. Absolute Zahlen

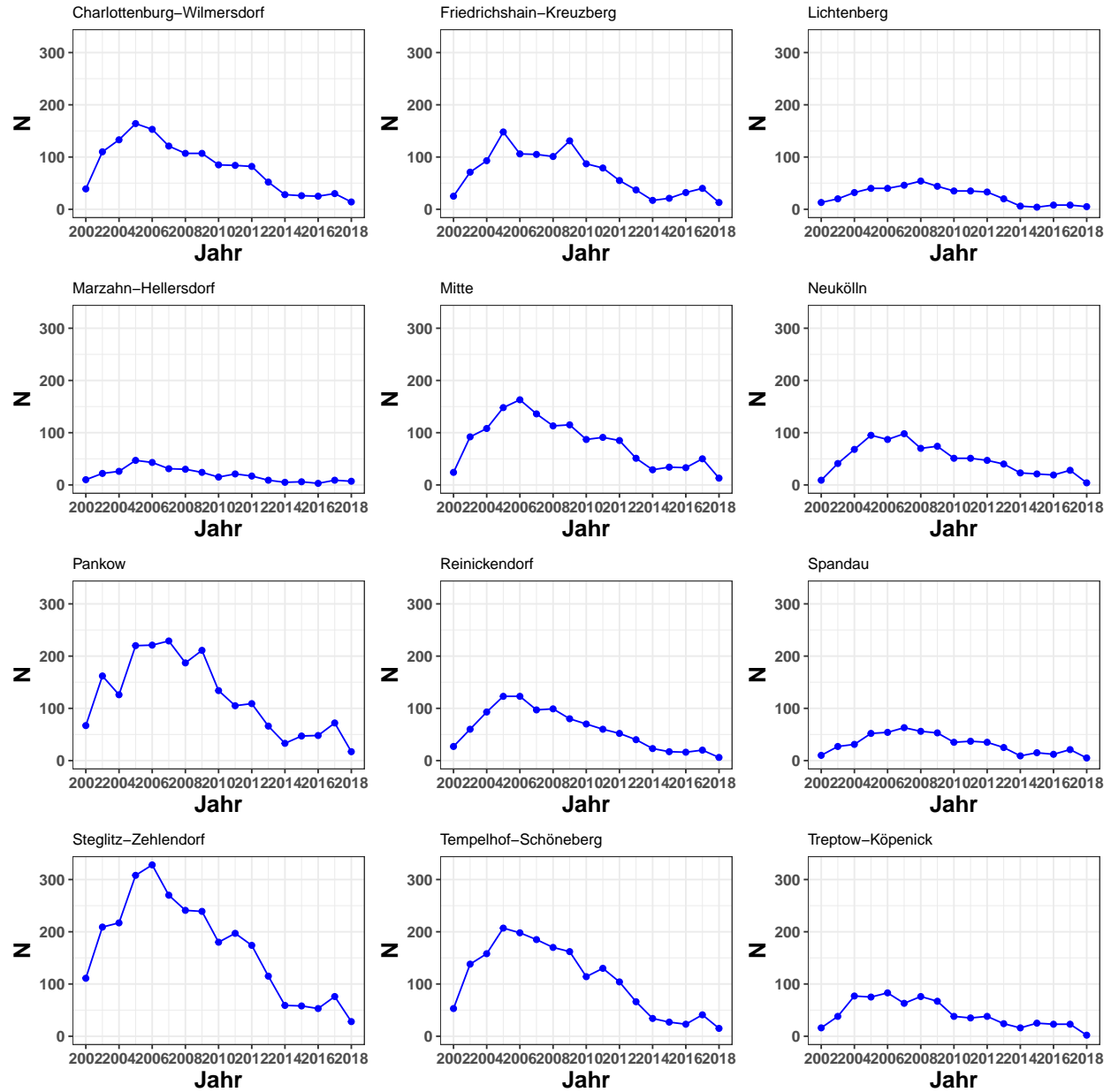
Sample Size



| Berlin, Mehrfamiliengebäude, Stichprobengröße | |
|--|-------|
| Jahr | N |
| 2002 | 404 |
| 2003 | 990 |
| 2004 | 1162 |
| 2005 | 1627 |
| 2006 | 1599 |
| 2007 | 1444 |
| 2008 | 1304 |
| 2009 | 1307 |
| 2010 | 931 |
| 2011 | 925 |
| 2012 | 831 |
| 2013 | 545 |
| 2014 | 282 |
| 2015 | 301 |
| 2016 | 295 |
| 2017 | 418 |
| 2018 | 129 |
| Gesamt | 14494 |

Stichprobengröße, Mehrfamiliengebäude



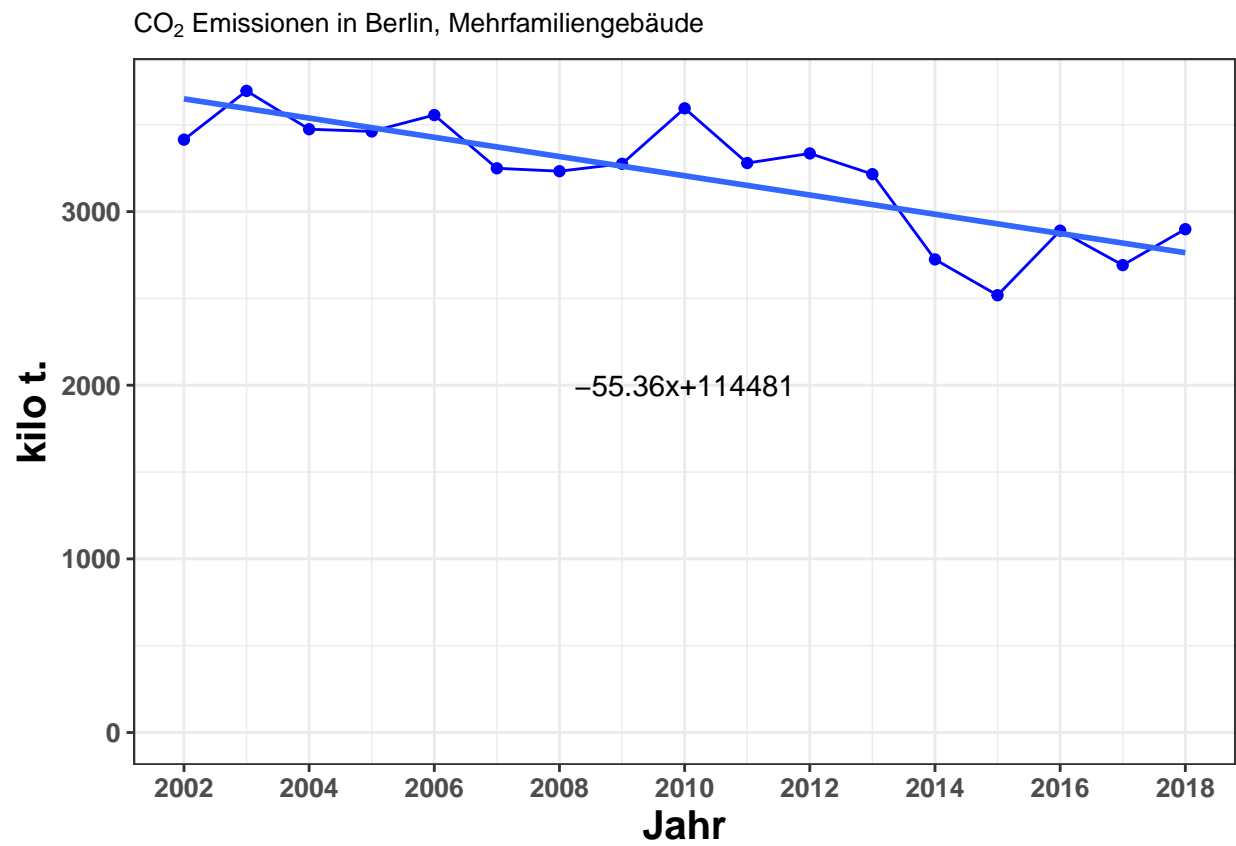


| Berlin, Mehrfamiliengebäude, Stichprobengröße nach Bezirken | | | | | | |
|---|-------------------------------|------------------------------|-------------|-------------------------|-------|----------|
| Jahr | Charlottenburg- Wilmerdorf | Friedrichshain- Kreuzberg | Lichtenberg | Marzahn- Hellersdorf | Mitte | Neukölln |
| 2002 | 39 | 25 | 13 | 10 | 24 | 9 |
| 2003 | 110 | 71 | 20 | 22 | 92 | 41 |
| 2004 | 133 | 93 | 32 | 26 | 108 | 68 |
| 2005 | 164 | 148 | 40 | 47 | 148 | 95 |
| 2006 | 153 | 106 | 40 | 43 | 163 | 87 |
| 2007 | 121 | 105 | 46 | 31 | 136 | 98 |
| 2008 | 107 | 101 | 54 | 30 | 113 | 70 |
| 2009 | 107 | 131 | 44 | 24 | 115 | 74 |
| 2010 | 85 | 87 | 35 | 15 | 87 | 51 |
| 2011 | 84 | 79 | 35 | 21 | 91 | 51 |
| 2012 | 82 | 55 | 33 | 17 | 85 | 47 |
| 2013 | 52 | 37 | 20 | 9 | 51 | 40 |
| 2014 | 28 | 17 | 6 | 5 | 29 | 23 |
| 2015 | 26 | 21 | 4 | 6 | 34 | 21 |
| 2016 | 25 | 32 | 8 | 3 | 33 | 19 |
| 2017 | 30 | 40 | 8 | 9 | 50 | 28 |
| 2018 | 14 | 13 | 5 | 7 | 13 | 4 |

| Berlin, Mehrfamiliengebäude, Stichprobengröße nach Bezirken | | | | | | |
|---|--------|---------------|---------|-------------------------|--------------------------|----------------------|
| Jahr | Pankow | Reinickendorf | Spandau | Steglitz- Zehlendorf | Tempelhof- Schöneberg | Treptow- Köpenick |
| 2002 | 67 | 27 | 10 | 111 | 53 | 16 |
| 2003 | 162 | 60 | 27 | 209 | 138 | 38 |
| 2004 | 126 | 93 | 31 | 217 | 158 | 77 |
| 2005 | 220 | 123 | 52 | 308 | 207 | 75 |
| 2006 | 221 | 123 | 54 | 328 | 198 | 83 |
| 2007 | 229 | 97 | 63 | 270 | 185 | 63 |
| 2008 | 187 | 99 | 56 | 241 | 170 | 76 |
| 2009 | 211 | 80 | 53 | 239 | 162 | 67 |
| 2010 | 134 | 70 | 35 | 180 | 114 | 38 |
| 2011 | 105 | 60 | 37 | 197 | 130 | 35 |
| 2012 | 109 | 52 | 35 | 174 | 104 | 38 |
| 2013 | 66 | 40 | 25 | 115 | 66 | 24 |
| 2014 | 33 | 23 | 9 | 59 | 34 | 16 |
| 2015 | 47 | 17 | 15 | 58 | 27 | 25 |
| 2016 | 48 | 16 | 12 | 53 | 23 | 23 |
| 2017 | 72 | 20 | 21 | 76 | 41 | 23 |
| 2018 | 17 | 6 | 5 | 28 | 15 | 2 |

| Berlin, Mehrfamiliengebäude, Stichprobengröße nach Energieträgern | | | | | | | |
|---|--------|-------|------------|--------|-------------|-------|--------|
| Jahr | Erdgas | Wärme | Flüssiggas | Heizöl | Holzpellets | Strom | Gesamt |
| 2002 | 180 | 69 | 0 | 155 | 0 | 0 | 404 |
| 2003 | 340 | 172 | 0 | 478 | 0 | 0 | 990 |
| 2004 | 429 | 165 | 1 | 567 | 0 | 0 | 1162 |
| 2005 | 680 | 239 | 2 | 705 | 1 | 0 | 1627 |
| 2006 | 699 | 223 | 2 | 674 | 1 | 0 | 1599 |
| 2007 | 609 | 261 | 2 | 571 | 1 | 0 | 1444 |
| 2008 | 550 | 229 | 4 | 520 | 1 | 0 | 1304 |
| 2009 | 555 | 296 | 8 | 446 | 1 | 1 | 1307 |
| 2010 | 317 | 205 | 2 | 402 | 4 | 1 | 931 |
| 2011 | 315 | 189 | 4 | 408 | 5 | 4 | 925 |
| 2012 | 292 | 149 | 5 | 378 | 3 | 4 | 831 |
| 2013 | 211 | 100 | 3 | 227 | 2 | 2 | 545 |
| 2014 | 110 | 59 | 0 | 110 | 0 | 3 | 282 |
| 2015 | 141 | 80 | 0 | 78 | 0 | 2 | 301 |
| 2016 | 137 | 79 | 0 | 74 | 2 | 3 | 295 |
| 2017 | 189 | 120 | 0 | 94 | 4 | 11 | 418 |
| 2018 | 60 | 27 | 0 | 36 | 3 | 3 | 129 |

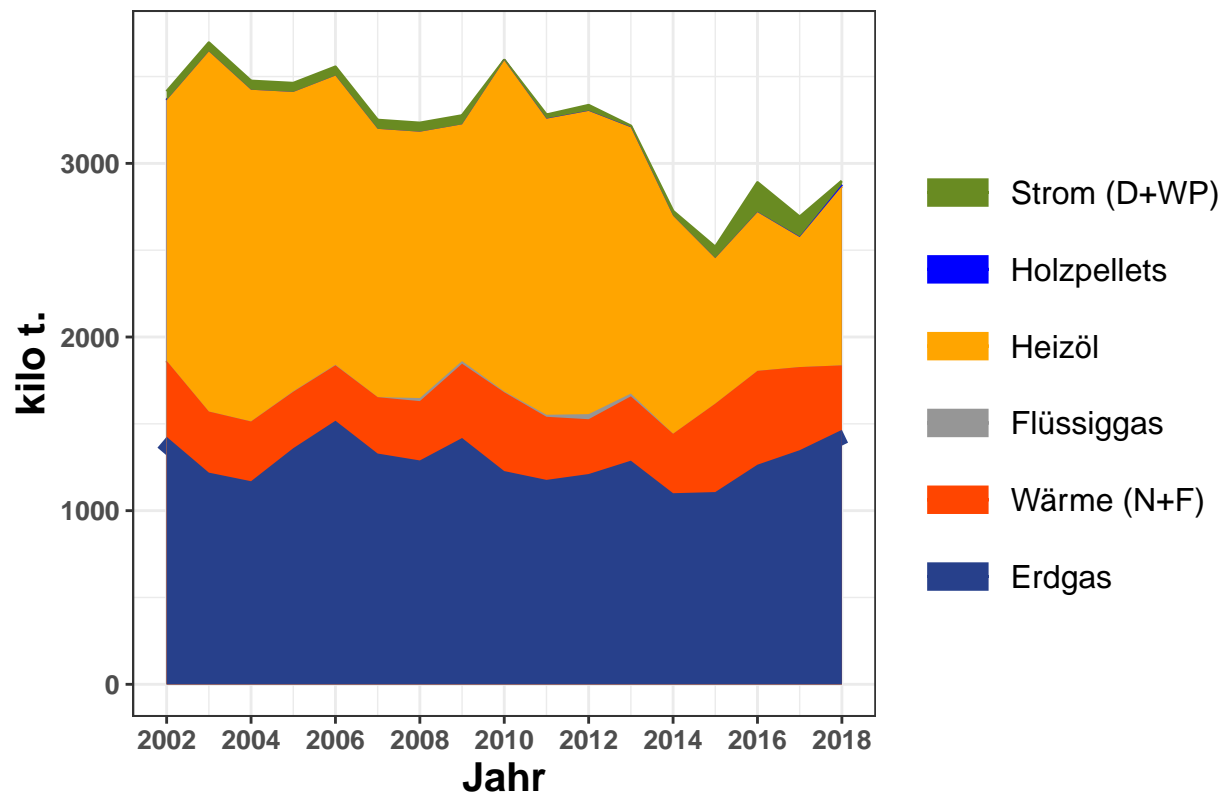
3.1.1. Berlin, Mehrfamiliengebäude, CO₂-Emission aus der Beheizung von Wohnraum 2002 - 2018 in 1.000 t



| Berlin, Mehramiliengebäude CO2 Emissionen | |
|--|---------|
| Jahr | kilo t. |
| 2002 | 3414.16 |
| 2003 | 3695 |
| 2004 | 3474.29 |
| 2005 | 3461.55 |
| 2006 | 3555.86 |
| 2007 | 3249.18 |
| 2008 | 3232.59 |
| 2009 | 3275.11 |
| 2010 | 3594.56 |
| 2011 | 3279.47 |
| 2012 | 3334.73 |
| 2013 | 3215.51 |
| 2014 | 2724.47 |
| 2015 | 2518.21 |
| 2016 | 2890.04 |
| 2017 | 2691.65 |
| 2018 | 2898.72 |

- Now split by ET

CO₂ Emissionen in Berlin, Mehrfamiliengebäude, nach Energieträgern

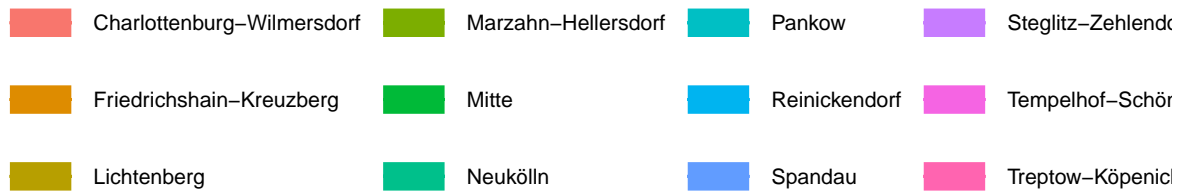
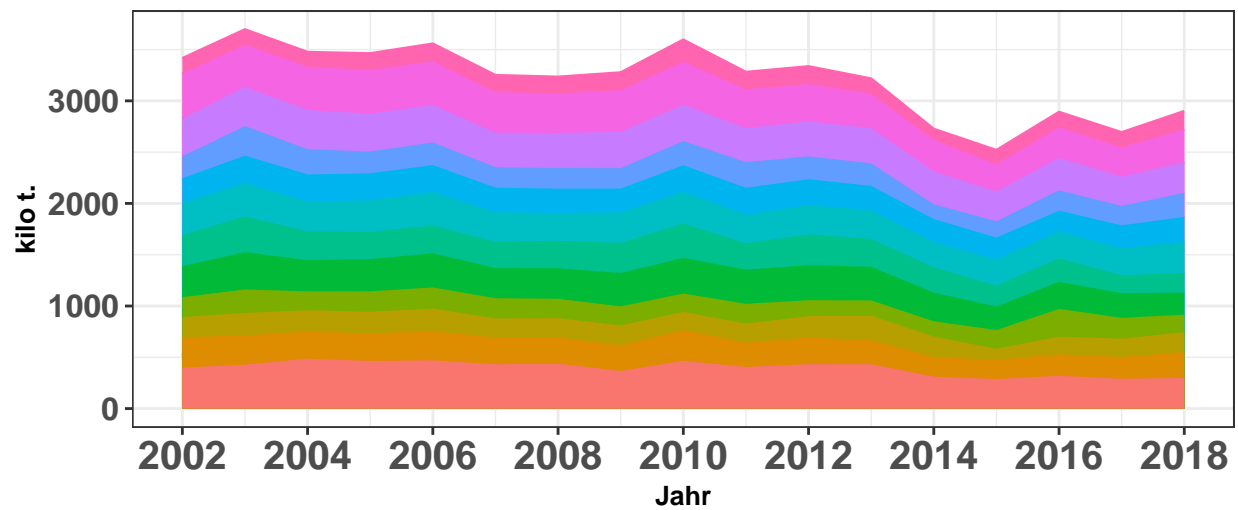


| Berlin, Mehrfamiliengebäude, CO2 Emissionen nach Energieträgern (kilo t.) | | | | | | | |
|---|---------|--------|------------|---------|-------------|--------|---------|
| Jahr | Erdgas | Wärme | Flüssiggas | Heizöl | Holzpellets | Strom | Gesamt |
| 2002 | 1425.31 | 437.14 | 0 | 1501.39 | 0 | 50.33 | 3414.16 |
| 2003 | 1219.07 | 351.75 | 0 | 2073.85 | 0 | 50.33 | 3695 |
| 2004 | 1169.55 | 344.02 | 0.63 | 1909.76 | 0 | 50.33 | 3474.29 |
| 2005 | 1359.73 | 325.02 | 2.97 | 1723.46 | 0.05 | 50.33 | 3461.55 |
| 2006 | 1517.86 | 319.29 | 3.16 | 1665.17 | 0.06 | 50.33 | 3555.86 |
| 2007 | 1328.91 | 324.67 | 0.29 | 1544.93 | 0.06 | 50.33 | 3249.18 |
| 2008 | 1289.19 | 341.75 | 17.6 | 1533.66 | 0.07 | 50.33 | 3232.59 |
| 2009 | 1418.33 | 427.78 | 15.39 | 1363.19 | 0.09 | 50.33 | 3275.11 |
| 2010 | 1227.91 | 453.72 | 5.02 | 1906.3 | 0.45 | 1.15 | 3594.56 |
| 2011 | 1177.27 | 363.33 | 11.43 | 1705.24 | 1.46 | 20.74 | 3279.47 |
| 2012 | 1210.89 | 315.73 | 29.32 | 1746.16 | 1.24 | 31.39 | 3334.73 |
| 2013 | 1287.86 | 370.6 | 15.78 | 1533.46 | 1.5 | 6.31 | 3215.51 |
| 2014 | 1100.41 | 342.3 | 0 | 1255.85 | 0 | 25.92 | 2724.47 |
| 2015 | 1107.04 | 509.09 | 0 | 837.85 | 0 | 64.22 | 2518.21 |
| 2016 | 1264.8 | 540.29 | 0 | 914.03 | 1.21 | 169.71 | 2890.04 |
| 2017 | 1348.23 | 478.69 | 0 | 748.65 | 2.74 | 113.35 | 2691.65 |
| 2018 | 1465.32 | 371.32 | 0 | 1031.47 | 10.47 | 20.14 | 2898.72 |

3.1.2. Stadtbezirke, Mehrfamiliengebäude, CO2-Emissionen aus der Beheizung von Wohnraum 2002 - 2018 summiert in 1.000 t

- Here CO2 emissions split by the bezirke

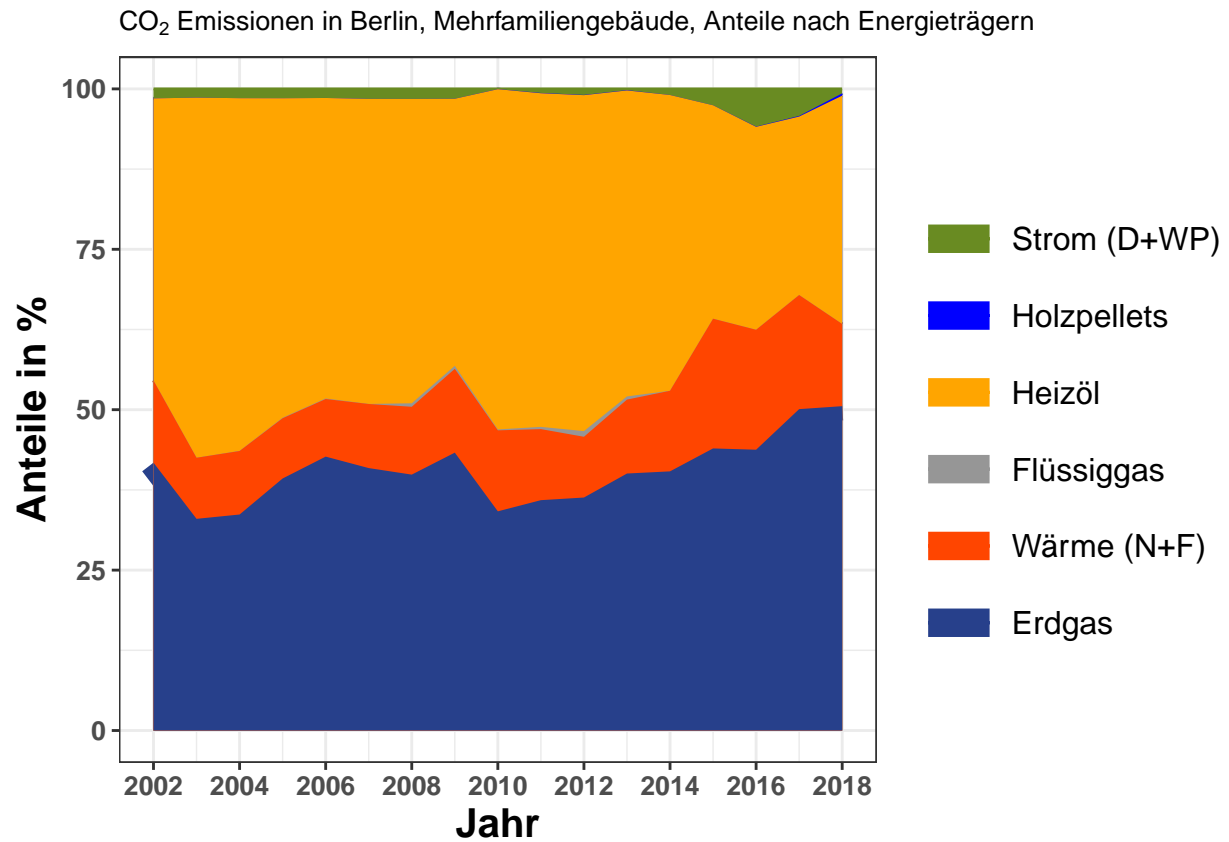
CO₂ Emissionen in Berlin, Mehrfamiliengebäude, nach Bezirk



| Berlin, Mehrfamiliengebäude, CO ₂ Emissionen nach Bezirken (kilo t.) | | | | | | |
|---|----------------------------|--------------------------|-------------|---------------------|--------|----------|
| Jahr | Charlottenburg-Wilmersdorf | Friedrichshain-Kreuzberg | Lichtenberg | Marzahn-Hellersdorf | Mitte | Neukölln |
| 2002 | 399.43 | 294.59 | 197.83 | 194.96 | 299.82 | 305.78 |
| 2003 | 428.76 | 285.26 | 218.92 | 228.73 | 363.45 | 347.62 |
| 2004 | 487.37 | 265.49 | 206.02 | 184.14 | 303.12 | 280.78 |
| 2005 | 464.26 | 267.37 | 212.64 | 199.27 | 313.27 | 265.82 |
| 2006 | 470.93 | 285.26 | 219.04 | 205.77 | 332.82 | 271.2 |
| 2007 | 432.82 | 258.62 | 187.51 | 197.4 | 293.03 | 256.79 |
| 2008 | 437.82 | 256.16 | 188.54 | 188.26 | 297.58 | 267.3 |
| 2009 | 367.08 | 250.57 | 193.44 | 185.37 | 325.34 | 293.85 |
| 2010 | 466.42 | 299.68 | 176.74 | 179.27 | 346.5 | 335.43 |
| 2011 | 406.04 | 236.23 | 186.28 | 192.84 | 333.26 | 257.14 |
| 2012 | 433.23 | 259.36 | 208.88 | 155.65 | 339.54 | 301.27 |
| 2013 | 432.69 | 234.46 | 237.59 | 150.15 | 327.67 | 270.82 |
| 2014 | 312.06 | 190.28 | 198.86 | 150.35 | 277.66 | 248.75 |
| 2015 | 288.55 | 189.87 | 105.33 | 182.14 | 229.87 | 203.68 |
| 2016 | 319.92 | 208.94 | 172.52 | 270.98 | 262.89 | 228.03 |
| 2017 | 291.2 | 211.21 | 178.96 | 203.64 | 238.93 | 176.87 |
| 2018 | 299.49 | 250.64 | 195.64 | 169.99 | 215.03 | 189.59 |

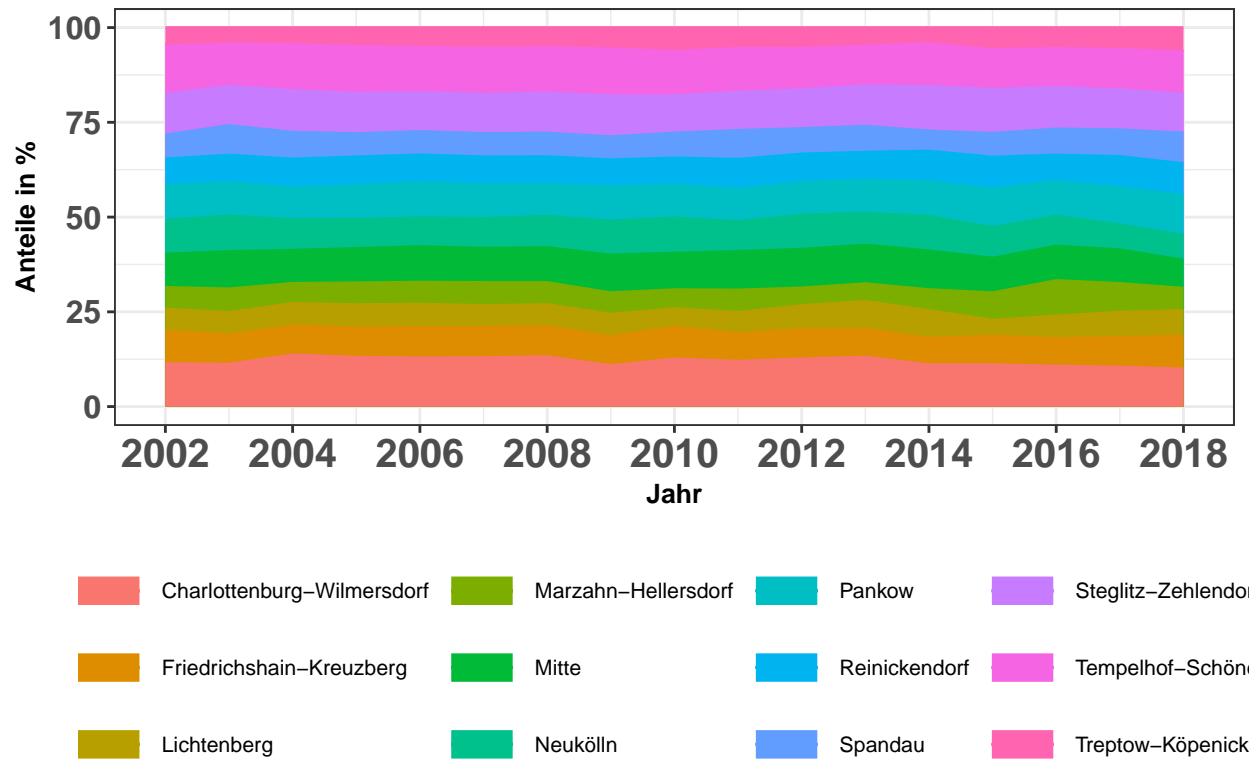
| Berlin, Mehrfamiliengebäude, CO2 Emissionen nach Bezirken (kilo t.) | | | | | | |
|---|--------|---------------|---------|-------------------------|--------------------------|----------------------|
| Jahr | Pankow | Reinickendorf | Spandau | Steglitz– Zehlendorf | Tempelhof– Schöneberg | Treptow– Köpenick |
| 2002 | 314.54 | 237.62 | 214.76 | 366.47 | 438.43 | 149.94 |
| 2003 | 326.16 | 266.48 | 288.97 | 381.31 | 412.23 | 147.11 |
| 2004 | 292.02 | 263.66 | 245.51 | 382.86 | 421.17 | 142.13 |
| 2005 | 308.13 | 262.75 | 212.73 | 368.52 | 427.66 | 159.14 |
| 2006 | 328.42 | 260.95 | 220.28 | 364.9 | 424.86 | 171.43 |
| 2007 | 289.42 | 237.37 | 201.01 | 336.07 | 394.64 | 164.49 |
| 2008 | 271.86 | 236.43 | 201.46 | 341.73 | 386.57 | 158.9 |
| 2009 | 297.19 | 231.67 | 199.73 | 353.84 | 405.74 | 171.28 |
| 2010 | 310.63 | 257.44 | 236.44 | 352.74 | 419.75 | 213.5 |
| 2011 | 280.79 | 259.48 | 250.23 | 331.07 | 379.26 | 166.85 |
| 2012 | 286.41 | 250.76 | 223.7 | 341.81 | 362.86 | 171.25 |
| 2013 | 278.16 | 238.86 | 220.14 | 342.77 | 337.64 | 144.56 |
| 2014 | 247.71 | 221.32 | 144.79 | 319.25 | 308.48 | 104.97 |
| 2015 | 256.24 | 211.09 | 158.5 | 292.58 | 263.9 | 136.46 |
| 2016 | 264.6 | 200.92 | 199.23 | 315.77 | 299.15 | 147.1 |
| 2017 | 264.75 | 220.51 | 189.81 | 284.52 | 286.11 | 145.14 |
| 2018 | 305.21 | 243.43 | 234.57 | 297.03 | 322.43 | 175.69 |

3.1.3. Stadtbezirke, Mehrfamiliengebäude, CO₂-Emissionen aus der Beheizung von Wohnraum 2002 - 2018 in Prozent



| Berlin, Mehrfamiliengebäude, CO2 Emissionen, Anteile nach Energieträgern (%) | | | | | | |
|--|--------|-------|------------|--------|-------------|-------|
| Jahr | Erdgas | Wärme | Flüssiggas | Heizöl | Holzpellets | Strom |
| 2002 | 41.75 | 12.8 | 0 | 43.98 | 0 | 1.47 |
| 2003 | 32.99 | 9.52 | 0 | 56.13 | 0 | 1.36 |
| 2004 | 33.66 | 9.9 | 0.02 | 54.97 | 0 | 1.45 |
| 2005 | 39.28 | 9.39 | 0.09 | 49.79 | 0 | 1.45 |
| 2006 | 42.69 | 8.98 | 0.09 | 46.83 | 0 | 1.42 |
| 2007 | 40.9 | 9.99 | 0.01 | 47.55 | 0 | 1.55 |
| 2008 | 39.88 | 10.57 | 0.54 | 47.44 | 0 | 1.56 |
| 2009 | 43.31 | 13.06 | 0.47 | 41.62 | 0 | 1.54 |
| 2010 | 34.16 | 12.62 | 0.14 | 53.03 | 0.01 | 0.03 |
| 2011 | 35.9 | 11.08 | 0.35 | 52 | 0.04 | 0.63 |
| 2012 | 36.31 | 9.47 | 0.88 | 52.36 | 0.04 | 0.94 |
| 2013 | 40.05 | 11.53 | 0.49 | 47.69 | 0.05 | 0.2 |
| 2014 | 40.39 | 12.56 | 0 | 46.09 | 0 | 0.95 |
| 2015 | 43.96 | 20.22 | 0 | 33.27 | 0 | 2.55 |
| 2016 | 43.76 | 18.69 | 0 | 31.63 | 0.04 | 5.87 |
| 2017 | 50.09 | 17.78 | 0 | 27.81 | 0.1 | 4.21 |
| 2018 | 50.55 | 12.81 | 0 | 35.58 | 0.36 | 0.69 |

CO₂ Emissionen in Berlin, Mehrfamiliengebäude, Anteile nach Bezirk



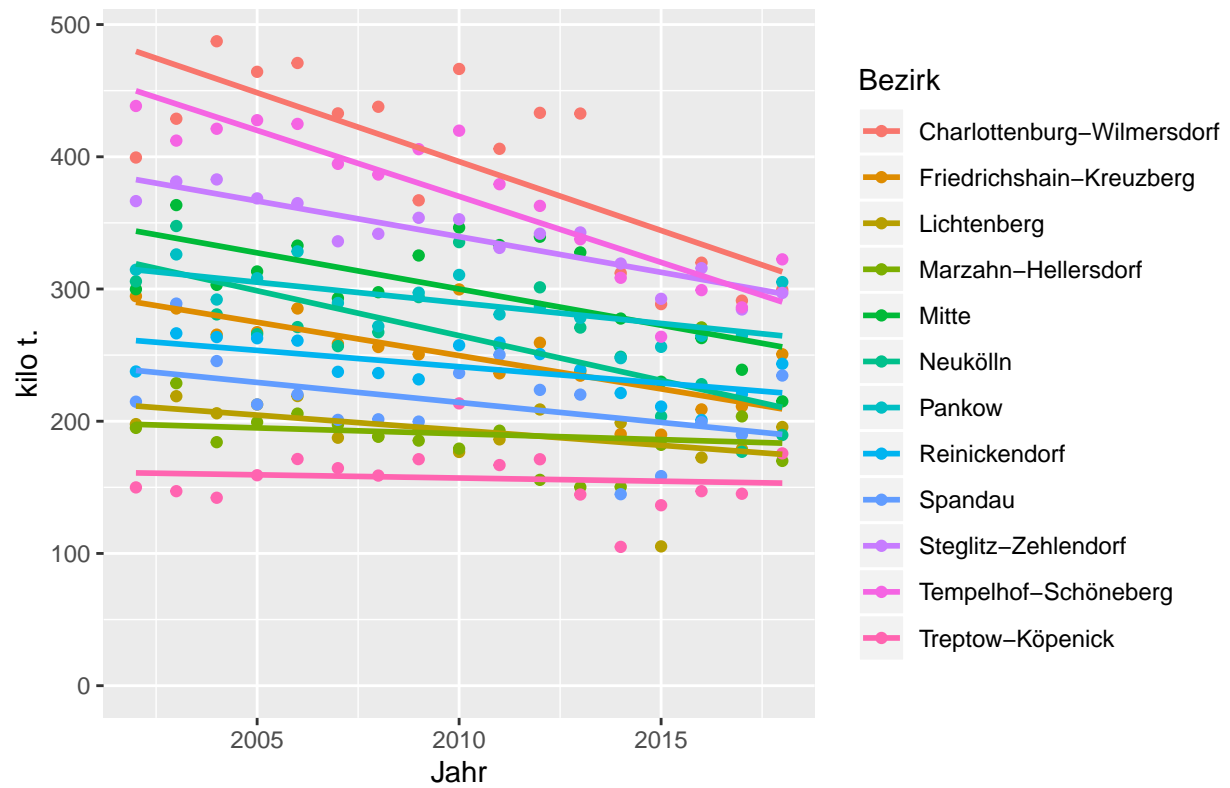
| Berlin, Mehrfamiliengebäude, CO ₂ Emissionen, Anteile nach Bezirken (%) | | | | | | |
|--|----------------------------|--------------------------|-------------|---------------------|-------|----------|
| Jahr | Charlottenburg-Wilmersdorf | Friedrichshain-Kreuzberg | Lichtenberg | Marzahn-Hellersdorf | Mitte | Neukölln |
| 2002 | 11.7 | 8.63 | 5.79 | 5.71 | 8.78 | 8.96 |
| 2003 | 11.6 | 7.72 | 5.92 | 6.19 | 9.84 | 9.41 |
| 2004 | 14.03 | 7.64 | 5.93 | 5.3 | 8.72 | 8.08 |
| 2005 | 13.41 | 7.72 | 6.14 | 5.76 | 9.05 | 7.68 |
| 2006 | 13.24 | 8.02 | 6.16 | 5.79 | 9.36 | 7.63 |
| 2007 | 13.32 | 7.96 | 5.77 | 6.08 | 9.02 | 7.9 |
| 2008 | 13.54 | 7.92 | 5.83 | 5.82 | 9.21 | 8.27 |
| 2009 | 11.21 | 7.65 | 5.91 | 5.66 | 9.93 | 8.97 |
| 2010 | 12.98 | 8.34 | 4.92 | 4.99 | 9.64 | 9.33 |
| 2011 | 12.38 | 7.2 | 5.68 | 5.88 | 10.16 | 7.84 |
| 2012 | 12.99 | 7.78 | 6.26 | 4.67 | 10.18 | 9.03 |
| 2013 | 13.46 | 7.29 | 7.39 | 4.67 | 10.19 | 8.42 |
| 2014 | 11.45 | 6.98 | 7.3 | 5.52 | 10.19 | 9.13 |
| 2015 | 11.46 | 7.54 | 4.18 | 7.23 | 9.13 | 8.09 |
| 2016 | 11.07 | 7.23 | 5.97 | 9.38 | 9.1 | 7.89 |
| 2017 | 10.82 | 7.85 | 6.65 | 7.57 | 8.88 | 6.57 |
| 2018 | 10.33 | 8.65 | 6.75 | 5.86 | 7.42 | 6.54 |

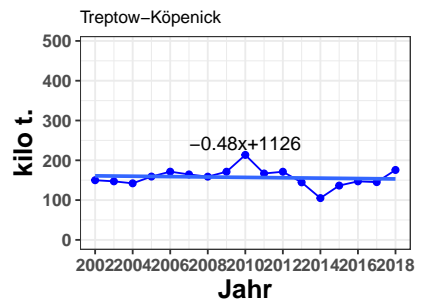
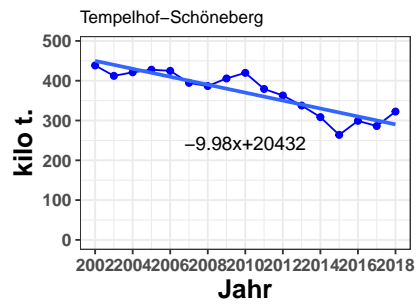
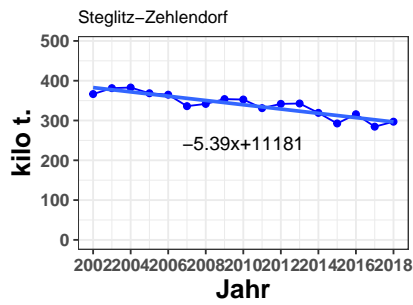
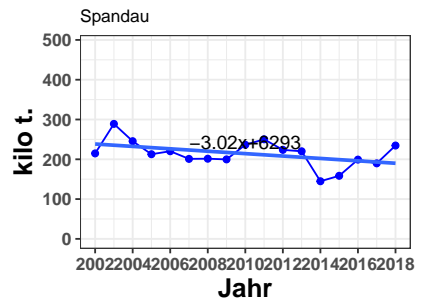
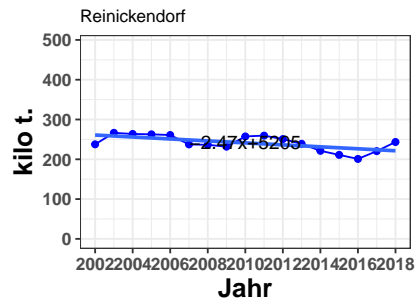
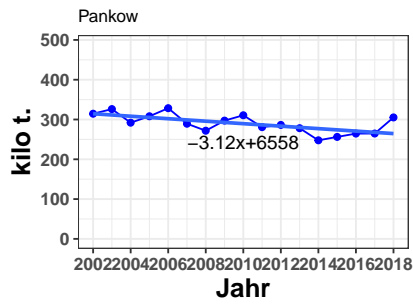
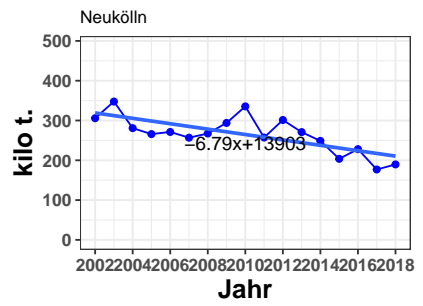
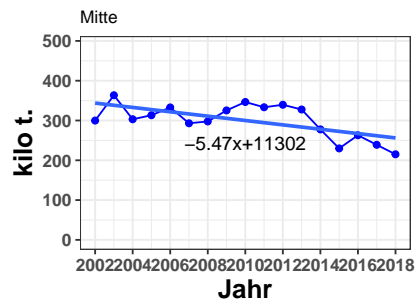
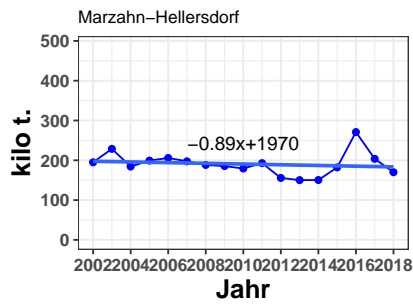
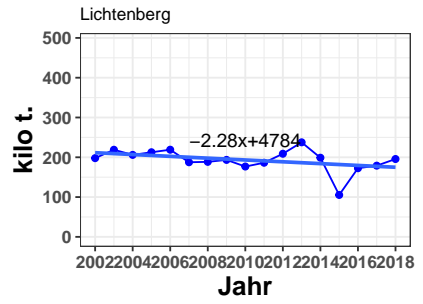
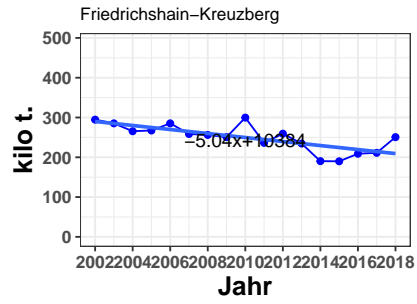
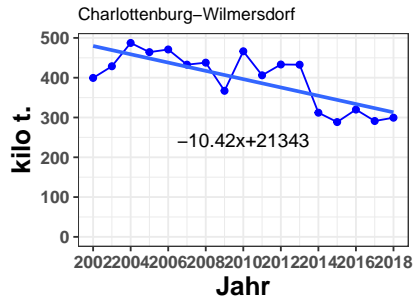
| Berlin, Mehrfamiliengebäude, CO2 Emissionen, Anteile nach Bezirken (%) | | | | | | |
|--|--------|---------------|---------|---------------------|----------------------|------------------|
| Jahr | Pankow | Reinickendorf | Spandau | Steglitz–Zehlendorf | Tempelhof–Schöneberg | Treptow–Köpenick |
| 2002 | 9.21 | 6.96 | 6.29 | 10.73 | 12.84 | 4.39 |
| 2003 | 8.83 | 7.21 | 7.82 | 10.32 | 11.16 | 3.98 |
| 2004 | 8.41 | 7.59 | 7.07 | 11.02 | 12.12 | 4.09 |
| 2005 | 8.9 | 7.59 | 6.15 | 10.65 | 12.35 | 4.6 |
| 2006 | 9.24 | 7.34 | 6.19 | 10.26 | 11.95 | 4.82 |
| 2007 | 8.91 | 7.31 | 6.19 | 10.34 | 12.15 | 5.06 |
| 2008 | 8.41 | 7.31 | 6.23 | 10.57 | 11.96 | 4.92 |
| 2009 | 9.07 | 7.07 | 6.1 | 10.8 | 12.39 | 5.23 |
| 2010 | 8.64 | 7.16 | 6.58 | 9.81 | 11.68 | 5.94 |
| 2011 | 8.56 | 7.91 | 7.63 | 10.1 | 11.56 | 5.09 |
| 2012 | 8.59 | 7.52 | 6.71 | 10.25 | 10.88 | 5.14 |
| 2013 | 8.65 | 7.43 | 6.85 | 10.66 | 10.5 | 4.5 |
| 2014 | 9.09 | 8.12 | 5.31 | 11.72 | 11.32 | 3.85 |
| 2015 | 10.18 | 8.38 | 6.29 | 11.62 | 10.48 | 5.42 |
| 2016 | 9.16 | 6.95 | 6.89 | 10.93 | 10.35 | 5.09 |
| 2017 | 9.84 | 8.19 | 7.05 | 10.57 | 10.63 | 5.39 |
| 2018 | 10.53 | 8.4 | 8.09 | 10.25 | 11.12 | 6.06 |

3.1.4. Stadtbezirke, Mehrfamiliengebäude, CO2-Emissionen aus der Beheizung von Wohnraum 2002 - 2018 in 1.000 t

(Eine Grafik: co2 Emissionen je Bezirk und Jahr) Co2 emissions of all city districts by year in a single graph. (year on x-axis and co2 emission on y-axis). One Graph: Co2 emissions of all city districts by year

CO₂ Emissionen von Stadtbezirken, Mehrfamiliengebäude



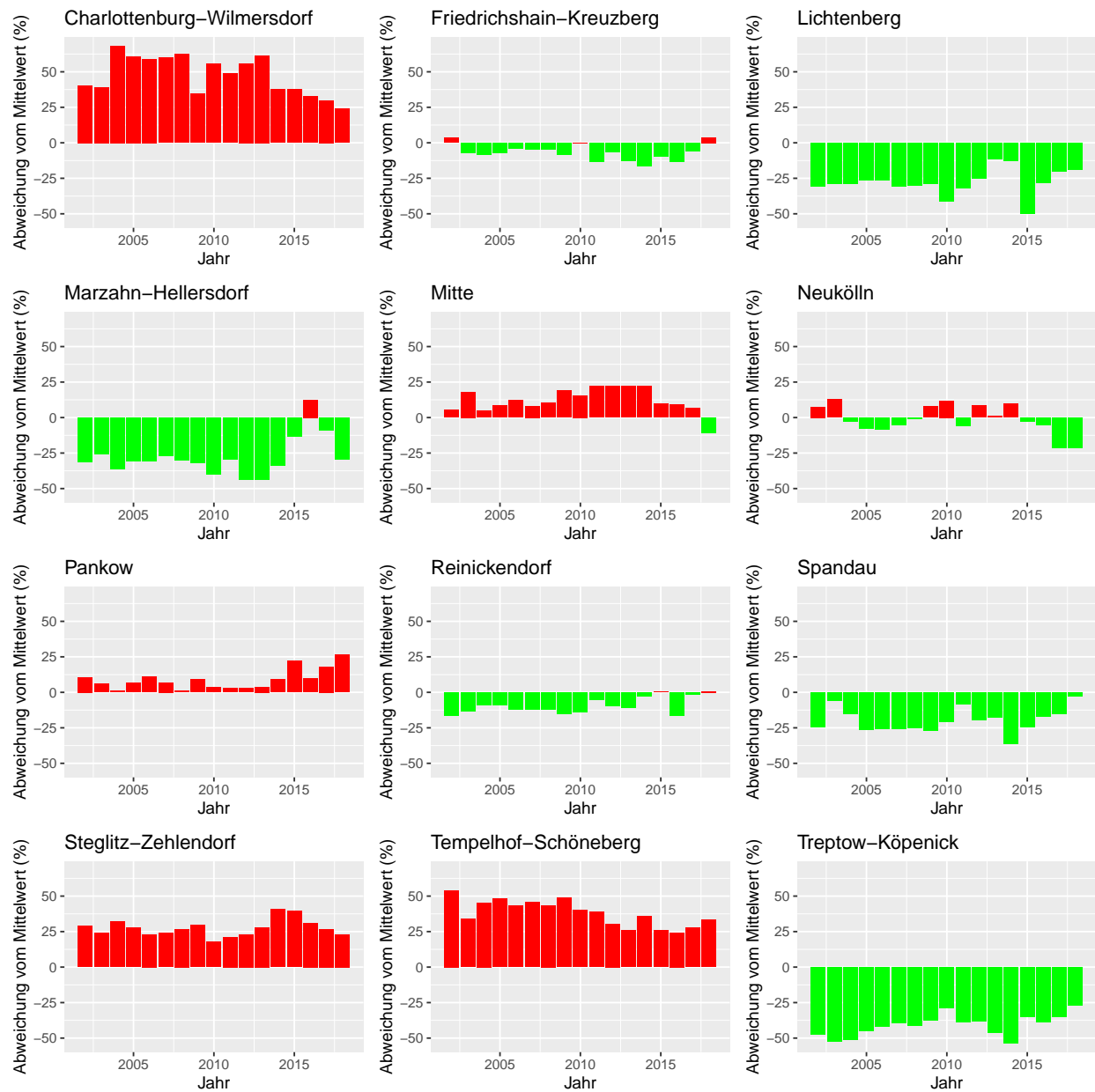


| Berlin, Mehrfamiliengebäude, CO2 Emissionen nach Bezirken (kilo t.) | | | | | | |
|---|-------------------------------|------------------------------|-------------|-------------------------|--------|----------|
| Jahr | Charlottenburg- Wilmerdorf | Friedrichshain- Kreuzberg | Lichtenberg | Marzahn- Hellersdorf | Mitte | Neukölln |
| 2002 | 399.43 | 294.59 | 197.83 | 194.96 | 299.82 | 305.78 |
| 2003 | 428.76 | 285.26 | 218.92 | 228.73 | 363.45 | 347.62 |
| 2004 | 487.37 | 265.49 | 206.02 | 184.14 | 303.12 | 280.78 |
| 2005 | 464.26 | 267.37 | 212.64 | 199.27 | 313.27 | 265.82 |
| 2006 | 470.93 | 285.26 | 219.04 | 205.77 | 332.82 | 271.2 |
| 2007 | 432.82 | 258.62 | 187.51 | 197.4 | 293.03 | 256.79 |
| 2008 | 437.82 | 256.16 | 188.54 | 188.26 | 297.58 | 267.3 |
| 2009 | 367.08 | 250.57 | 193.44 | 185.37 | 325.34 | 293.85 |
| 2010 | 466.42 | 299.68 | 176.74 | 179.27 | 346.5 | 335.43 |
| 2011 | 406.04 | 236.23 | 186.28 | 192.84 | 333.26 | 257.14 |
| 2012 | 433.23 | 259.36 | 208.88 | 155.65 | 339.54 | 301.27 |
| 2013 | 432.69 | 234.46 | 237.59 | 150.15 | 327.67 | 270.82 |
| 2014 | 312.06 | 190.28 | 198.86 | 150.35 | 277.66 | 248.75 |
| 2015 | 288.55 | 189.87 | 105.33 | 182.14 | 229.87 | 203.68 |
| 2016 | 319.92 | 208.94 | 172.52 | 270.98 | 262.89 | 228.03 |
| 2017 | 291.2 | 211.21 | 178.96 | 203.64 | 238.93 | 176.87 |
| 2018 | 299.49 | 250.64 | 195.64 | 169.99 | 215.03 | 189.59 |

| Berlin, Mehrfamiliengebäude, CO2 Emissionen nach Bezirken (kilo t.) | | | | | | |
|---|--------|---------------|---------|-------------------------|--------------------------|----------------------|
| Jahr | Pankow | Reinickendorf | Spandau | Steglitz- Zehlendorf | Tempelhof- Schöneberg | Treptow- Köpenick |
| 2002 | 314.54 | 237.62 | 214.76 | 366.47 | 438.43 | 149.94 |
| 2003 | 326.16 | 266.48 | 288.97 | 381.31 | 412.23 | 147.11 |
| 2004 | 292.02 | 263.66 | 245.51 | 382.86 | 421.17 | 142.13 |
| 2005 | 308.13 | 262.75 | 212.73 | 368.52 | 427.66 | 159.14 |
| 2006 | 328.42 | 260.95 | 220.28 | 364.9 | 424.86 | 171.43 |
| 2007 | 289.42 | 237.37 | 201.01 | 336.07 | 394.64 | 164.49 |
| 2008 | 271.86 | 236.43 | 201.46 | 341.73 | 386.57 | 158.9 |
| 2009 | 297.19 | 231.67 | 199.73 | 353.84 | 405.74 | 171.28 |
| 2010 | 310.63 | 257.44 | 236.44 | 352.74 | 419.75 | 213.5 |
| 2011 | 280.79 | 259.48 | 250.23 | 331.07 | 379.26 | 166.85 |
| 2012 | 286.41 | 250.76 | 223.7 | 341.81 | 362.86 | 171.25 |
| 2013 | 278.16 | 238.86 | 220.14 | 342.77 | 337.64 | 144.56 |
| 2014 | 247.71 | 221.32 | 144.79 | 319.25 | 308.48 | 104.97 |
| 2015 | 256.24 | 211.09 | 158.5 | 292.58 | 263.9 | 136.46 |
| 2016 | 264.6 | 200.92 | 199.23 | 315.77 | 299.15 | 147.1 |
| 2017 | 264.75 | 220.51 | 189.81 | 284.52 | 286.11 | 145.14 |
| 2018 | 305.21 | 243.43 | 234.57 | 297.03 | 322.43 | 175.69 |

3.1.5. Stadtbezirke, Mehrfamiliengebäude, CO2-Emissionen aus der Beheizung von Wohnraum 2002 - 2018, Veränderung in Prozent

(CO2 emitted by a bezirk for a particular year - Average CO2 emitted by a bezirk in particular year)/(Average CO2 emitted by a bezirk in particular year) times 100



| Berlin, Mehrfamiliengebäude, CO2 Emissionen nach Bezirken, Abweichung vom jährlichen Mittelwert (%) | | | | | | |
|---|-------------------------------|------------------------------|-------------|-------------------------|--------|----------|
| Jahr | Charlottenburg- Wilmerdorf | Friedrichshain- Kreuzberg | Lichtenberg | Marzahn- Hellersdorf | Mitte | Neukölln |
| 2002 | 40.39 | 3.54 | -30.47 | -31.48 | 5.38 | 7.47 |
| 2003 | 39.24 | -7.36 | -28.9 | -25.72 | 18.04 | 12.9 |
| 2004 | 68.34 | -8.3 | -28.84 | -36.4 | 4.7 | -3.02 |
| 2005 | 60.94 | -7.31 | -26.29 | -30.92 | 8.6 | -7.85 |
| 2006 | 58.93 | -3.73 | -26.08 | -30.56 | 12.32 | -8.48 |
| 2007 | 59.85 | -4.49 | -30.75 | -27.09 | 8.22 | -5.16 |
| 2008 | 62.53 | -4.91 | -30.01 | -30.12 | 10.47 | -0.77 |
| 2009 | 34.5 | -8.19 | -29.12 | -32.08 | 19.21 | 7.67 |
| 2010 | 55.71 | 0.05 | -41 | -40.15 | 15.68 | 11.98 |
| 2011 | 48.58 | -13.56 | -31.84 | -29.44 | 21.94 | -5.91 |
| 2012 | 55.9 | -6.67 | -24.83 | -43.99 | 22.18 | 8.41 |
| 2013 | 61.48 | -12.5 | -11.33 | -43.97 | 22.28 | 1.07 |
| 2014 | 37.45 | -16.19 | -12.41 | -33.78 | 22.29 | 9.56 |
| 2015 | 37.5 | -9.52 | -49.81 | -13.2 | 9.54 | -2.94 |
| 2016 | 32.84 | -13.24 | -28.37 | 12.51 | 9.16 | -5.32 |
| 2017 | 29.82 | -5.84 | -20.21 | -9.21 | 6.52 | -21.15 |
| 2018 | 23.98 | 3.76 | -19.01 | -29.63 | -10.98 | -21.51 |

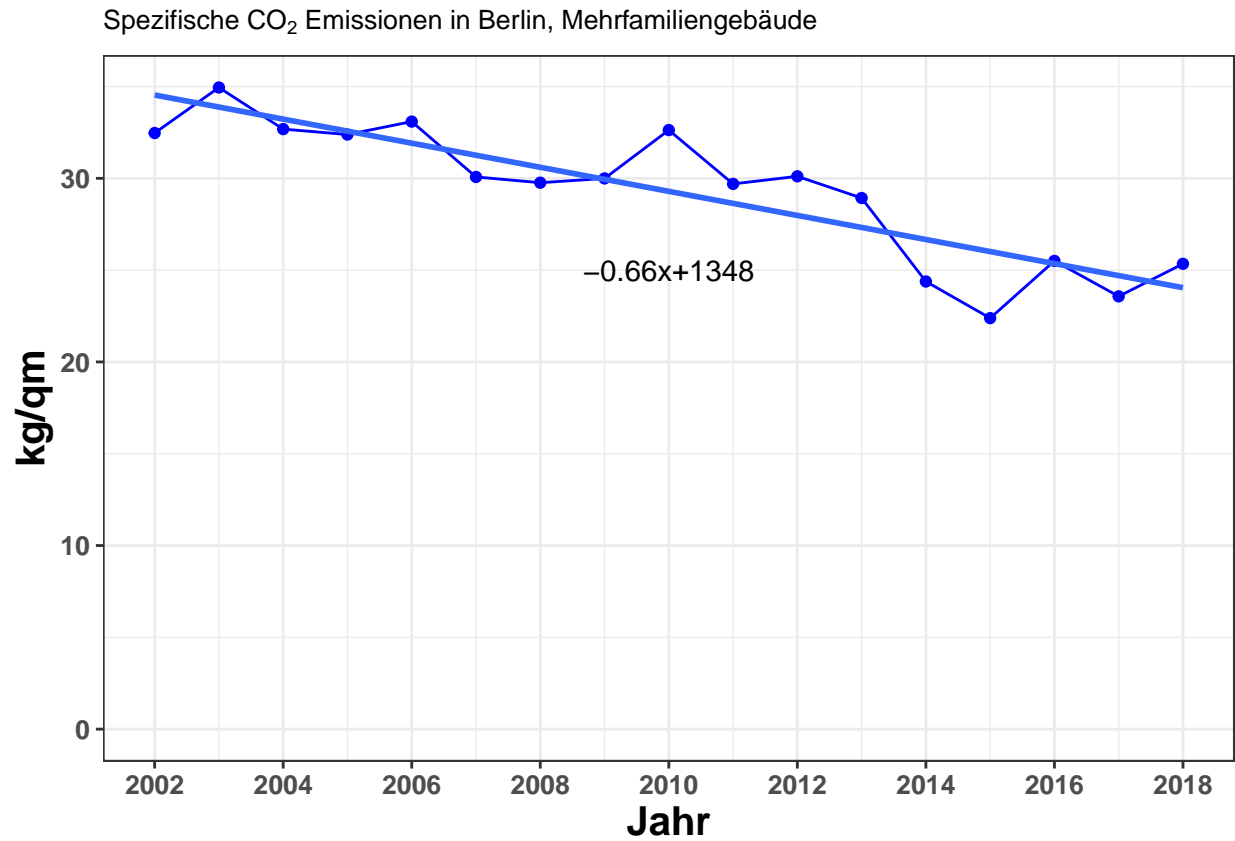
| Berlin, Mehrfamiliengebäude, CO2 Emissionen nach Bezirken, Abweichung vom jährlichen Mittelwert (%) | | | | | | |
|---|--------|---------------|---------|-------------------------|--------------------------|----------------------|
| Jahr | Pankow | Reinickendorf | Spandau | Steglitz- Zehlendorf | Tempelhof- Schöneberg | Treptow- Köpenick |
| 2002 | 10.55 | -16.48 | -24.52 | 28.81 | 54.1 | -47.3 |
| 2003 | 5.92 | -13.46 | -6.15 | 23.84 | 33.88 | -52.22 |
| 2004 | 0.86 | -8.93 | -15.2 | 32.24 | 45.47 | -50.91 |
| 2005 | 6.82 | -8.91 | -26.26 | 27.75 | 48.25 | -44.83 |
| 2006 | 10.83 | -11.94 | -25.66 | 23.14 | 43.38 | -42.15 |
| 2007 | 6.89 | -12.33 | -25.76 | 24.12 | 45.75 | -39.25 |
| 2008 | 0.92 | -12.23 | -25.21 | 26.86 | 43.5 | -41.01 |
| 2009 | 8.89 | -15.12 | -26.82 | 29.65 | 48.66 | -37.24 |
| 2010 | 3.7 | -14.06 | -21.07 | 17.76 | 40.13 | -28.73 |
| 2011 | 2.75 | -5.05 | -8.44 | 21.14 | 38.77 | -38.95 |
| 2012 | 3.06 | -9.76 | -19.5 | 23 | 30.57 | -38.37 |
| 2013 | 3.81 | -10.86 | -17.85 | 27.92 | 26 | -46.05 |
| 2014 | 9.1 | -2.52 | -36.22 | 40.61 | 35.87 | -53.76 |
| 2015 | 22.11 | 0.59 | -24.47 | 39.42 | 25.76 | -34.97 |
| 2016 | 9.87 | -16.58 | -17.27 | 31.11 | 24.21 | -38.92 |
| 2017 | 18.03 | -1.69 | -15.38 | 26.84 | 27.56 | -35.29 |
| 2018 | 26.35 | 0.78 | -2.89 | 22.96 | 33.48 | -27.27 |

3.1.6. Stadtbezirke, Mehrfamiliengebäude, Veränderung der CO2-Emission aus der Beheizung von Wohnraum 2002 - 2018 in Prozent

Skip this

3.2. Flächenbezug

3.2.1. Berlin, Mehrfamiliengebäude, flächenbezogene CO₂-Emission aus der Beheizung von Wohnraum 2002 - 2018 in kg/m²[AN]

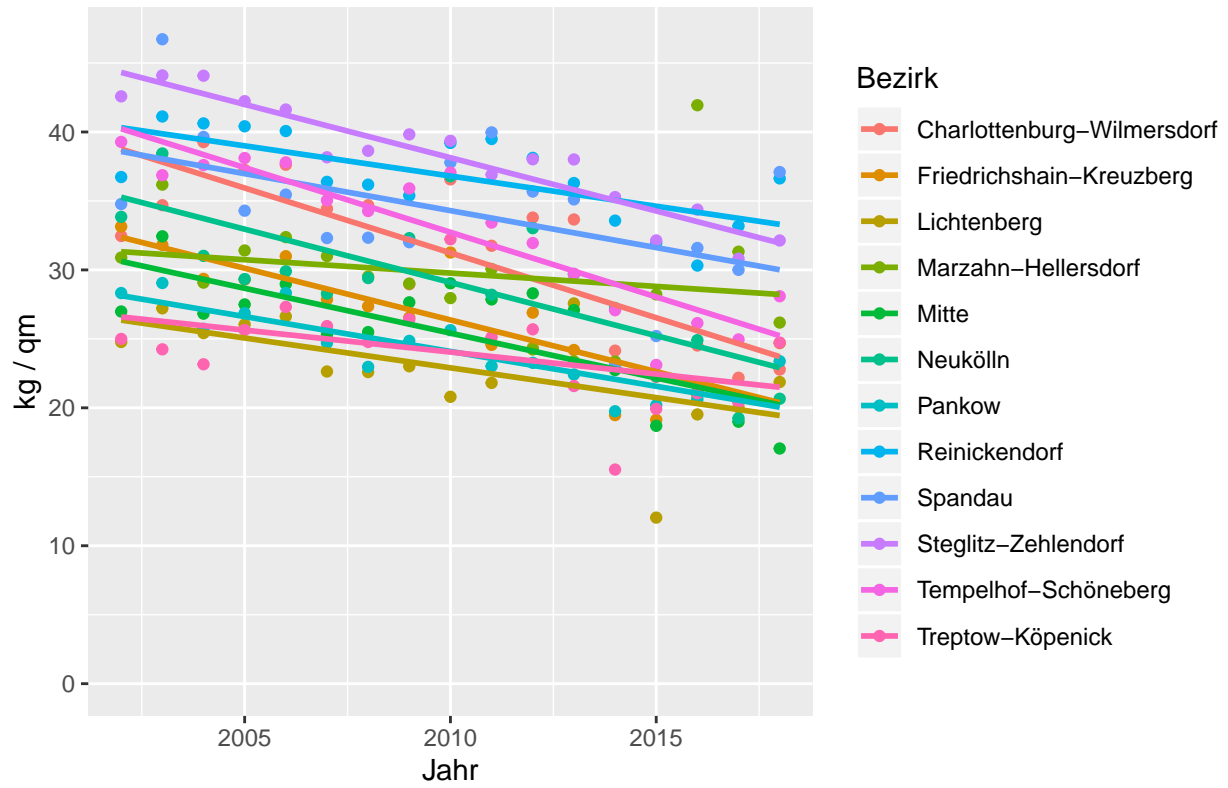


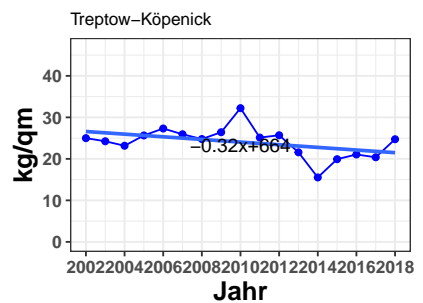
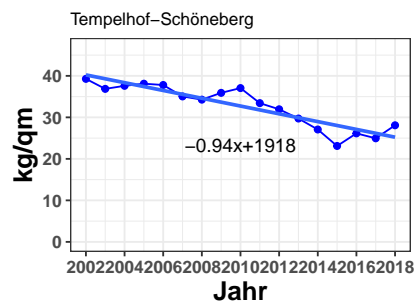
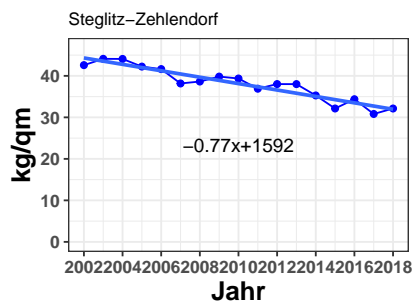
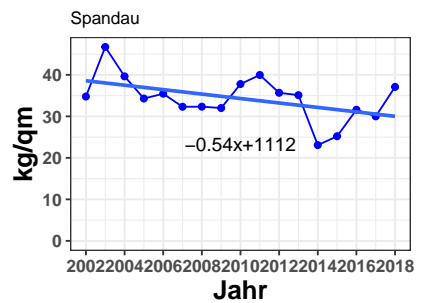
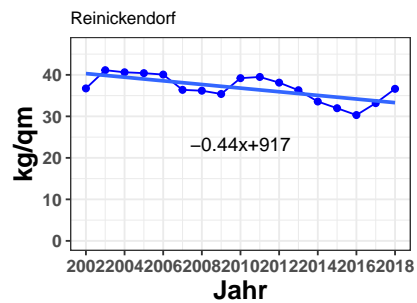
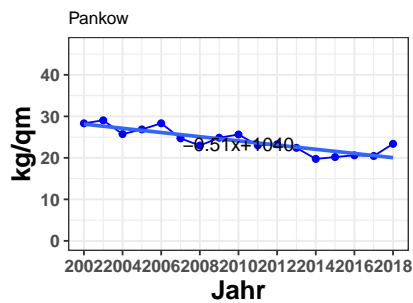
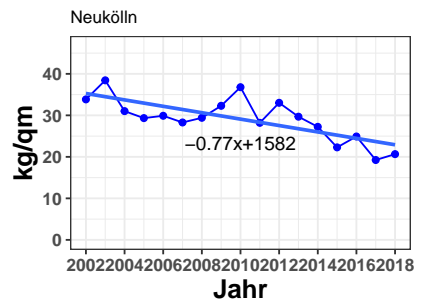
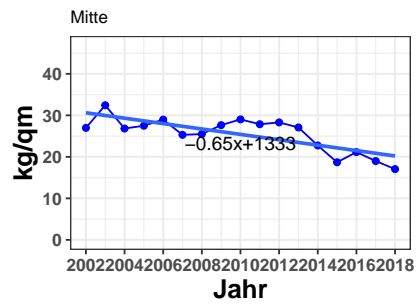
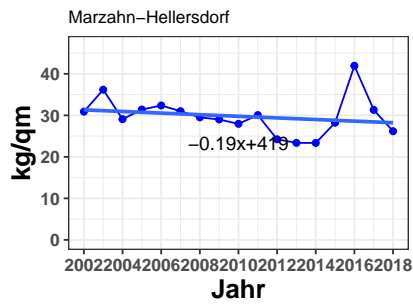
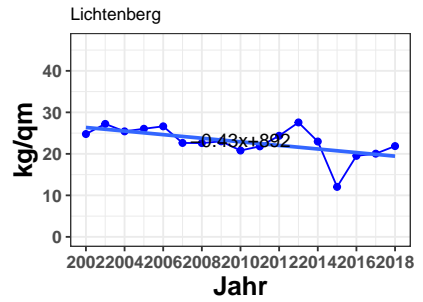
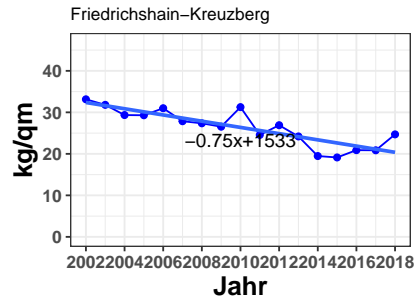
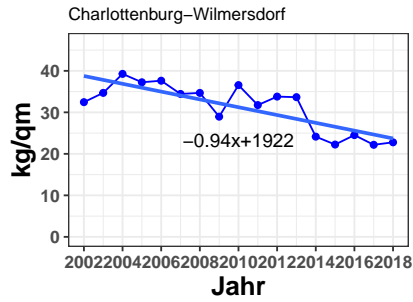
| Berlin, Mehrfamiliengebäude, Spezifische CO2 Emissionen | |
|--|------------------|
| Jahr | kg / q.m. |
| 2002 | 32.47 |
| 2003 | 34.95 |
| 2004 | 32.68 |
| 2005 | 32.39 |
| 2006 | 33.09 |
| 2007 | 30.08 |
| 2008 | 29.76 |
| 2009 | 30 |
| 2010 | 32.63 |
| 2011 | 29.7 |
| 2012 | 30.11 |
| 2013 | 28.93 |
| 2014 | 24.38 |
| 2015 | 22.39 |
| 2016 | 25.5 |
| 2017 | 23.57 |
| 2018 | 25.34 |

3.2.2. Stadtbezirke, Mehrfamiliengebäude, flächenbezogene CO2-Emission aus Beheizung von Wohnraum 2002 - 2008 in kg/m²[AN]

BOOKMARK - Section 3.2.2.

Spezifische CO₂ Emissionen von Stadtbezirken, Mehrfamiliengebäude





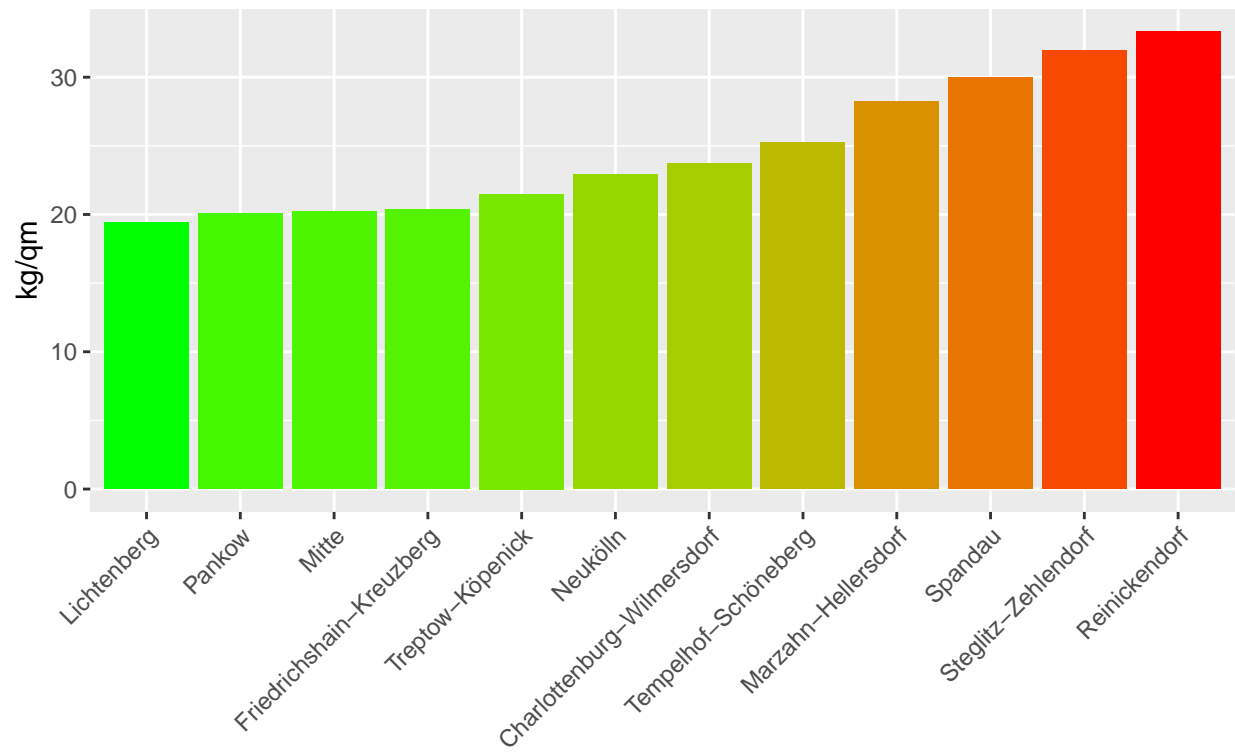
| Berlin, Mehrfamiliengebäude, spezifische CO2 Emissionen (kg / q.m.) | | | | | | |
|---|-------------------------------|------------------------------|-------------|-------------------------|-------|----------|
| Jahr | Charlottenburg- Wilmerdorf | Friedrichshain- Kreuzberg | Lichtenberg | Marzahn- Hellersdorf | Mitte | Neukölln |
| 2002 | 32.46 | 33.14 | 24.78 | 30.9 | 26.98 | 33.85 |
| 2003 | 34.69 | 31.81 | 27.21 | 36.18 | 32.43 | 38.44 |
| 2004 | 39.27 | 29.35 | 25.42 | 29.08 | 26.83 | 31.02 |
| 2005 | 37.25 | 29.3 | 26.04 | 31.41 | 27.5 | 29.34 |
| 2006 | 37.62 | 30.99 | 26.63 | 32.38 | 28.98 | 29.9 |
| 2007 | 34.43 | 27.86 | 22.63 | 31 | 25.3 | 28.28 |
| 2008 | 34.69 | 27.36 | 22.59 | 29.51 | 25.49 | 29.41 |
| 2009 | 28.96 | 26.54 | 23.01 | 29.01 | 27.65 | 32.3 |
| 2010 | 36.56 | 31.26 | 20.8 | 27.96 | 29.03 | 36.79 |
| 2011 | 31.75 | 24.56 | 21.81 | 30.06 | 27.86 | 28.2 |
| 2012 | 33.79 | 26.9 | 24.35 | 24.23 | 28.3 | 33.03 |
| 2013 | 33.66 | 24.19 | 27.57 | 23.36 | 27.09 | 29.68 |
| 2014 | 24.14 | 19.47 | 22.97 | 23.35 | 22.74 | 27.24 |
| 2015 | 22.24 | 19.13 | 12.04 | 28.22 | 18.69 | 22.29 |
| 2016 | 24.52 | 20.89 | 19.52 | 41.94 | 21.15 | 24.91 |
| 2017 | 22.18 | 20.86 | 20.04 | 31.32 | 18.99 | 19.24 |
| 2018 | 22.78 | 24.69 | 21.87 | 26.18 | 17.05 | 20.66 |

| Berlin, Mehrfamiliengebäude, spezifische CO2 Emissionen (kg / q.m.) | | | | | | |
|---|--------|---------------|---------|-------------------------|--------------------------|----------------------|
| Jahr | Pankow | Reinickendorf | Spandau | Steglitz- Zehlendorf | Tempelhof- Schöneberg | Treptow- Köpenick |
| 2002 | 28.32 | 36.73 | 34.78 | 42.58 | 39.28 | 24.99 |
| 2003 | 29.05 | 41.12 | 46.72 | 44.1 | 36.87 | 24.24 |
| 2004 | 25.73 | 40.62 | 39.64 | 44.08 | 37.6 | 23.16 |
| 2005 | 26.86 | 40.41 | 34.29 | 42.23 | 38.11 | 25.64 |
| 2006 | 28.33 | 40.07 | 35.46 | 41.63 | 37.8 | 27.32 |
| 2007 | 24.71 | 36.39 | 32.31 | 38.17 | 35.05 | 25.93 |
| 2008 | 22.97 | 36.18 | 32.33 | 38.63 | 34.27 | 24.78 |
| 2009 | 24.85 | 35.39 | 32.01 | 39.82 | 35.91 | 26.42 |
| 2010 | 25.63 | 39.21 | 37.79 | 39.36 | 37.05 | 32.22 |
| 2011 | 23.02 | 39.49 | 39.97 | 36.9 | 33.43 | 25.13 |
| 2012 | 23.26 | 38.12 | 35.68 | 38.02 | 31.95 | 25.69 |
| 2013 | 22.42 | 36.3 | 35.11 | 38.01 | 29.72 | 21.58 |
| 2014 | 19.75 | 33.57 | 23.07 | 35.28 | 27.08 | 15.53 |
| 2015 | 20.19 | 31.96 | 25.2 | 32.14 | 23.11 | 19.92 |
| 2016 | 20.61 | 30.31 | 31.59 | 34.37 | 26.14 | 21.06 |
| 2017 | 20.45 | 33.19 | 30 | 30.82 | 24.96 | 20.38 |
| 2018 | 23.38 | 36.63 | 37.1 | 32.13 | 28.09 | 24.73 |

3.2.3. Stadtbezirke, Mehrfamiliengebäude, flächenbezogene CO2-Emission aus der Beheizung von Wohnraum im Jahr 2018 in kg/m²[AN]

2018 values for the specific CO2 emission in each bezirk

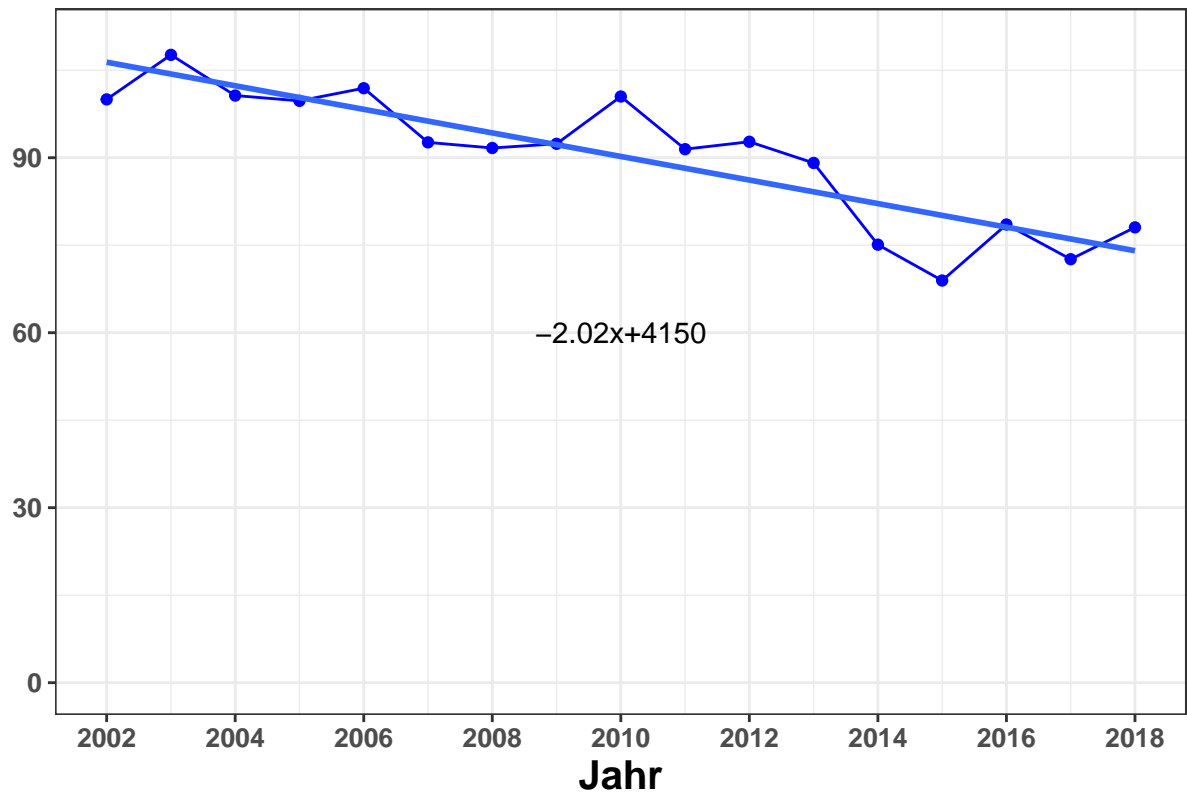
Spezifische CO₂ Emissionen 2018, Mehrfamiliengebäude



| Berlin, Mehrfamilingebäude, spezifische CO2 Emissionen (2018) | |
|--|------------------|
| Bezirk | kg / q.m. |
| Charlottenburg–Wilmerdorf | 23.71 |
| Friedrichshain–Kreuzberg | 20.37 |
| Lichtenberg | 19.44 |
| Marzahn–Hellersdorf | 28.22 |
| Mitte | 20.21 |
| Neukölln | 22.91 |
| Pankow | 20.05 |
| Reinickendorf | 33.30 |
| Spandau | 30.01 |
| Steglitz–Zehlendorf | 31.95 |
| Tempelhof–Schöneberg | 25.23 |
| Treptow–Köpenick | 21.49 |

3.2.4. Berlin, Mehrfamiliengebäude, flächenbezogene CO₂-Emission aus Beheizung von Wohnraum nach Stadtbezirken, 2002 - 2008, 2002 = 100

Spezifische CO₂ Emissionen in Berlin, Mehrfamiliengebäude, 2002 Wert = 100

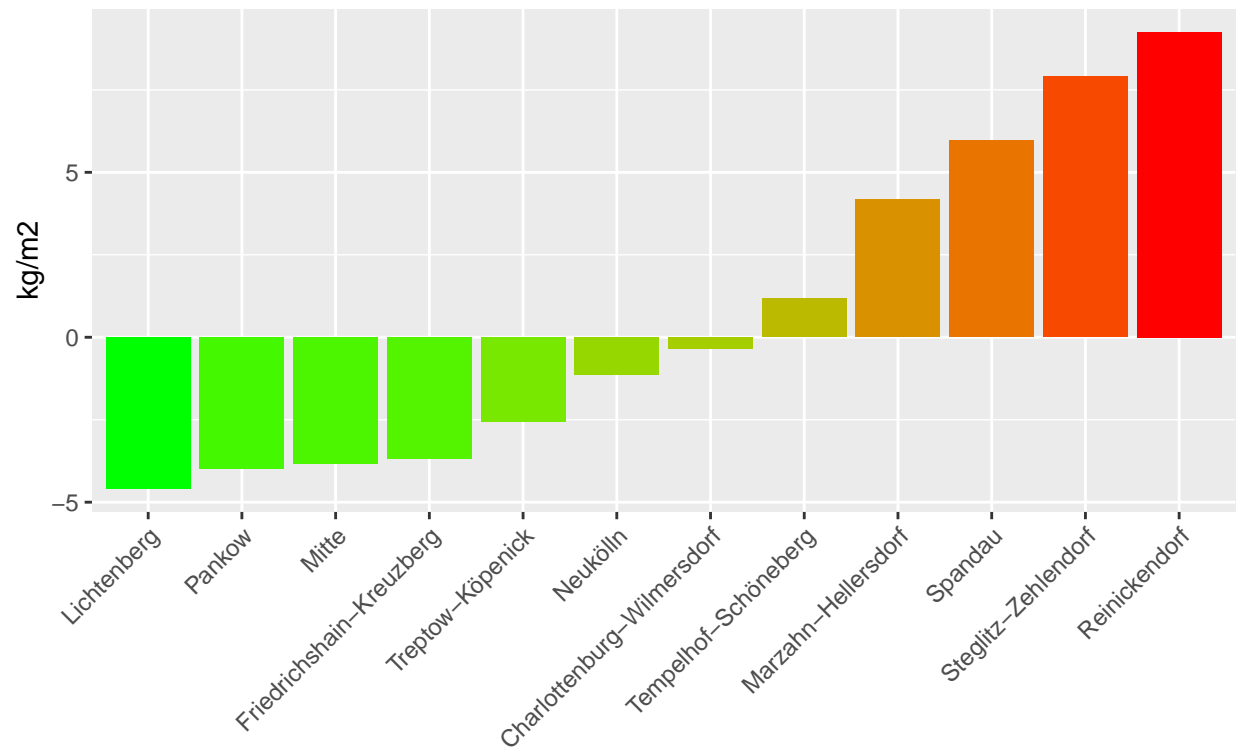


| Berlin, Mehrfamiliengebäude, spezifische CO2 Emissionen (2002 Wert = 100) | |
|---|--------|
| Jahr | Wert |
| 2002 | 100 |
| 2003 | 107.64 |
| 2004 | 100.66 |
| 2005 | 99.75 |
| 2006 | 101.92 |
| 2007 | 92.63 |
| 2008 | 91.67 |
| 2009 | 92.38 |
| 2010 | 100.49 |
| 2011 | 91.46 |
| 2012 | 92.73 |
| 2013 | 89.1 |
| 2014 | 75.09 |
| 2015 | 68.95 |
| 2016 | 78.55 |
| 2017 | 72.6 |
| 2018 | 78.06 |

3.2.5. Alle Stadtbezirke, Mehrfamiliengebäude, flächenbezogene CO2-Emission aus der Beheizung von Wohnraum, Entwicklung 2002 - 2018 und Niveau 2018 (Rang-folge)

Specific CO2 emission in bezirk X in 2018 - Specific CO2 emission in Berlin in 2018

Abweichung von Berlin 2018, Spezifische CO₂ Emissionen Mehrfamiliengebäude

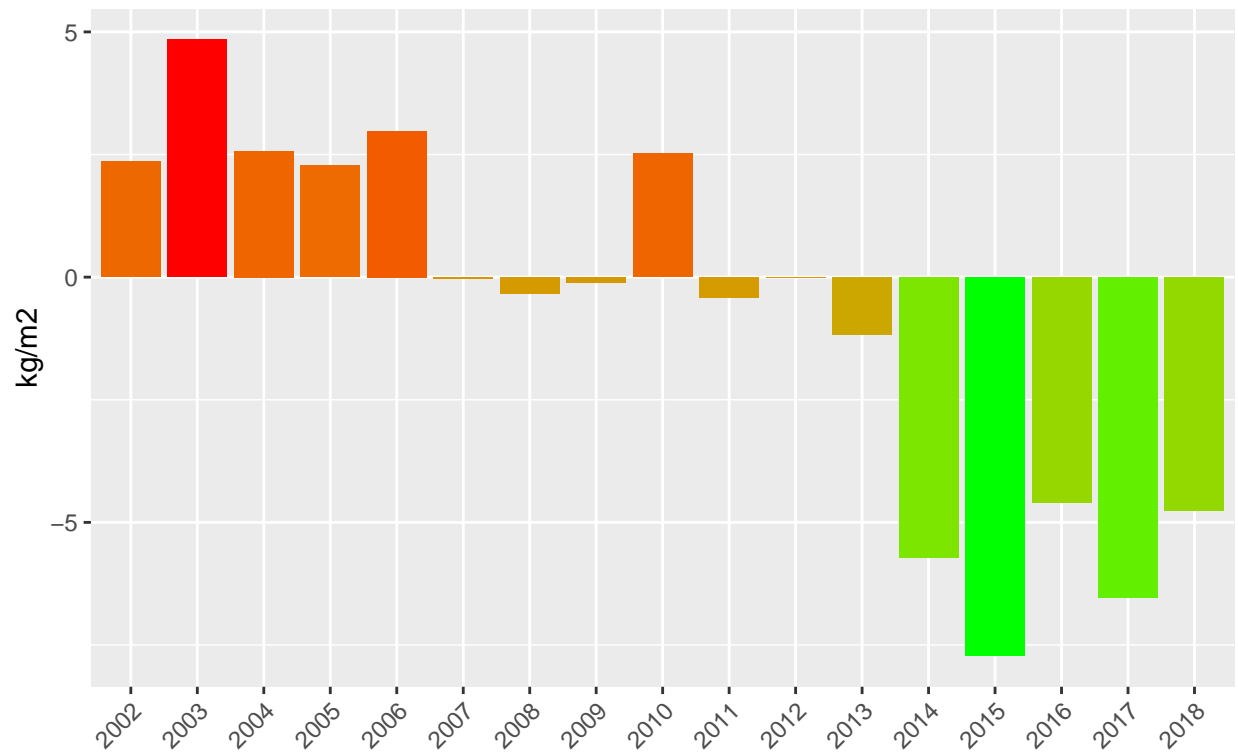


| Bezirke, Mehrfamiliengebäude, spezifische CO2 Emissionen (2018) Abweichung von Berlin | |
|--|------------------|
| Bezirk | kg / q.m. |
| Charlottenburg–Wilmerdorf | –0.33 |
| Friedrichshain–Kreuzberg | –3.67 |
| Lichtenberg | –4.60 |
| Marzahn–Hellersdorf | 4.18 |
| Mitte | –3.83 |
| Neukölln | –1.13 |
| Pankow | –4.00 |
| Reinickendorf | 9.26 |
| Spandau | 5.96 |
| Steglitz–Zehlendorf | 7.91 |
| Tempelhof–Schöneberg | 1.18 |
| Treptow–Köpenick | –2.55 |

3.2.6. Berlin, Mehrfamiliengebäude, durchschnittliche Emissionsminderung je qm Nutzfläche im Zeitraum 2012 - 2018

Berlin, specific co2 emission with 2012 value as the reference

Spezifische CO₂ Berlin, Mehrfamiliengebäude, zentriert um 2012

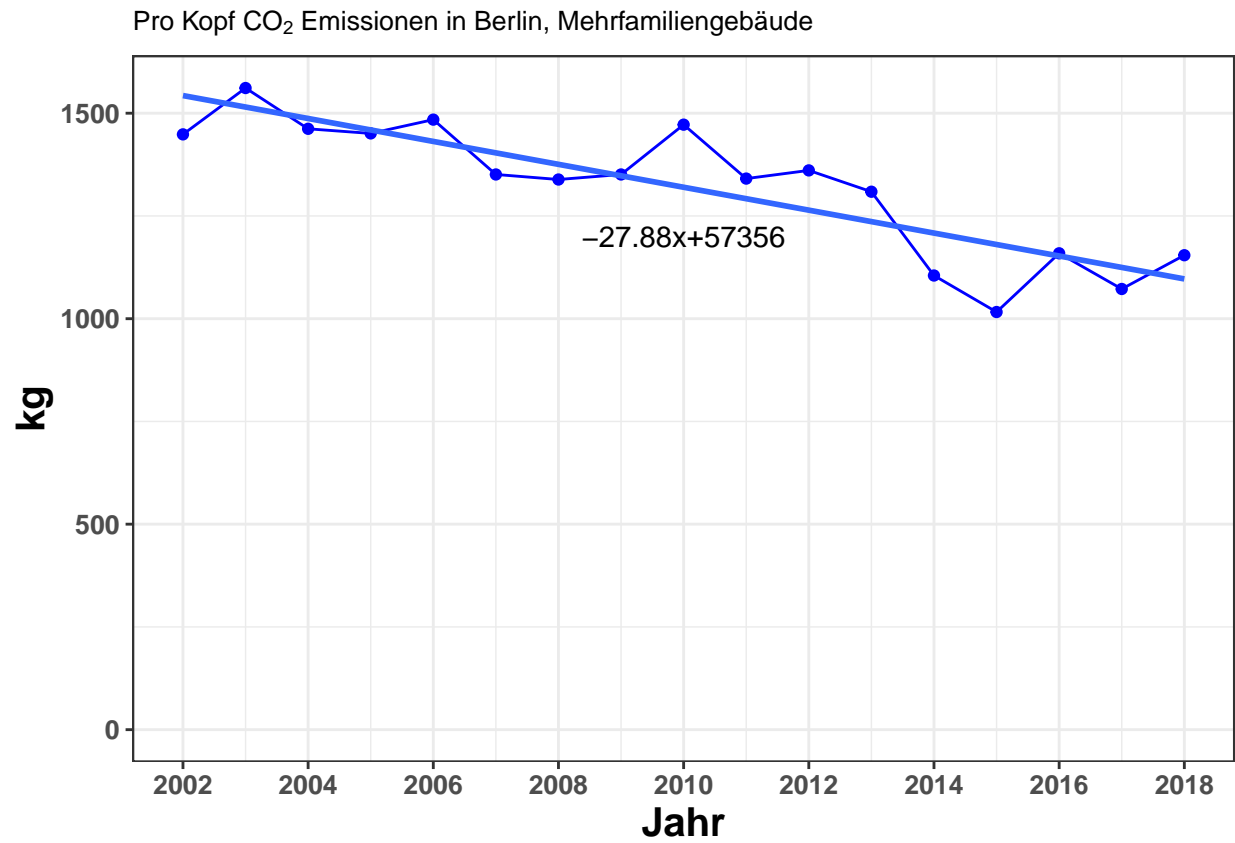


**Berlin, Mehrfamiliengebäude,
Spezifische CO2 Emissionen
Zentriert um 2012**

| Jahr | kg / q.m. |
|-------------|------------------|
| 2002 | 2.36 |
| 2003 | 4.84 |
| 2004 | 2.57 |
| 2005 | 2.28 |
| 2006 | 2.98 |
| 2007 | -0.03 |
| 2008 | -0.35 |
| 2009 | -0.11 |
| 2010 | 2.52 |
| 2011 | -0.41 |
| 2012 | 0 |
| 2013 | -1.18 |
| 2014 | -5.73 |
| 2015 | -7.72 |
| 2016 | -4.61 |
| 2017 | -6.54 |
| 2018 | -4.77 |

3.3. Emission pro Einwohner

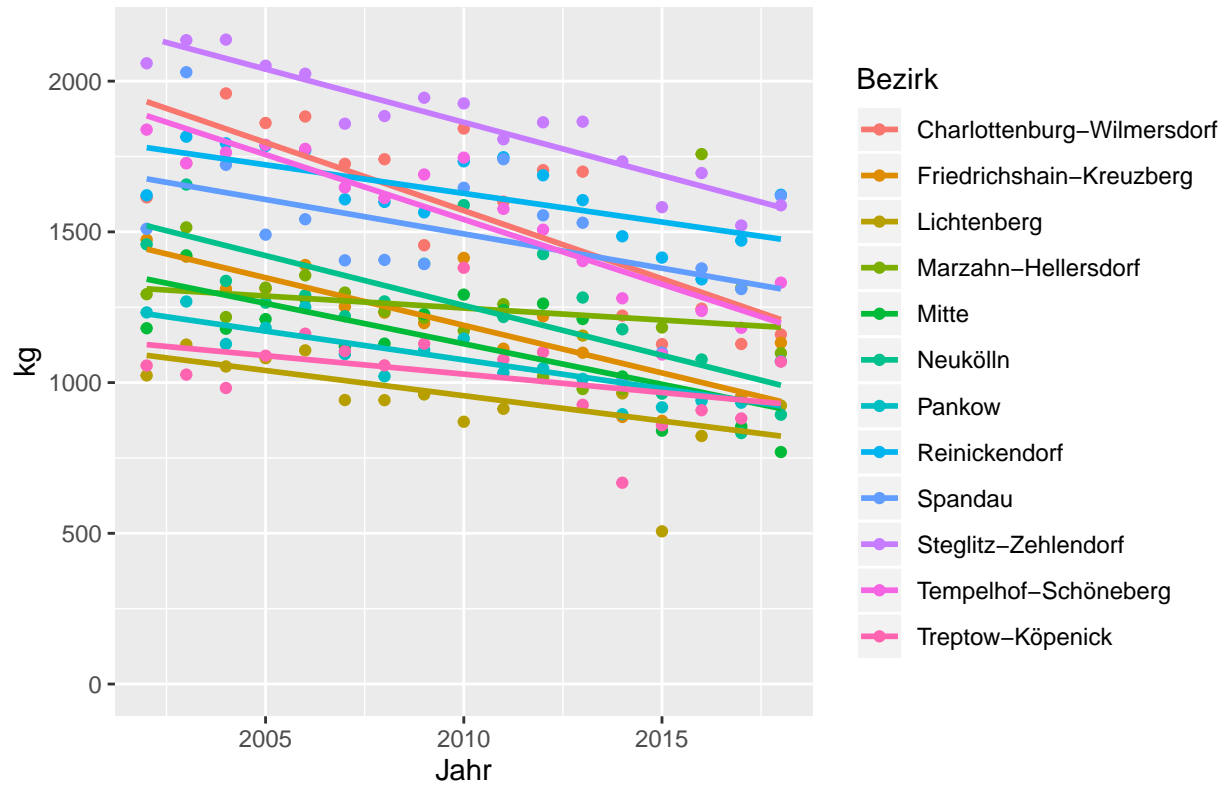
3.3.1. Stadtbezirke, Mehrfamiliengebäude, CO₂-Emission aus der Beheizung von Wohnraum pro Einwohner

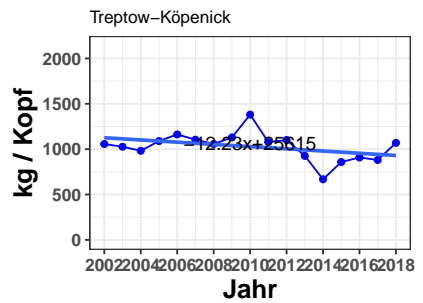
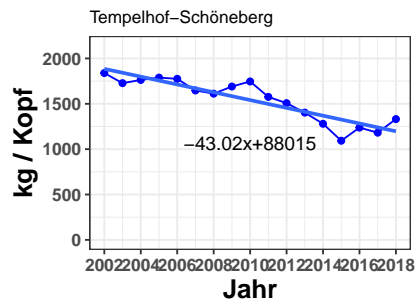
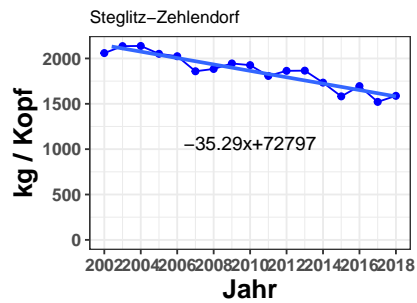
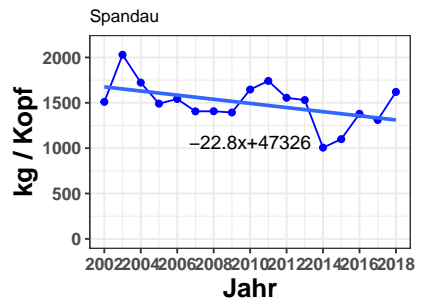
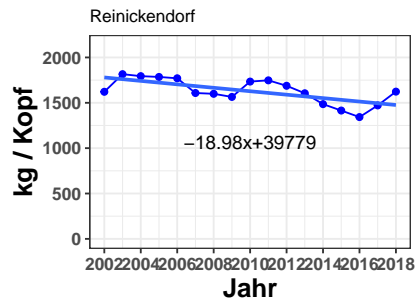
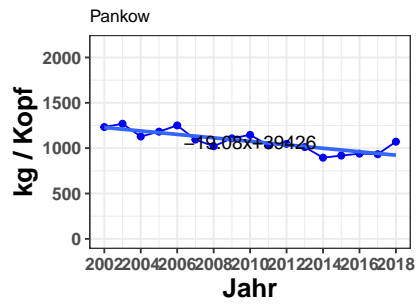
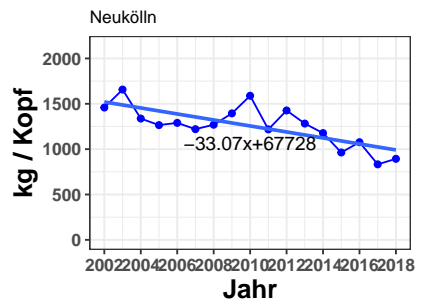
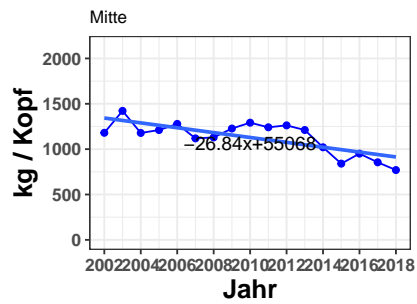
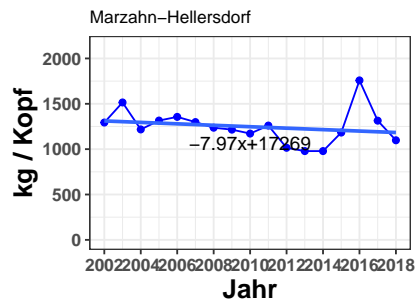
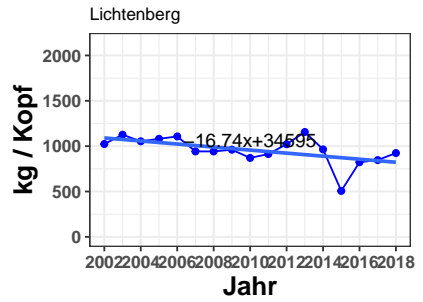
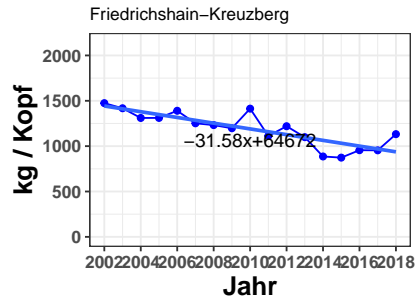
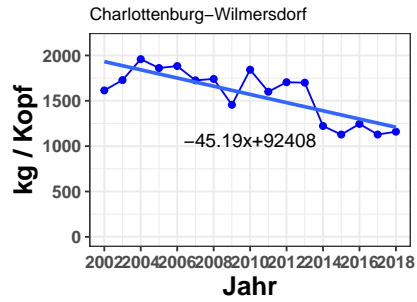


| Berlin, Mehrfamiliengebäude, Pro Kopf CO2 Emissionen | |
|---|-----------|
| Jahr | kg |
| 2002 | 1448.49 |
| 2003 | 1561.27 |
| 2004 | 1462.07 |
| 2005 | 1450.84 |
| 2006 | 1484.38 |
| 2007 | 1350.93 |
| 2008 | 1338.68 |
| 2009 | 1350.91 |
| 2010 | 1472.12 |
| 2011 | 1340.91 |
| 2012 | 1360.86 |
| 2013 | 1308.95 |
| 2014 | 1105.04 |
| 2015 | 1016.26 |
| 2016 | 1159.12 |
| 2017 | 1072.32 |
| 2018 | 1154.43 |

3.3.2. Stadtbezirke, Mehrfamiliengebäude, CO₂-Emission aus der Beheizung von Wohnraum pro Einwohner

CO₂ Emissionen pro Kopf, Mehrfamiliengebäude

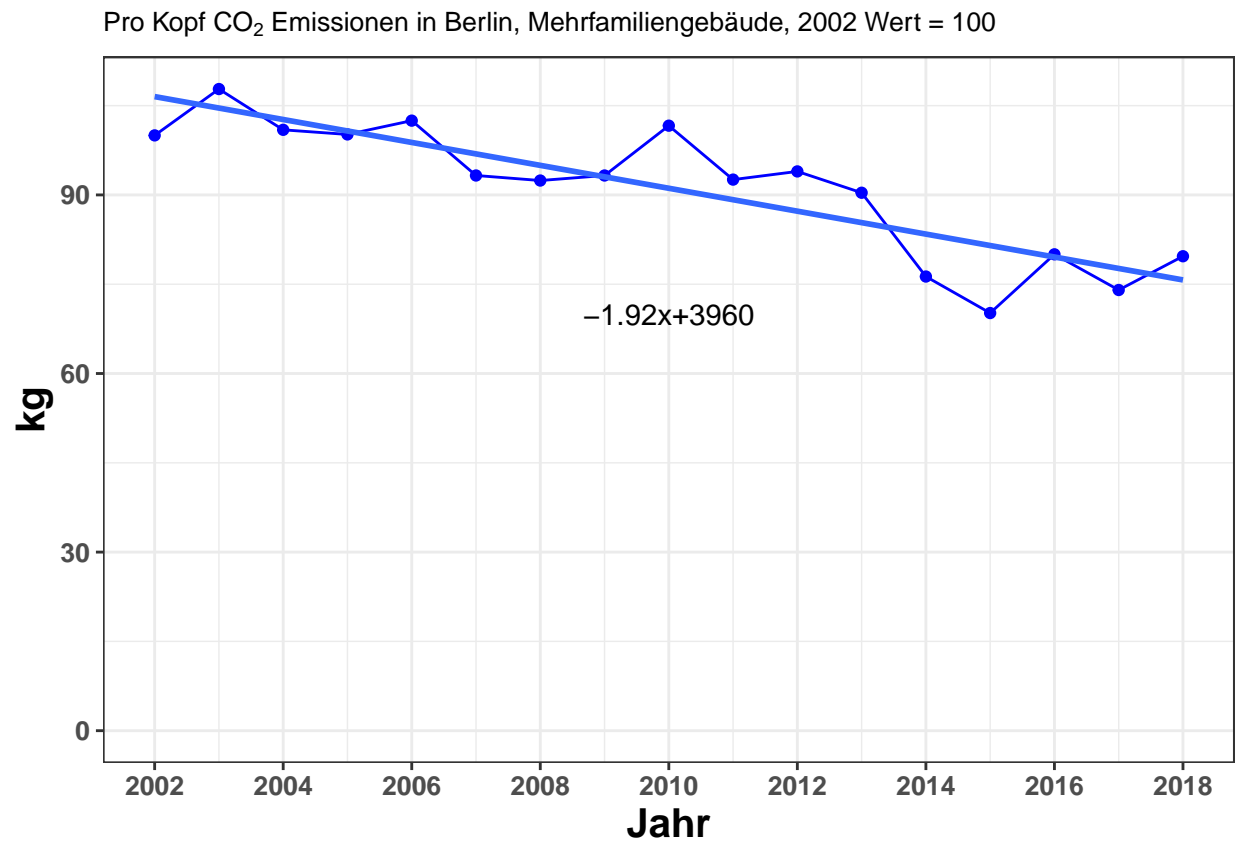




| Bezirke, Mehrfamiliengebäude, Pro Kopf CO2 Emissionen (kg) | | | | | | |
|--|-------------------------------|------------------------------|-------------|-------------------------|---------|----------|
| Jahr | Charlottenburg- Wilmerdorf | Friedrichshain- Kreuzberg | Lichtenberg | Marzahn- Hellersdorf | Mitte | Neukölln |
| 2002 | 1614.46 | 1474.02 | 1023.67 | 1293.33 | 1180.38 | 1458.61 |
| 2003 | 1728.25 | 1417.8 | 1126.09 | 1514.81 | 1422 | 1656.98 |
| 2004 | 1959.16 | 1310.79 | 1053.47 | 1217.46 | 1178.63 | 1337.35 |
| 2005 | 1861.17 | 1311.36 | 1080.89 | 1315.25 | 1210.62 | 1265.12 |
| 2006 | 1882.79 | 1389.92 | 1106.96 | 1355.85 | 1278.36 | 1289.74 |
| 2007 | 1725.71 | 1251.91 | 942.11 | 1298.52 | 1118.7 | 1220.33 |
| 2008 | 1740.95 | 1231.98 | 941.82 | 1236.28 | 1129.22 | 1269.27 |
| 2009 | 1455.71 | 1197.37 | 960.73 | 1215.25 | 1227.2 | 1394.32 |
| 2010 | 1842.88 | 1413.6 | 870.1 | 1171.85 | 1291.83 | 1588.77 |
| 2011 | 1600.22 | 1112.47 | 913.01 | 1260.13 | 1240.92 | 1217.82 |
| 2012 | 1704.79 | 1219.62 | 1021.27 | 1015.01 | 1262.08 | 1426.59 |
| 2013 | 1699.73 | 1099.03 | 1156.15 | 978.75 | 1210.87 | 1282.14 |
| 2014 | 1222.28 | 886.06 | 964.27 | 978.77 | 1020.36 | 1176.91 |
| 2015 | 1127.63 | 873.42 | 506.59 | 1182.83 | 840.44 | 963.25 |
| 2016 | 1245.33 | 955.56 | 822.89 | 1758.02 | 950.85 | 1076.63 |
| 2017 | 1128.12 | 953.99 | 846.43 | 1314.16 | 854.96 | 832.59 |
| 2018 | 1159.56 | 1132.22 | 923.92 | 1097.86 | 769.64 | 893.53 |

| Bezirke, Mehrfamiliengebäude, Pro Kopf CO2 Emissionen (kg) | | | | | | |
|--|---------|---------------|---------|-------------------------|--------------------------|----------------------|
| Jahr | Pankow | Reinickendorf | Spandau | Steglitz- Zehlendorf | Tempelhof- Schöneberg | Treptow- Köpenick |
| 2002 | 1232.77 | 1621.37 | 1510.17 | 2059.33 | 1839.22 | 1056.63 |
| 2003 | 1269.07 | 1815.65 | 2029.65 | 2135.92 | 1727.64 | 1026.54 |
| 2004 | 1128.08 | 1793.84 | 1722.47 | 2137.8 | 1763.37 | 982.21 |
| 2005 | 1181.8 | 1785.09 | 1490.75 | 2051.25 | 1788.76 | 1089.25 |
| 2006 | 1250.71 | 1770.27 | 1541.92 | 2024.69 | 1775.3 | 1162.21 |
| 2007 | 1094.42 | 1608.01 | 1405.49 | 1858.85 | 1647.42 | 1104.74 |
| 2008 | 1020.85 | 1599.27 | 1407.02 | 1884.25 | 1612.13 | 1057.23 |
| 2009 | 1108.23 | 1564.85 | 1393.35 | 1944.91 | 1690.45 | 1129.12 |
| 2010 | 1146.23 | 1734.07 | 1646.27 | 1926.22 | 1746.21 | 1380.94 |
| 2011 | 1032.66 | 1747.56 | 1741.08 | 1807.21 | 1576.18 | 1077.02 |
| 2012 | 1047.45 | 1687.79 | 1554.87 | 1863.48 | 1507.23 | 1101.08 |
| 2013 | 1012.19 | 1605.25 | 1530.3 | 1865.59 | 1403.03 | 926.26 |
| 2014 | 895.03 | 1485.38 | 1005.66 | 1733.51 | 1279.76 | 667.83 |
| 2015 | 918.16 | 1414.66 | 1099.38 | 1581.98 | 1093.1 | 858.65 |
| 2016 | 939.43 | 1342.61 | 1378.8 | 1695.27 | 1237.78 | 908.33 |
| 2017 | 933.3 | 1471.16 | 1310.27 | 1521.22 | 1181.83 | 880.94 |
| 2018 | 1071.23 | 1623.24 | 1619.97 | 1588.04 | 1331.59 | 1069.4 |

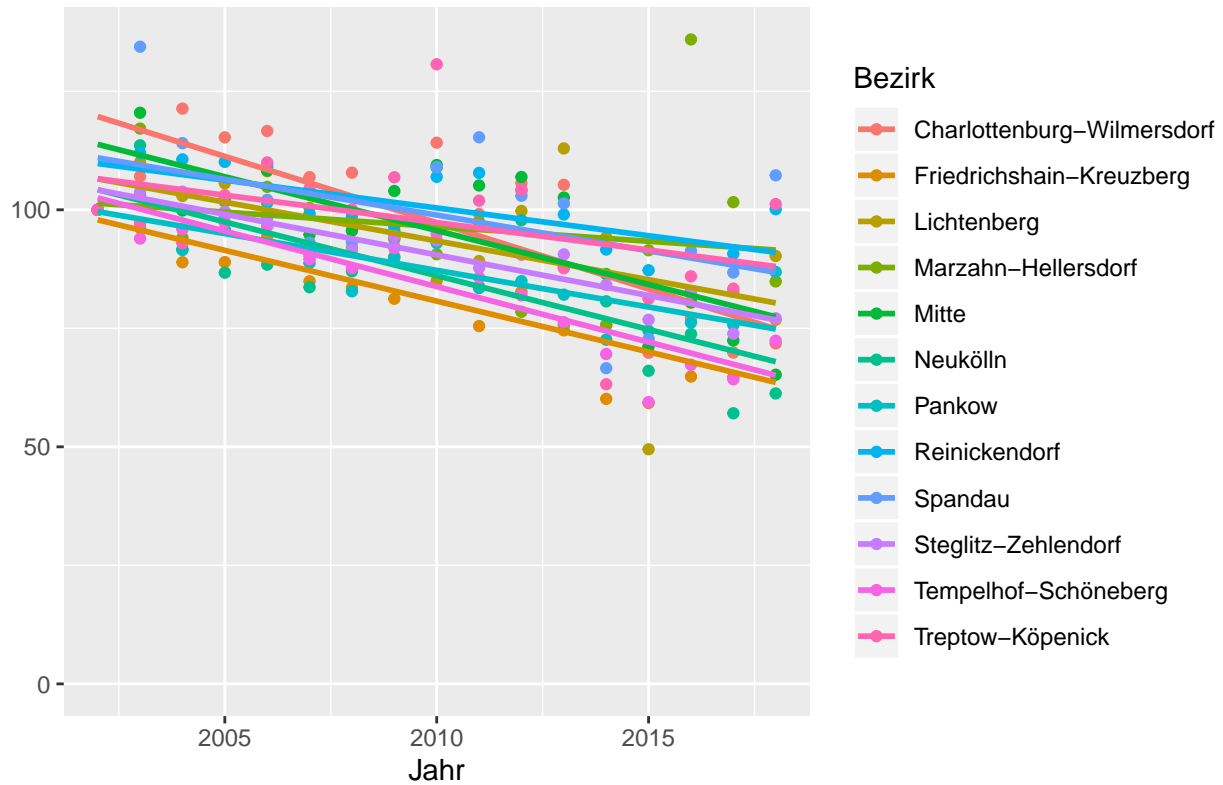
3.3.3. Stadtbezirke, Mehrfamiliengebäude, CO₂-Emission pro Einwohner aus der Beheizung von Wohnraum, 2002 - 2008, 2002 = 100

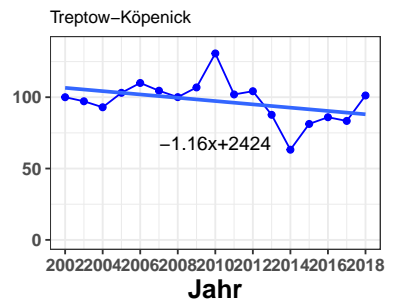
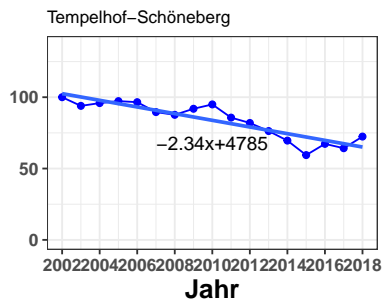
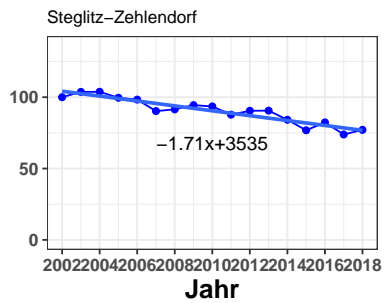
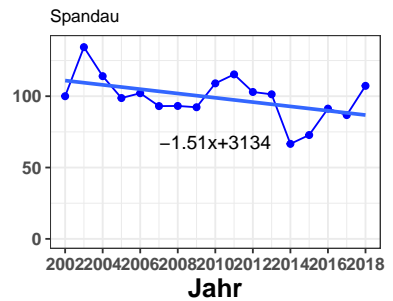
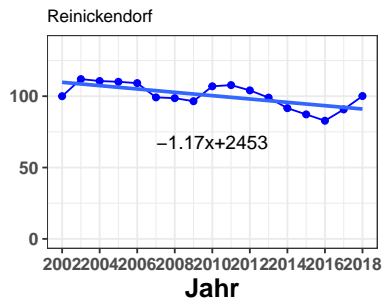
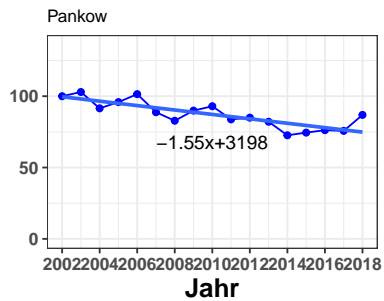
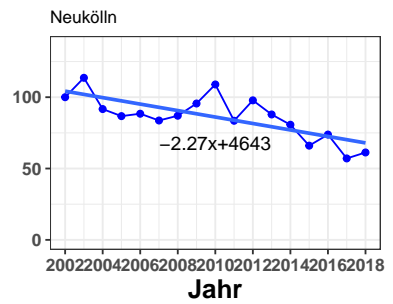
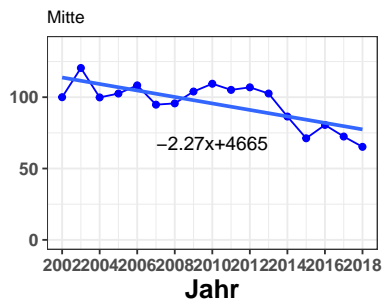
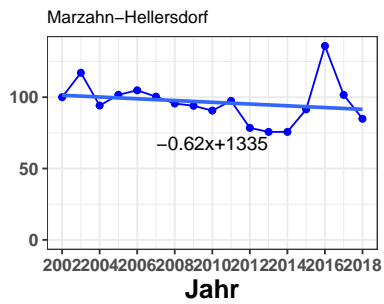
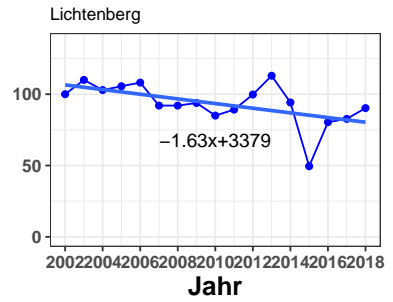
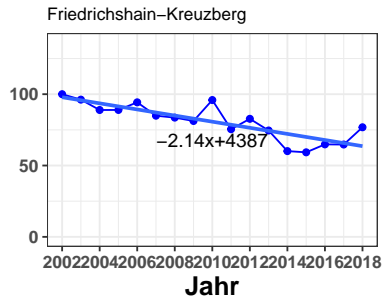
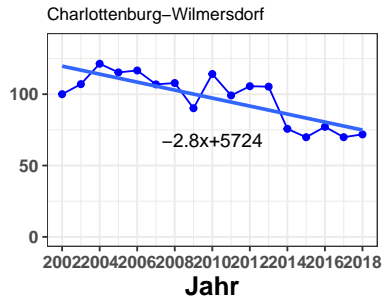


| Berlin, Mehrfamiliengebäude, Pro Kopf CO2 Emissionen (2002 Wert = 100) | |
|---|-------------|
| Jahr | Wert |
| 2002 | 100 |
| 2003 | 107.79 |
| 2004 | 100.94 |
| 2005 | 100.16 |
| 2006 | 102.48 |
| 2007 | 93.26 |
| 2008 | 92.42 |
| 2009 | 93.26 |
| 2010 | 101.63 |
| 2011 | 92.57 |
| 2012 | 93.95 |
| 2013 | 90.37 |
| 2014 | 76.29 |
| 2015 | 70.16 |
| 2016 | 80.02 |
| 2017 | 74.03 |
| 2018 | 79.7 |

3.3.4. Stadtbezirke, Mehrfamiliengebäude, CO₂-Emission pro Einwohner aus der Beheizung von Wohnraum

Pro Kopf CO₂ Emissionen in Stadtbezirken, Mehrfamiliengebäude, 2002 Wert

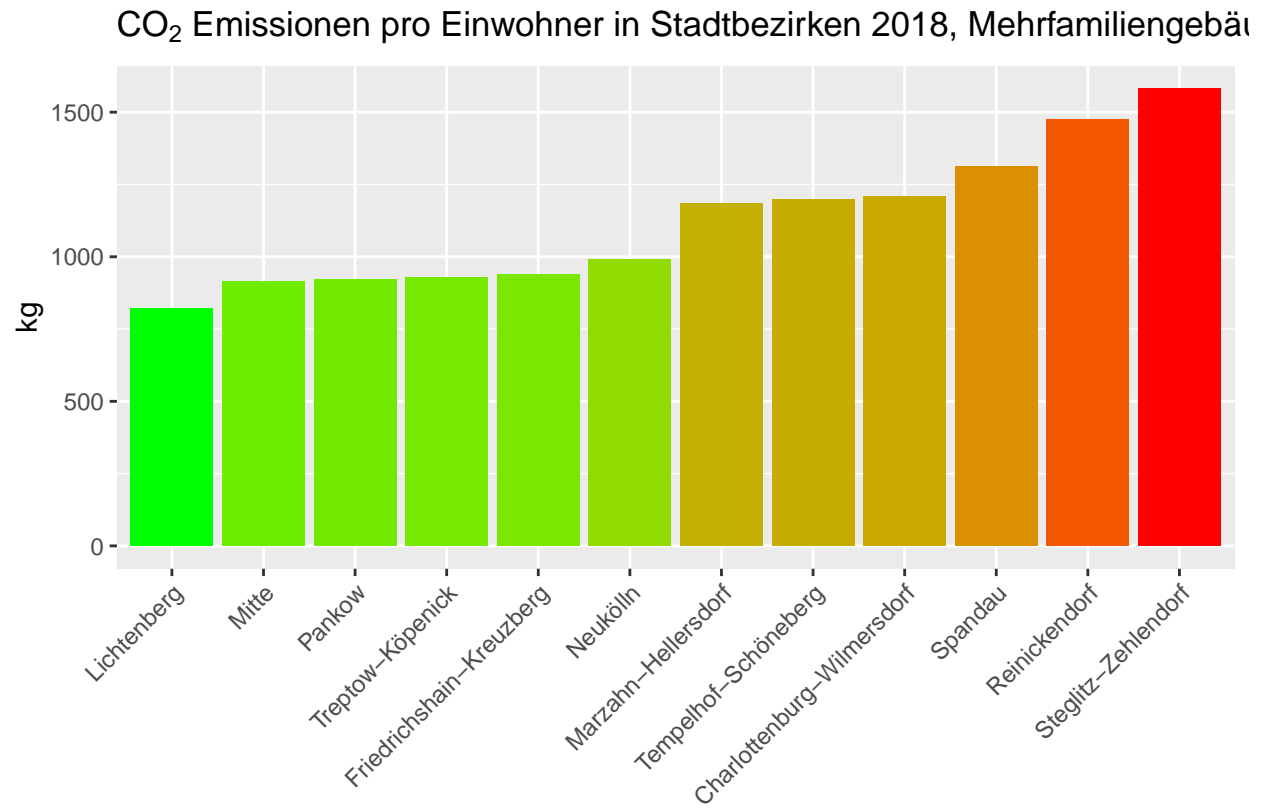




| Berlin, Mehrfamiliengebäude, Pro Kopf CO2 Emissionen nach Bezirken, 2002 Wert = 100 | | | | | | |
|---|-------------------------------|------------------------------|-------------|-------------------------|--------|----------|
| Jahr | Charlottenburg- Wilmerdorf | Friedrichshain- Kreuzberg | Lichtenberg | Marzahn- Hellersdorf | Mitte | Neukölln |
| 2002 | 100 | 100 | 100 | 100 | 100 | 100 |
| 2003 | 107.05 | 96.19 | 110 | 117.12 | 120.47 | 113.6 |
| 2004 | 121.35 | 88.93 | 102.91 | 94.13 | 99.85 | 91.69 |
| 2005 | 115.28 | 88.96 | 105.59 | 101.69 | 102.56 | 86.73 |
| 2006 | 116.62 | 94.29 | 108.14 | 104.83 | 108.3 | 88.42 |
| 2007 | 106.89 | 84.93 | 92.03 | 100.4 | 94.77 | 83.66 |
| 2008 | 107.83 | 83.58 | 92 | 95.59 | 95.67 | 87.02 |
| 2009 | 90.17 | 81.23 | 93.85 | 93.96 | 103.97 | 95.59 |
| 2010 | 114.15 | 95.9 | 85 | 90.61 | 109.44 | 108.92 |
| 2011 | 99.12 | 75.47 | 89.19 | 97.43 | 105.13 | 83.49 |
| 2012 | 105.59 | 82.74 | 99.77 | 78.48 | 106.92 | 97.8 |
| 2013 | 105.28 | 74.56 | 112.94 | 75.68 | 102.58 | 87.9 |
| 2014 | 75.71 | 60.11 | 94.2 | 75.68 | 86.44 | 80.69 |
| 2015 | 69.85 | 59.25 | 49.49 | 91.46 | 71.2 | 66.04 |
| 2016 | 77.14 | 64.83 | 80.39 | 135.93 | 80.55 | 73.81 |
| 2017 | 69.88 | 64.72 | 82.69 | 101.61 | 72.43 | 57.08 |
| 2018 | 71.82 | 76.81 | 90.26 | 84.89 | 65.2 | 61.26 |

| Berlin, Mehrfamiliengebäude, Pro Kopf CO2 Emissionen nach Bezirken, 2002 Wert = 100 | | | | | | |
|---|--------|---------------|---------|-------------------------|--------------------------|----------------------|
| Jahr | Pankow | Reinickendorf | Spandau | Steglitz- Zehlendorf | Tempelhof- Schöneberg | Treptow- Köpenick |
| 2002 | 100 | 100 | 100 | 100 | 100 | 100 |
| 2003 | 102.94 | 111.98 | 134.4 | 103.72 | 93.93 | 97.15 |
| 2004 | 91.51 | 110.64 | 114.06 | 103.81 | 95.88 | 92.96 |
| 2005 | 95.87 | 110.1 | 98.71 | 99.61 | 97.26 | 103.09 |
| 2006 | 101.46 | 109.18 | 102.1 | 98.32 | 96.52 | 109.99 |
| 2007 | 88.78 | 99.18 | 93.07 | 90.26 | 89.57 | 104.55 |
| 2008 | 82.81 | 98.64 | 93.17 | 91.5 | 87.65 | 100.06 |
| 2009 | 89.9 | 96.51 | 92.26 | 94.44 | 91.91 | 106.86 |
| 2010 | 92.98 | 106.95 | 109.01 | 93.54 | 94.94 | 130.69 |
| 2011 | 83.77 | 107.78 | 115.29 | 87.76 | 85.7 | 101.93 |
| 2012 | 84.97 | 104.1 | 102.96 | 90.49 | 81.95 | 104.21 |
| 2013 | 82.11 | 99.01 | 101.33 | 90.59 | 76.28 | 87.66 |
| 2014 | 72.6 | 91.61 | 66.59 | 84.18 | 69.58 | 63.2 |
| 2015 | 74.48 | 87.25 | 72.8 | 76.82 | 59.43 | 81.26 |
| 2016 | 76.2 | 82.81 | 91.3 | 82.32 | 67.3 | 85.96 |
| 2017 | 75.71 | 90.74 | 86.76 | 73.87 | 64.26 | 83.37 |
| 2018 | 86.9 | 100.12 | 107.27 | 77.11 | 72.4 | 101.21 |

3.3.5. Stadtbezirke, Mehrfamiliengebäude, CO₂-Emissionen aus der Beheizung von Wohnraum pro Einwohner, Niveau im Jahr 2018 in t/Einwohner

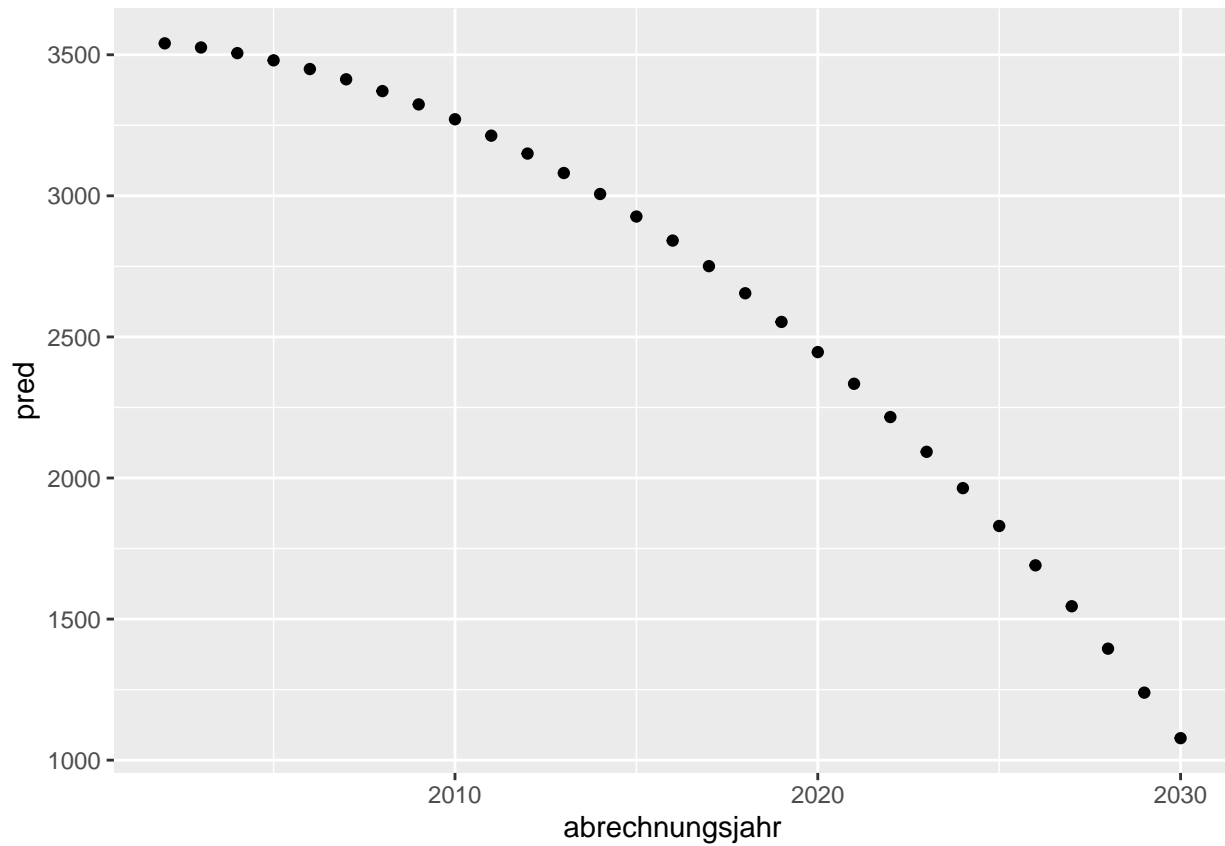


| Bezirke, Mehrfamiliengebäude, pro Kopf CO2 Emissionen (2018) | |
|---|-----------|
| Bezirk | kg |
| Charlottenburg–Wilmerdorf | 1208.97 |
| Friedrichshain–Kreuzberg | 937.40 |
| Lichtenberg | 822.61 |
| Marzahn–Hellersdorf | 1183.53 |
| Mitte | 913.97 |
| Neukölln | 991.31 |
| Pankow | 922.75 |
| Reinickendorf | 1475.81 |
| Spandau | 1310.96 |
| Steglitz–Zehlendorf | 1581.18 |
| Tempelhof–Schöneberg | 1197.06 |
| Treptow–Köpenick | 930.28 |

3.3.6. Stadtbezirke, Mehrfamiliengebäude, CO2-Emissionen aus der Beheizung von Wohnraum pro Einwohner, Veränderung 2002 / 2018 in Prozent

3.4. Prognose

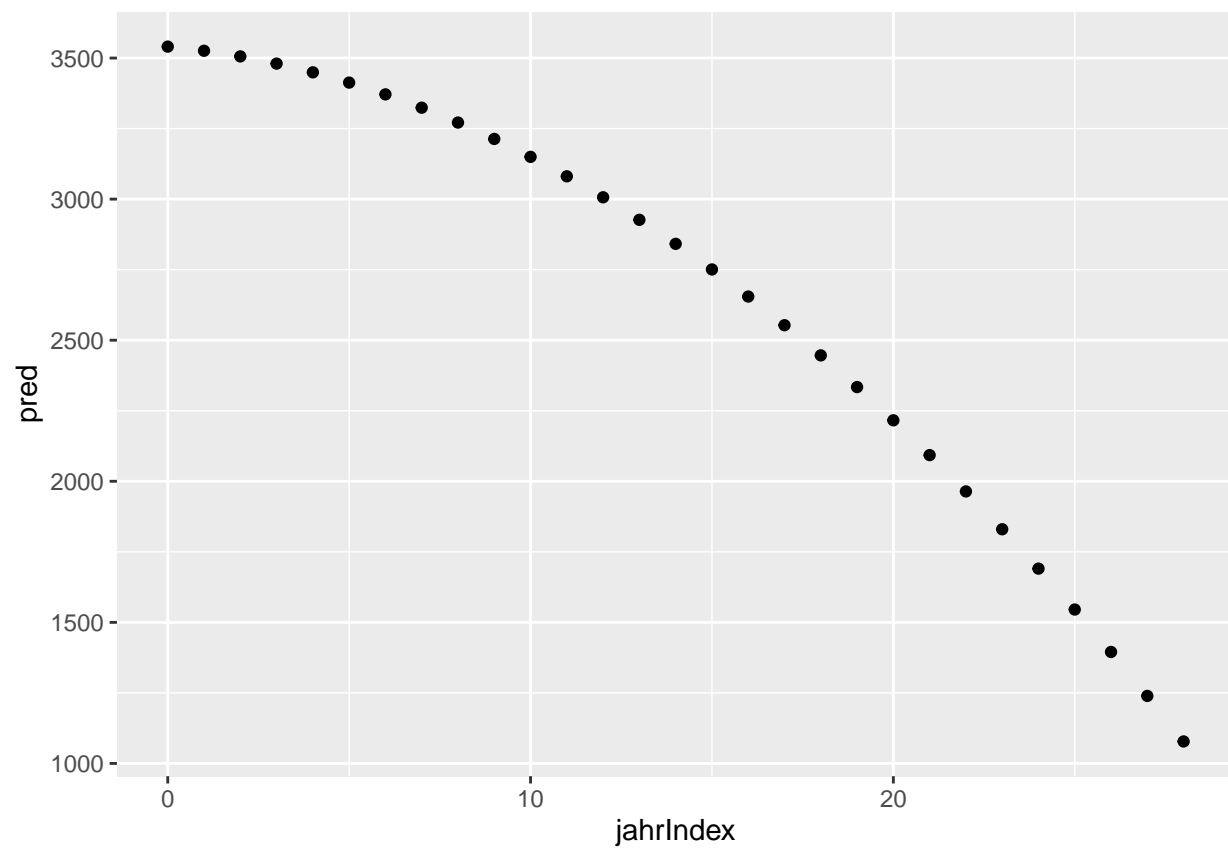
3.4.1. Berlin, Mehrfamiliengebäude, Prognose der CO2-Emission aus Beheizung 2019 - 2030 in Mio. t (Trend Polynom 2. Grades)



| ## | abrechnungsjahr | pred |
|-------|-----------------|----------|
| ## 1 | 2002 | 3540.447 |
| ## 2 | 2003 | 3525.819 |
| ## 3 | 2004 | 3505.760 |
| ## 4 | 2005 | 3480.270 |
| ## 5 | 2006 | 3449.349 |
| ## 6 | 2007 | 3412.996 |
| ## 7 | 2008 | 3371.213 |
| ## 8 | 2009 | 3323.999 |
| ## 9 | 2010 | 3271.354 |
| ## 10 | 2011 | 3213.279 |
| ## 11 | 2012 | 3149.772 |
| ## 12 | 2013 | 3080.834 |
| ## 13 | 2014 | 3006.465 |
| ## 14 | 2015 | 2926.665 |
| ## 15 | 2016 | 2841.435 |
| ## 16 | 2017 | 2750.773 |

```
## 17      2018 2654.680
## 18      2019 2553.157
## 19      2020 2446.202
## 20      2021 2333.817
## 21      2022 2216.000
## 22      2023 2092.753
## 23      2024 1964.075
## 24      2025 1829.965
## 25      2026 1690.425
## 26      2027 1545.454
## 27      2028 1395.052
## 28      2029 1239.219
## 29      2030 1077.955
```

Johannes used to use the index of the years, with 0 for 2002, 1 for 2003, and so on. I should do the same:



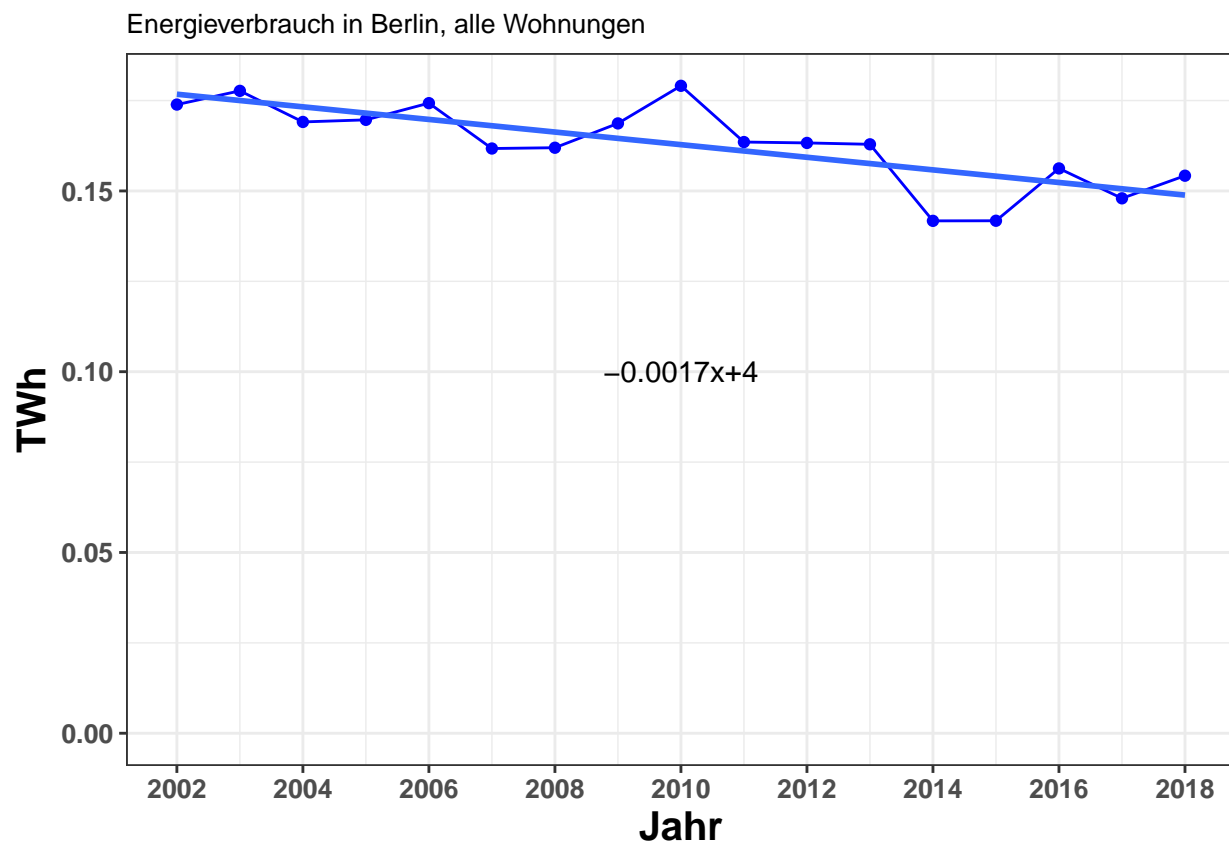
Apparently makes no difference...

3.5. Diskussion

4. Heizenergieverbrauch nach Stadtbezirken 2002 - 2018, alle Wohngebäude

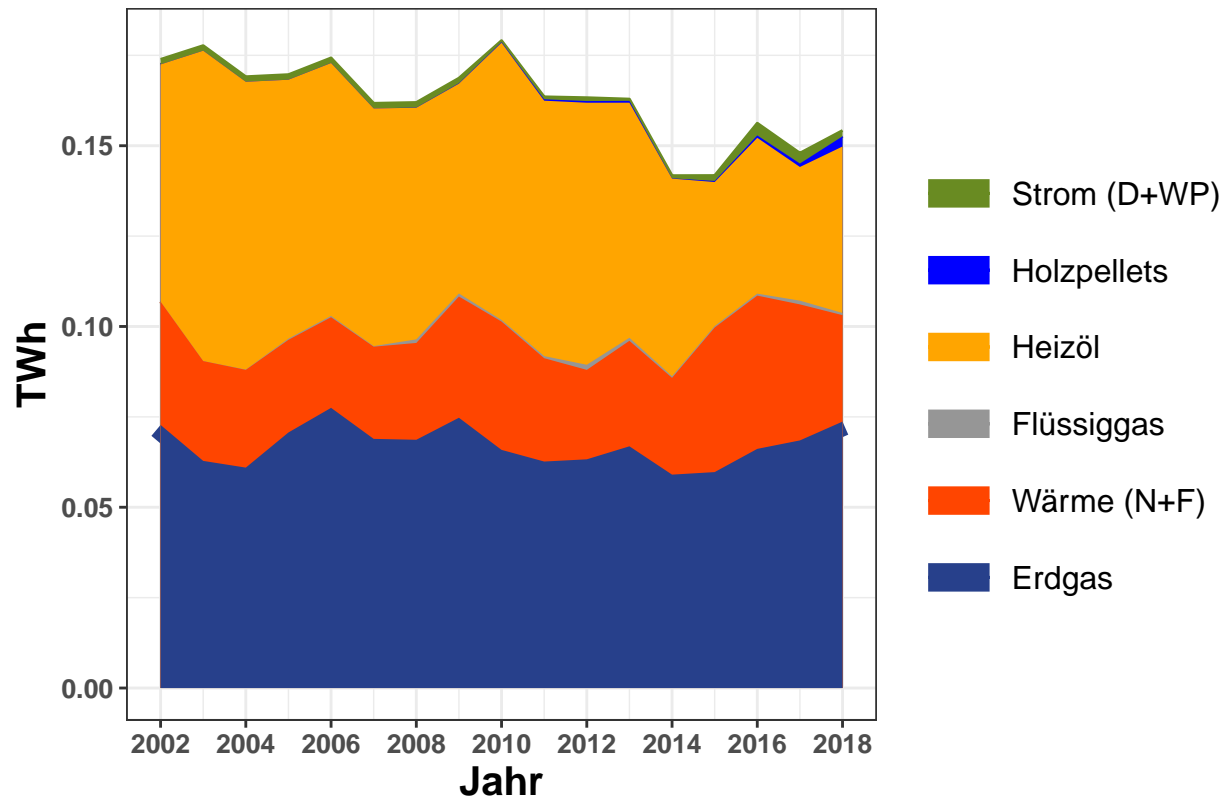
4.1. Stadtbezirke, alle Wohngebäude, Heizenergieverbrauch 2002 - 2018

- `getAllBezirkeTotalCO2.R` and `getAllBezirkeByETCO2.R` both invoke `mainScriptCO2Emissions_v2.R`.
- `mainScriptCO2Emissions_v2.R` creates the attribute `energy_shares_absolute`. This is the energy produced by the respective ETs.
- So modify the returned object in `getAllBezirkeTotalCO2.R` and `getAllBezirkeByETCO2.R` so that it includes the `energy_shares_absolute` as well.
- Total energy split by ET:



| Berlin, alle Wohngebäude, Heizenergieverbrauch | |
|---|------|
| Jahr | TWh |
| 2002 | 0.17 |
| 2003 | 0.18 |
| 2004 | 0.17 |
| 2005 | 0.17 |
| 2006 | 0.17 |
| 2007 | 0.16 |
| 2008 | 0.16 |
| 2009 | 0.17 |
| 2010 | 0.18 |
| 2011 | 0.16 |
| 2012 | 0.16 |
| 2013 | 0.16 |
| 2014 | 0.14 |
| 2015 | 0.14 |
| 2016 | 0.16 |
| 2017 | 0.15 |
| 2018 | 0.15 |

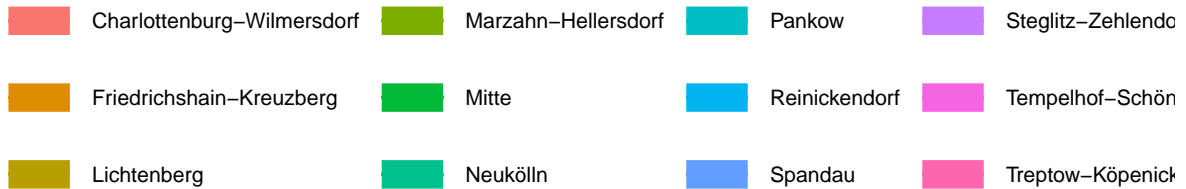
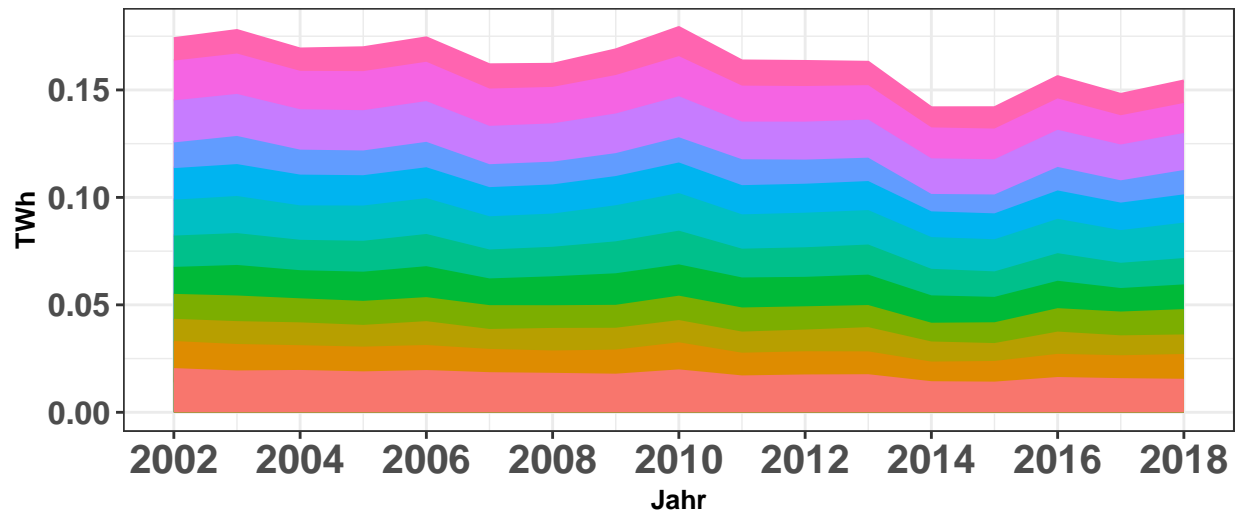
Energieverbrauch in Berlin, alle Wohngebäude, nach Energieträgern



| Berlin, alle Wohngebäude, Heizenergieverbrauch nach Energieträgern (TWh) | | | | | | | |
|--|--------|-------|------------|--------|-------------|-------|--------|
| Jahr | Erdgas | Wärme | Flüssiggas | Heizöl | Holzpellets | Strom | Gesamt |
| 2002 | 0.073 | 0.034 | 0 | 0.066 | 0 | 0.001 | 0.174 |
| 2003 | 0.063 | 0.028 | 0 | 0.086 | 0 | 0.001 | 0.178 |
| 2004 | 0.061 | 0.027 | 0 | 0.08 | 0 | 0.001 | 0.169 |
| 2005 | 0.071 | 0.026 | 0 | 0.072 | 0 | 0.001 | 0.17 |
| 2006 | 0.077 | 0.025 | 0 | 0.07 | 0 | 0.001 | 0.174 |
| 2007 | 0.069 | 0.025 | 0 | 0.066 | 0 | 0.001 | 0.162 |
| 2008 | 0.069 | 0.027 | 0.001 | 0.064 | 0 | 0.001 | 0.162 |
| 2009 | 0.075 | 0.034 | 0.001 | 0.058 | 0 | 0.001 | 0.169 |
| 2010 | 0.066 | 0.035 | 0 | 0.077 | 0 | 0 | 0.179 |
| 2011 | 0.063 | 0.029 | 0.001 | 0.071 | 0 | 0.001 | 0.164 |
| 2012 | 0.063 | 0.025 | 0.001 | 0.072 | 0 | 0.001 | 0.163 |
| 2013 | 0.067 | 0.029 | 0.001 | 0.065 | 0.001 | 0 | 0.163 |
| 2014 | 0.059 | 0.027 | 0 | 0.055 | 0 | 0.001 | 0.142 |
| 2015 | 0.06 | 0.04 | 0 | 0.04 | 0 | 0.001 | 0.142 |
| 2016 | 0.066 | 0.042 | 0.001 | 0.043 | 0.001 | 0.003 | 0.156 |
| 2017 | 0.068 | 0.038 | 0.001 | 0.037 | 0.001 | 0.003 | 0.148 |
| 2018 | 0.074 | 0.029 | 0.001 | 0.046 | 0.003 | 0.002 | 0.154 |

- Total energy split by bezirk:

Energieverbrauch in Berlin, alle Wohngebäude, nach Bezirk



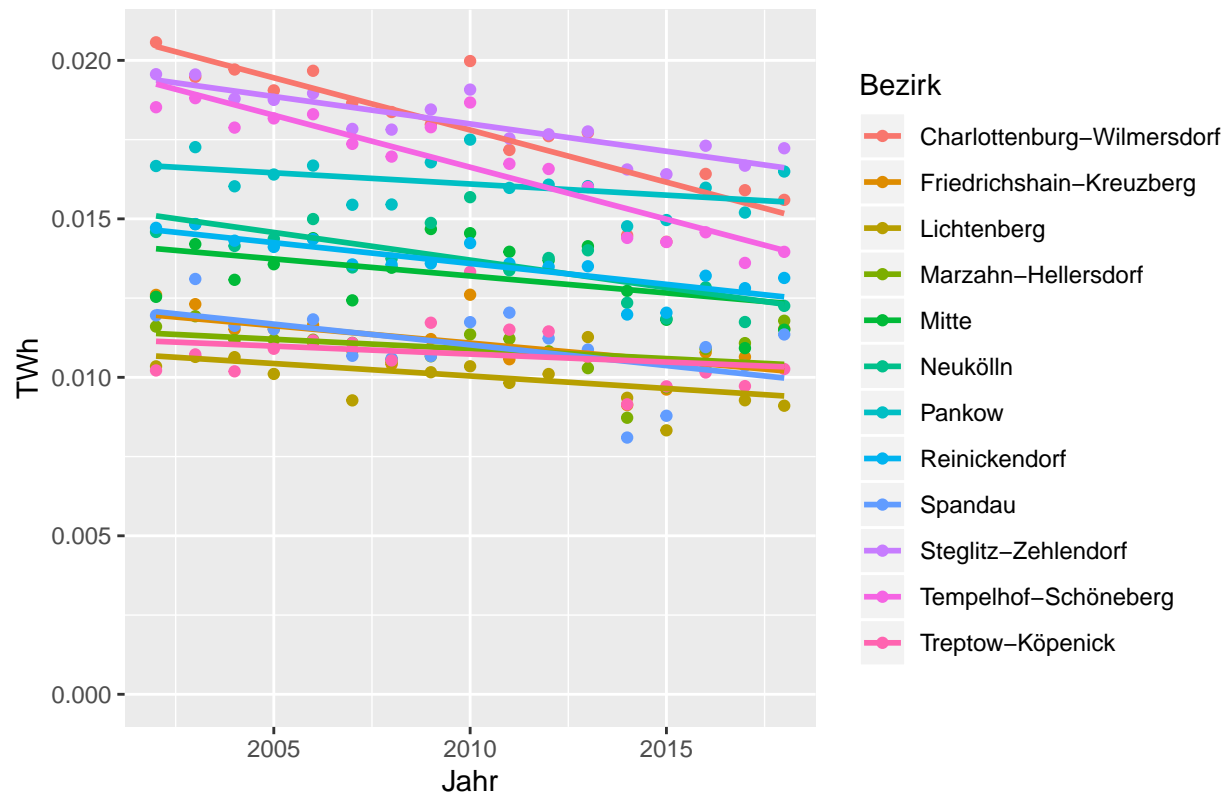
| Berliner, alle Wohngebäude, Heizenergieverbrauch nach Bezirken (TWh) | | | | | | |
|--|----------------------------|--------------------------|-------------|---------------------|-------|----------|
| Jahr | Charlottenburg-Wilmersdorf | Friedrichshain-Kreuzberg | Lichtenberg | Marzahn-Hellersdorf | Mitte | Neukölln |
| 2002 | 0.021 | 0.013 | 0.01 | 0.012 | 0.013 | 0.015 |
| 2003 | 0.019 | 0.012 | 0.011 | 0.012 | 0.014 | 0.015 |
| 2004 | 0.02 | 0.012 | 0.011 | 0.011 | 0.013 | 0.014 |
| 2005 | 0.019 | 0.012 | 0.01 | 0.011 | 0.014 | 0.014 |
| 2006 | 0.02 | 0.012 | 0.011 | 0.011 | 0.014 | 0.015 |
| 2007 | 0.019 | 0.011 | 0.009 | 0.011 | 0.012 | 0.013 |
| 2008 | 0.018 | 0.01 | 0.01 | 0.011 | 0.013 | 0.014 |
| 2009 | 0.018 | 0.011 | 0.01 | 0.011 | 0.015 | 0.015 |
| 2010 | 0.02 | 0.013 | 0.01 | 0.011 | 0.015 | 0.016 |
| 2011 | 0.017 | 0.011 | 0.01 | 0.011 | 0.014 | 0.013 |
| 2012 | 0.018 | 0.011 | 0.01 | 0.011 | 0.014 | 0.014 |
| 2013 | 0.018 | 0.011 | 0.011 | 0.01 | 0.014 | 0.014 |
| 2014 | 0.014 | 0.009 | 0.009 | 0.009 | 0.013 | 0.012 |
| 2015 | 0.014 | 0.01 | 0.008 | 0.01 | 0.012 | 0.012 |
| 2016 | 0.016 | 0.011 | 0.01 | 0.011 | 0.013 | 0.013 |
| 2017 | 0.016 | 0.011 | 0.009 | 0.011 | 0.011 | 0.012 |
| 2018 | 0.016 | 0.012 | 0.009 | 0.012 | 0.012 | 0.012 |

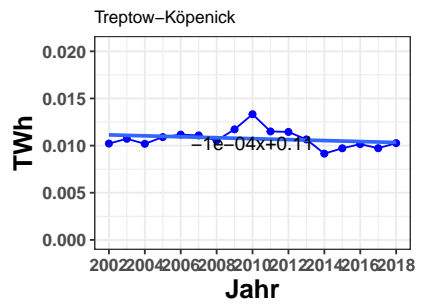
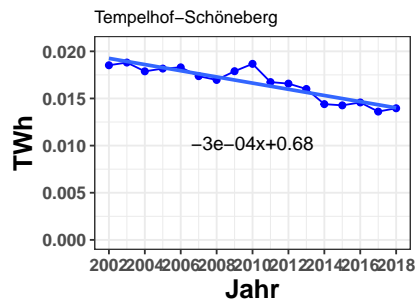
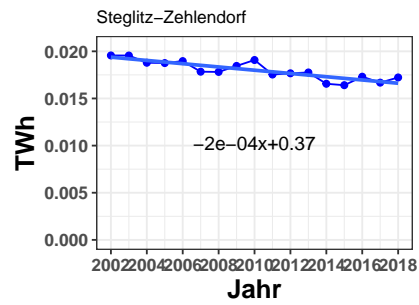
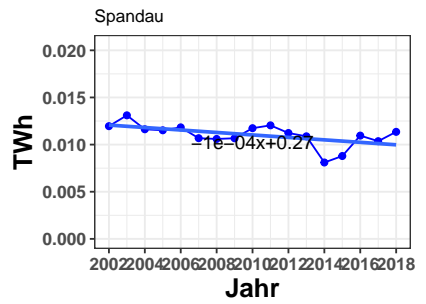
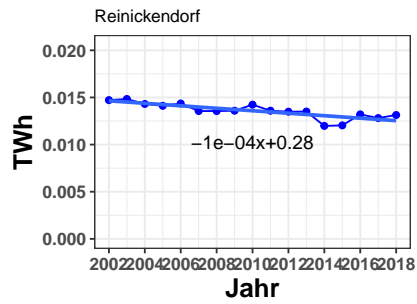
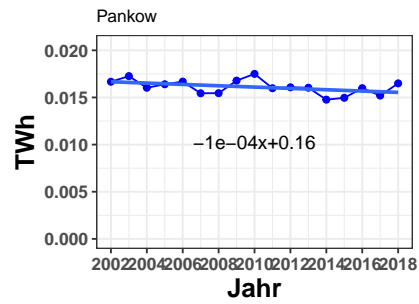
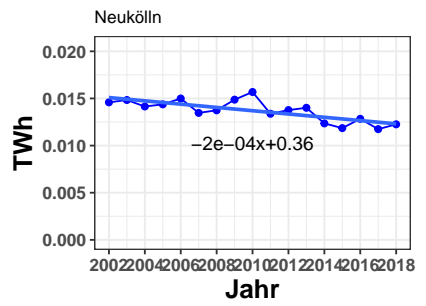
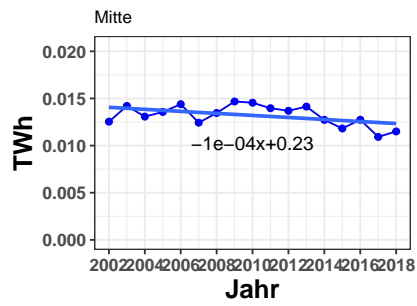
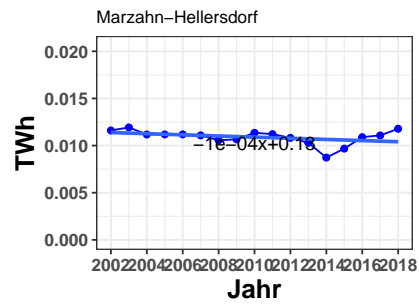
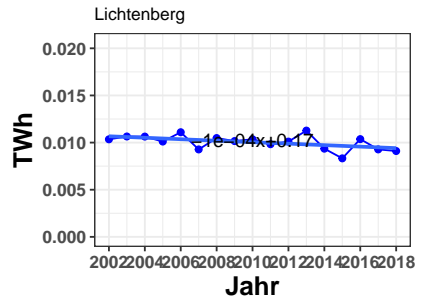
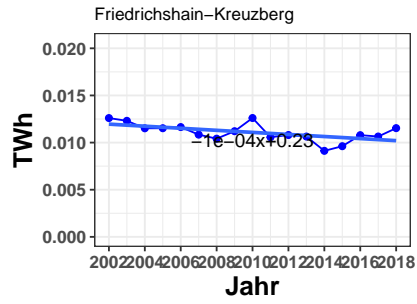
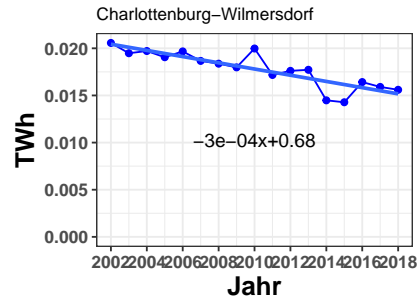
| Berliner, alle Wohngebäude, Heizenergieverbrauch nach Bezirken (TWh) | | | | | | |
|--|--------|---------------|---------|---------------------|----------------------|------------------|
| Jahr | Pankow | Reinickendorf | Spandau | Steglitz–Zehlendorf | Tempelhof–Schöneberg | Treptow–Köpenick |
| 2002 | 0.017 | 0.015 | 0.012 | 0.02 | 0.019 | 0.01 |
| 2003 | 0.017 | 0.015 | 0.013 | 0.02 | 0.019 | 0.011 |
| 2004 | 0.016 | 0.014 | 0.012 | 0.019 | 0.018 | 0.01 |
| 2005 | 0.016 | 0.014 | 0.012 | 0.019 | 0.018 | 0.011 |
| 2006 | 0.017 | 0.014 | 0.012 | 0.019 | 0.018 | 0.011 |
| 2007 | 0.015 | 0.014 | 0.011 | 0.018 | 0.017 | 0.011 |
| 2008 | 0.015 | 0.014 | 0.011 | 0.018 | 0.017 | 0.011 |
| 2009 | 0.017 | 0.014 | 0.011 | 0.018 | 0.018 | 0.012 |
| 2010 | 0.017 | 0.014 | 0.012 | 0.019 | 0.019 | 0.013 |
| 2011 | 0.016 | 0.014 | 0.012 | 0.018 | 0.017 | 0.012 |
| 2012 | 0.016 | 0.013 | 0.011 | 0.018 | 0.017 | 0.011 |
| 2013 | 0.016 | 0.014 | 0.011 | 0.018 | 0.016 | 0.011 |
| 2014 | 0.015 | 0.012 | 0.008 | 0.017 | 0.014 | 0.009 |
| 2015 | 0.015 | 0.012 | 0.009 | 0.016 | 0.014 | 0.01 |
| 2016 | 0.016 | 0.013 | 0.011 | 0.017 | 0.015 | 0.01 |
| 2017 | 0.015 | 0.013 | 0.01 | 0.017 | 0.014 | 0.01 |
| 2018 | 0.016 | 0.013 | 0.011 | 0.017 | 0.014 | 0.01 |

4.2. Stadtbezirke, alle Wohngebäude, Heizenergieverbrauch 2002 - 2018

Eine Grafik: Heizenergieverbrauch aller 12 Bezirke in einer Grafik) One Graph: All 12 lines in a single graph.

Energieverbrauch in Stadtbezirken, alle Wohngebäude





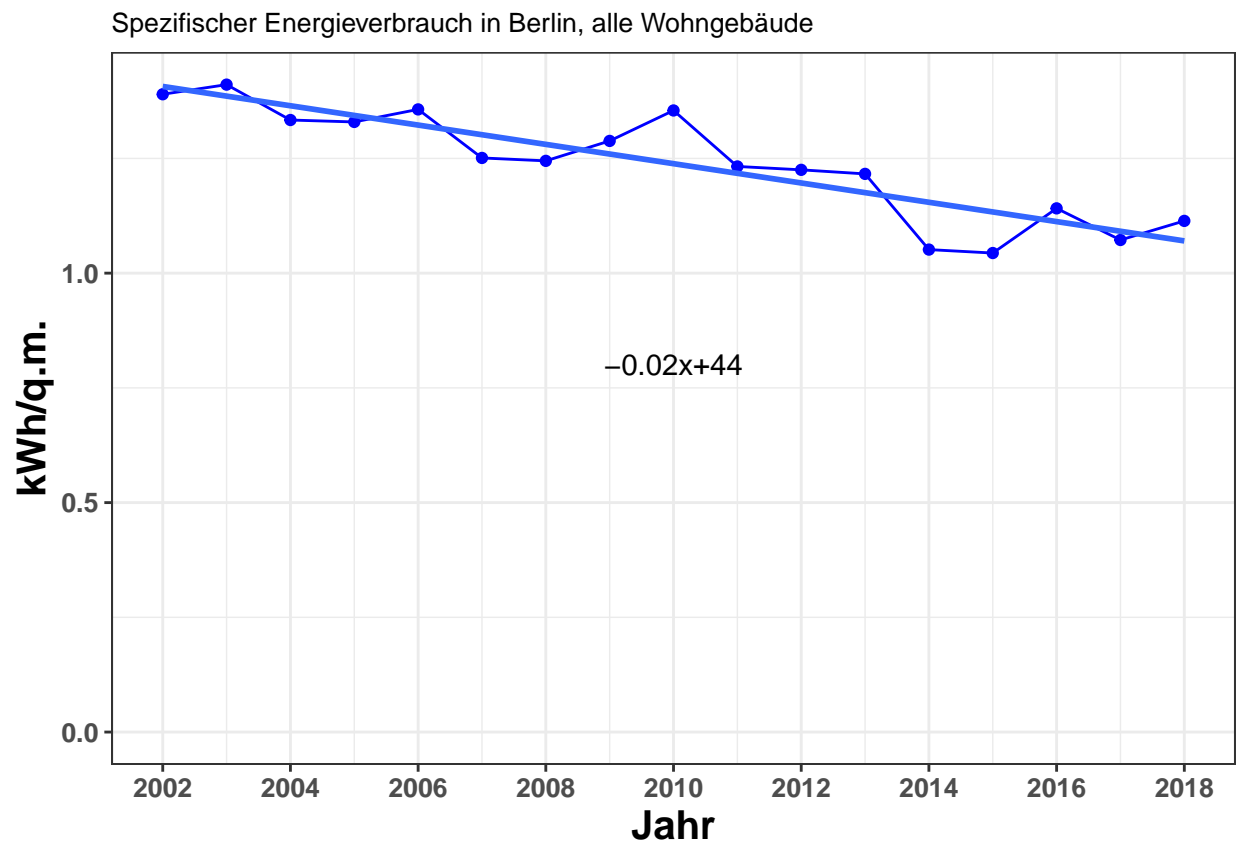
| Berliner, alle Wohngebäude, Heizenergieverbrauch nach Bezirken (TWh) | | | | | | |
|--|-------------------------------|------------------------------|-------------|-------------------------|-------|----------|
| Jahr | Charlottenburg- Wilmerdorf | Friedrichshain- Kreuzberg | Lichtenberg | Marzahn- Hellersdorf | Mitte | Neukölln |
| 2002 | 0.021 | 0.013 | 0.01 | 0.012 | 0.013 | 0.015 |
| 2003 | 0.019 | 0.012 | 0.011 | 0.012 | 0.014 | 0.015 |
| 2004 | 0.02 | 0.012 | 0.011 | 0.011 | 0.013 | 0.014 |
| 2005 | 0.019 | 0.012 | 0.01 | 0.011 | 0.014 | 0.014 |
| 2006 | 0.02 | 0.012 | 0.011 | 0.011 | 0.014 | 0.015 |
| 2007 | 0.019 | 0.011 | 0.009 | 0.011 | 0.012 | 0.013 |
| 2008 | 0.018 | 0.01 | 0.01 | 0.011 | 0.013 | 0.014 |
| 2009 | 0.018 | 0.011 | 0.01 | 0.011 | 0.015 | 0.015 |
| 2010 | 0.02 | 0.013 | 0.01 | 0.011 | 0.015 | 0.016 |
| 2011 | 0.017 | 0.011 | 0.01 | 0.011 | 0.014 | 0.013 |
| 2012 | 0.018 | 0.011 | 0.01 | 0.011 | 0.014 | 0.014 |
| 2013 | 0.018 | 0.011 | 0.011 | 0.01 | 0.014 | 0.014 |
| 2014 | 0.014 | 0.009 | 0.009 | 0.009 | 0.013 | 0.012 |
| 2015 | 0.014 | 0.01 | 0.008 | 0.01 | 0.012 | 0.012 |
| 2016 | 0.016 | 0.011 | 0.01 | 0.011 | 0.013 | 0.013 |
| 2017 | 0.016 | 0.011 | 0.009 | 0.011 | 0.011 | 0.012 |
| 2018 | 0.016 | 0.012 | 0.009 | 0.012 | 0.012 | 0.012 |

| Berliner, alle Wohngebäude, Heizenergieverbrauch nach Bezirken (TWh) | | | | | | |
|--|--------|---------------|---------|-------------------------|--------------------------|----------------------|
| Jahr | Pankow | Reinickendorf | Spandau | Steglitz- Zehlendorf | Tempelhof- Schöneberg | Treptow- Köpenick |
| 2002 | 0.017 | 0.015 | 0.012 | 0.02 | 0.019 | 0.01 |
| 2003 | 0.017 | 0.015 | 0.013 | 0.02 | 0.019 | 0.011 |
| 2004 | 0.016 | 0.014 | 0.012 | 0.019 | 0.018 | 0.01 |
| 2005 | 0.016 | 0.014 | 0.012 | 0.019 | 0.018 | 0.011 |
| 2006 | 0.017 | 0.014 | 0.012 | 0.019 | 0.018 | 0.011 |
| 2007 | 0.015 | 0.014 | 0.011 | 0.018 | 0.017 | 0.011 |
| 2008 | 0.015 | 0.014 | 0.011 | 0.018 | 0.017 | 0.011 |
| 2009 | 0.017 | 0.014 | 0.011 | 0.018 | 0.018 | 0.012 |
| 2010 | 0.017 | 0.014 | 0.012 | 0.019 | 0.019 | 0.013 |
| 2011 | 0.016 | 0.014 | 0.012 | 0.018 | 0.017 | 0.012 |
| 2012 | 0.016 | 0.013 | 0.011 | 0.018 | 0.017 | 0.011 |
| 2013 | 0.016 | 0.014 | 0.011 | 0.018 | 0.016 | 0.011 |
| 2014 | 0.015 | 0.012 | 0.008 | 0.017 | 0.014 | 0.009 |
| 2015 | 0.015 | 0.012 | 0.009 | 0.016 | 0.014 | 0.01 |
| 2016 | 0.016 | 0.013 | 0.011 | 0.017 | 0.015 | 0.01 |
| 2017 | 0.015 | 0.013 | 0.01 | 0.017 | 0.014 | 0.01 |
| 2018 | 0.016 | 0.013 | 0.011 | 0.017 | 0.014 | 0.01 |

4.3. Stadtbezirke, alle Wohngebäude, flächenbezogener Heizenergieverbrauch 2002 - 2018 in kWh/(m2[AN]*a)

- `bezirk_areas_all$total` gives the total areas of berlin (MFH+SFH).

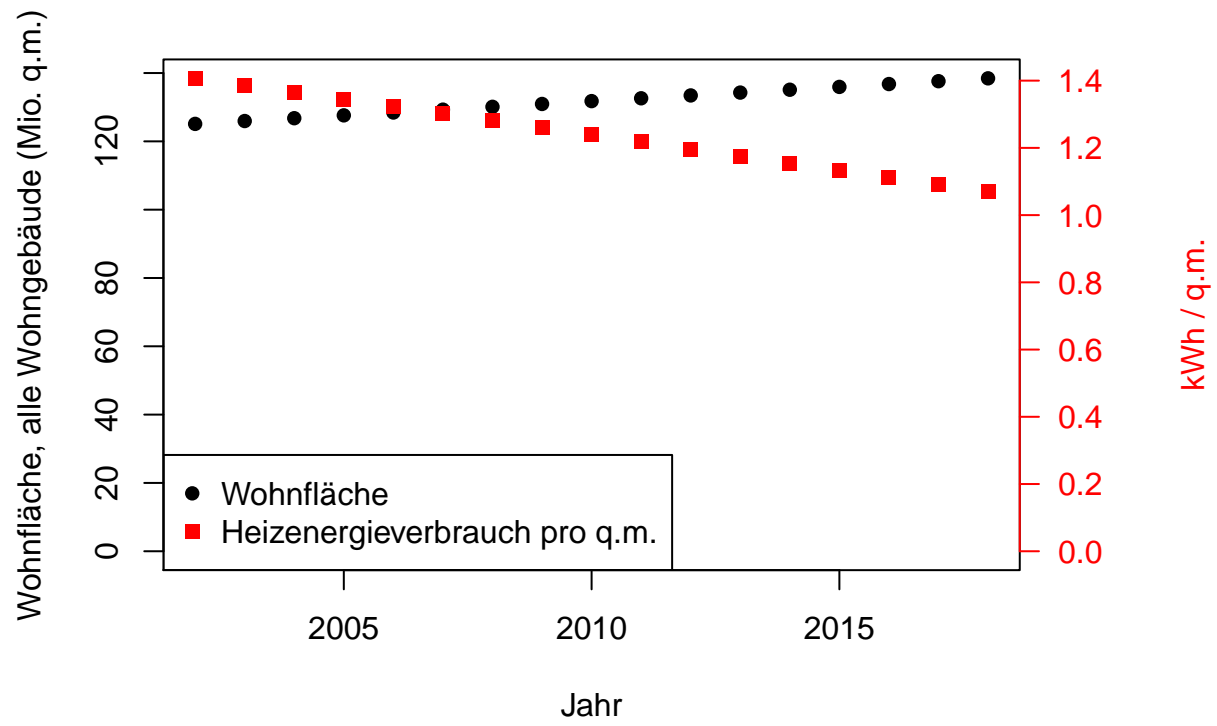
- `aes_by_ET_TWh$total` gives the total TWh consumption.
- So the quotient will give the per unit area consumption.



| Berlin, alle Wohngebäude, spezifischer Heizenergieverbrauch | |
|--|-------------------|
| Jahr | kWh / q.m. |
| 2002 | 1.39 |
| 2003 | 1.41 |
| 2004 | 1.33 |
| 2005 | 1.33 |
| 2006 | 1.36 |
| 2007 | 1.25 |
| 2008 | 1.24 |
| 2009 | 1.29 |
| 2010 | 1.35 |
| 2011 | 1.23 |
| 2012 | 1.23 |
| 2013 | 1.22 |
| 2014 | 1.05 |
| 2015 | 1.04 |
| 2016 | 1.14 |
| 2017 | 1.07 |
| 2018 | 1.11 |

4.4. Stadtbezirke, alle Wohngebäude, flächenbezogener Heizenergieverbrauch und beheizte Wohnfläche 2002 - 2018

Plot of the total area (to be combined with the specific energy consumption into one picture):

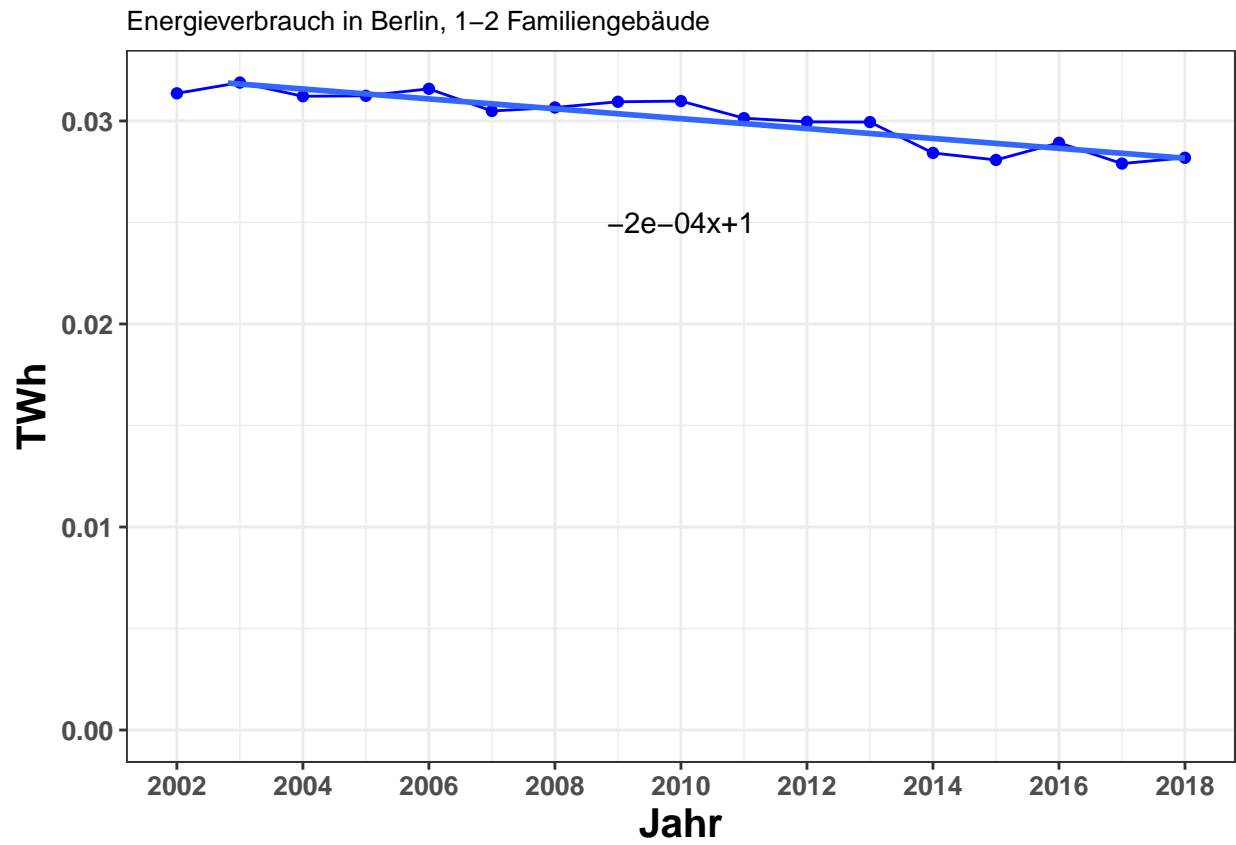


| Berlin, alle Wohngebäude | | |
|--------------------------|---------------------------|---|
| Jahr | Wohnfläche (Mio. q.m.) | spezifischer Heizenergie- verbrauch (kWh/q.m.) |
| 2002 | 125.11 | 1.39 |
| 2003 | 125.95 | 1.41 |
| 2004 | 126.78 | 1.33 |
| 2005 | 127.61 | 1.33 |
| 2006 | 128.45 | 1.36 |
| 2007 | 129.28 | 1.25 |
| 2008 | 130.11 | 1.24 |
| 2009 | 130.95 | 1.29 |
| 2010 | 132.21 | 1.35 |
| 2011 | 132.68 | 1.23 |
| 2012 | 133.28 | 1.23 |
| 2013 | 133.93 | 1.22 |
| 2014 | 134.8 | 1.05 |
| 2015 | 135.8 | 1.04 |
| 2016 | 136.9 | 1.14 |
| 2017 | 137.98 | 1.07 |
| 2018 | 138.45 | 1.11 |

5. Heizenergieverbrauch nach Stadtbezirken 2002 - 2018, 1-2 Familiengebäude

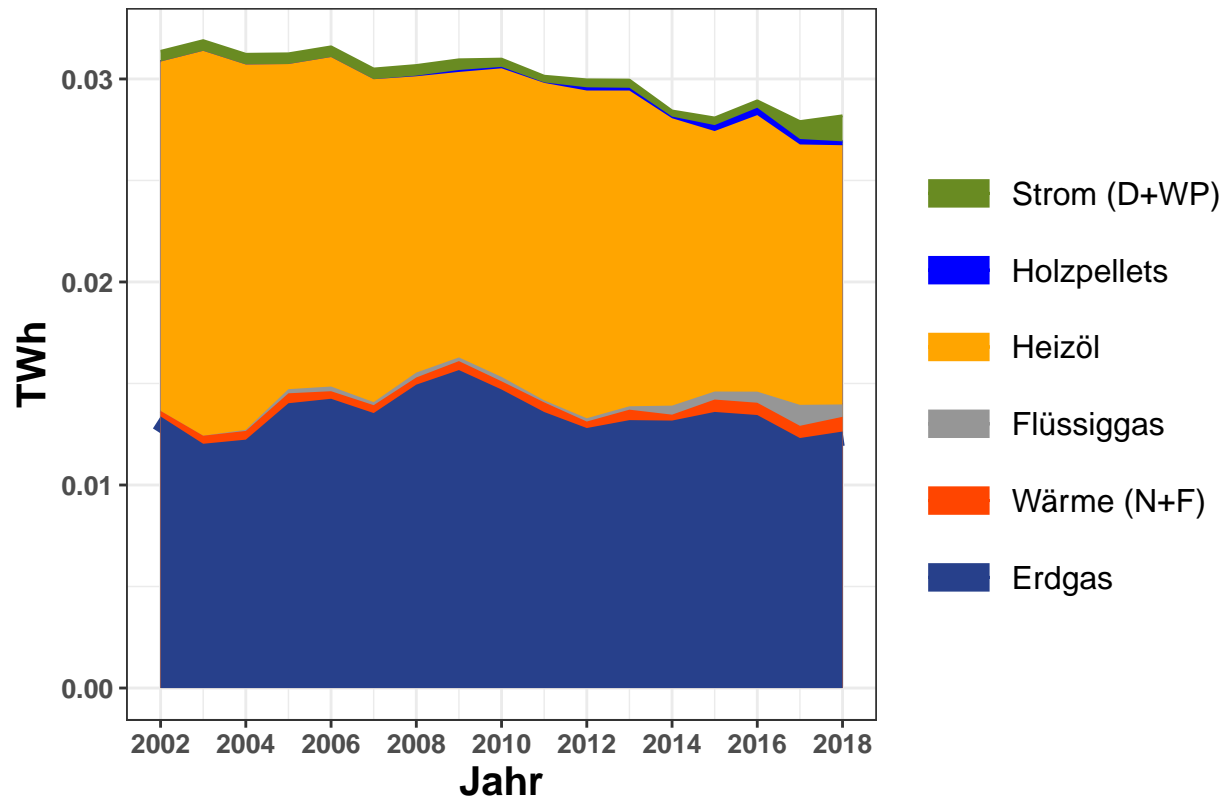
5.1. Stadtbezirke, 1-2 Familiengebäude, Heizenergieverbrauch 2002 - 2018 summiert

- Total energy split by ET:



| Berlin, 1–2 Familiengebäude, Heizenergieverbrauch | |
|--|------------|
| Jahr | TWh |
| 2002 | 0.03136 |
| 2003 | 0.03189 |
| 2004 | 0.03122 |
| 2005 | 0.03124 |
| 2006 | 0.03158 |
| 2007 | 0.03049 |
| 2008 | 0.03066 |
| 2009 | 0.03094 |
| 2010 | 0.03098 |
| 2011 | 0.03014 |
| 2012 | 0.02996 |
| 2013 | 0.02995 |
| 2014 | 0.02842 |
| 2015 | 0.02808 |
| 2016 | 0.02892 |
| 2017 | 0.0279 |
| 2018 | 0.02819 |

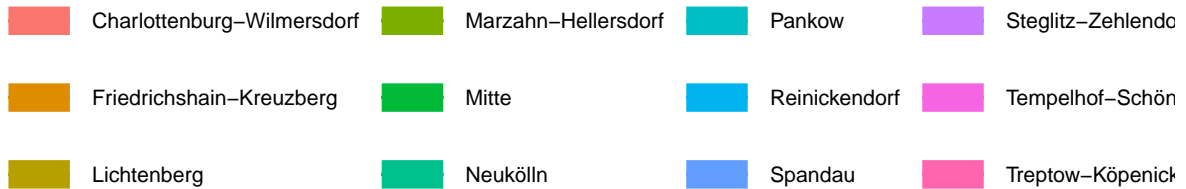
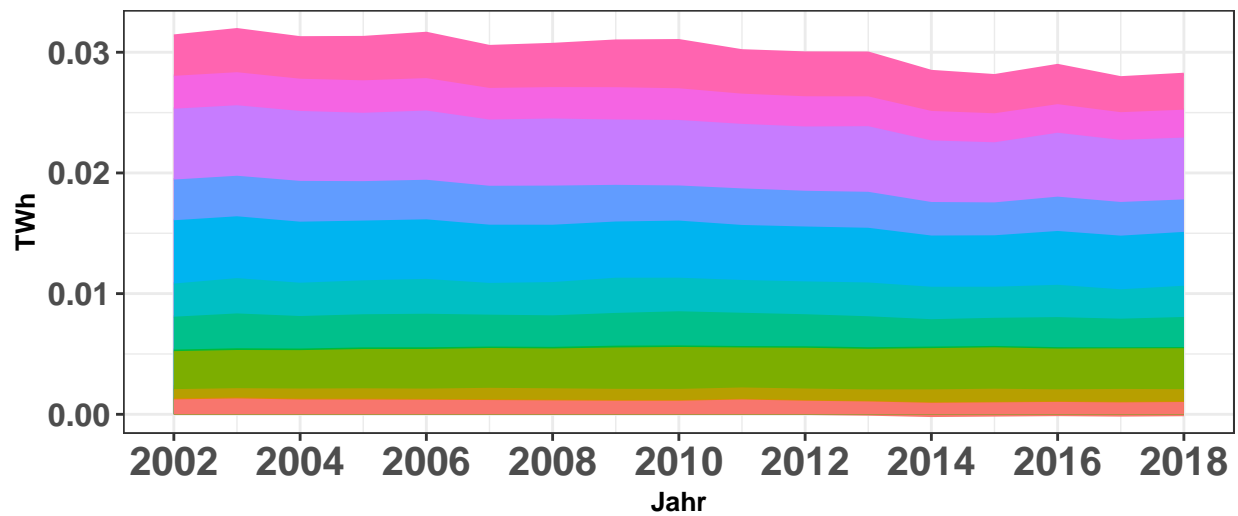
Energieverbrauch in Berlin, 1–2 Familiengebäude, nach Energieträgern



| Berlin, 1–2 Familiengebäude, Heizenergieverbrauch nach Energieträgern (TWh) | | | | | | | |
|---|--------|-------|------------|--------|-------------|-------|--------|
| Jahr | Erdgas | Wärme | Flüssiggas | Heizöl | Holzpellets | Strom | Gesamt |
| 2002 | 0.013 | 0 | 0 | 0.017 | 0 | 0.001 | 0.031 |
| 2003 | 0.012 | 0 | 0 | 0.019 | 0 | 0.001 | 0.032 |
| 2004 | 0.012 | 0 | 0 | 0.018 | 0 | 0.001 | 0.031 |
| 2005 | 0.014 | 0 | 0 | 0.016 | 0 | 0.001 | 0.031 |
| 2006 | 0.014 | 0 | 0 | 0.016 | 0 | 0.001 | 0.032 |
| 2007 | 0.014 | 0 | 0 | 0.016 | 0 | 0.001 | 0.03 |
| 2008 | 0.015 | 0 | 0 | 0.015 | 0 | 0.001 | 0.031 |
| 2009 | 0.016 | 0 | 0 | 0.014 | 0 | 0.001 | 0.031 |
| 2010 | 0.015 | 0 | 0 | 0.015 | 0 | 0 | 0.031 |
| 2011 | 0.014 | 0 | 0 | 0.016 | 0 | 0 | 0.03 |
| 2012 | 0.013 | 0 | 0 | 0.016 | 0 | 0 | 0.03 |
| 2013 | 0.013 | 0.001 | 0 | 0.016 | 0 | 0 | 0.03 |
| 2014 | 0.013 | 0 | 0 | 0.014 | 0 | 0 | 0.028 |
| 2015 | 0.014 | 0.001 | 0 | 0.013 | 0 | 0 | 0.028 |
| 2016 | 0.013 | 0.001 | 0.001 | 0.014 | 0 | 0 | 0.029 |
| 2017 | 0.012 | 0.001 | 0.001 | 0.013 | 0 | 0.001 | 0.028 |
| 2018 | 0.013 | 0.001 | 0.001 | 0.013 | 0 | 0.001 | 0.028 |

- Total energy split by bezirk:

Energieverbrauch in Berlin, 1–2 Familiengebäude, nach Bezirk



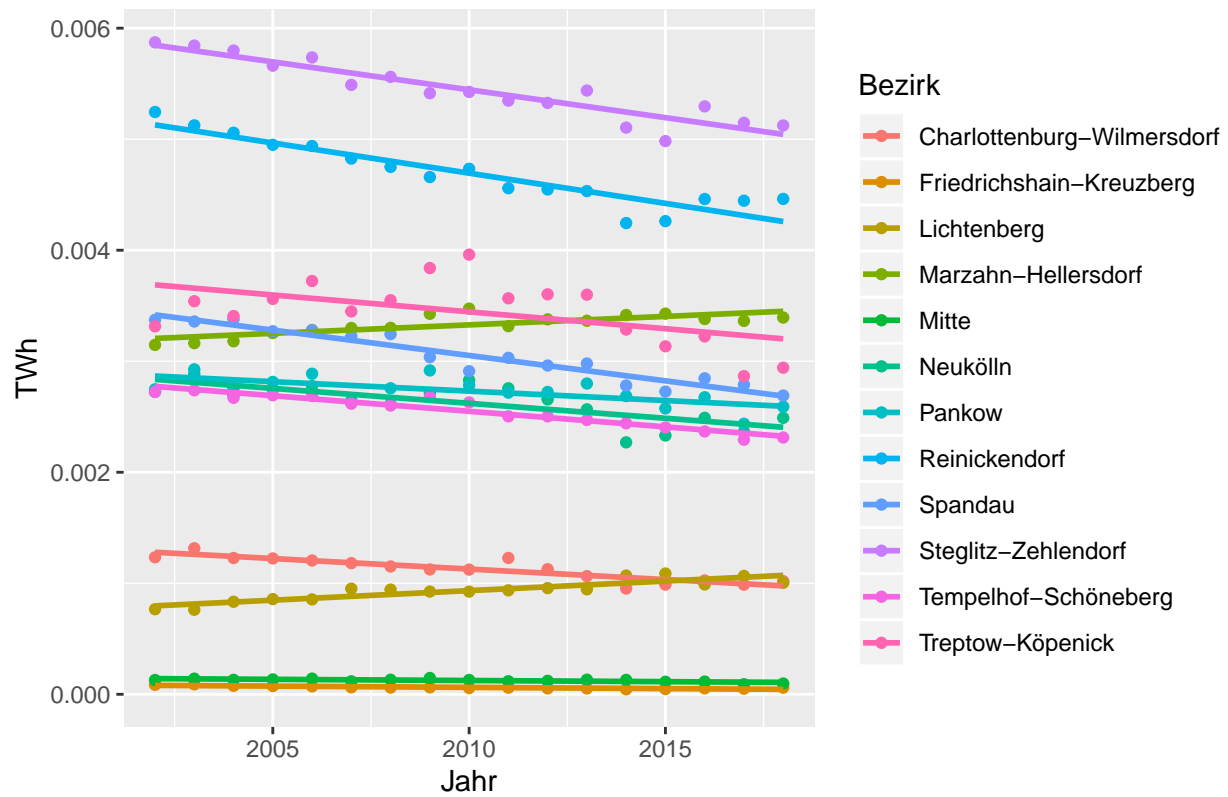
| Berliner, 1–2 Familiengebäude, Heizenergieverbrauch nach Bezirken (TWh) | | | | | | |
|---|----------------------------|--------------------------|-------------|---------------------|-------|----------|
| Jahr | Charlottenburg-Wilmersdorf | Friedrichshain-Kreuzberg | Lichtenberg | Marzahn-Hellersdorf | Mitte | Neukölln |
| 2002 | 0.001 | 0 | 0.001 | 0.003 | 0 | 0.003 |
| 2003 | 0.001 | 0 | 0.001 | 0.003 | 0 | 0.003 |
| 2004 | 0.001 | 0 | 0.001 | 0.003 | 0 | 0.003 |
| 2005 | 0.001 | 0 | 0.001 | 0.003 | 0 | 0.003 |
| 2006 | 0.001 | 0 | 0.001 | 0.003 | 0 | 0.003 |
| 2007 | 0.001 | 0 | 0.001 | 0.003 | 0 | 0.003 |
| 2008 | 0.001 | 0 | 0.001 | 0.003 | 0 | 0.003 |
| 2009 | 0.001 | 0 | 0.001 | 0.003 | 0 | 0.003 |
| 2010 | 0.001 | 0 | 0.001 | 0.003 | 0 | 0.003 |
| 2011 | 0.001 | 0 | 0.001 | 0.003 | 0 | 0.003 |
| 2012 | 0.001 | 0 | 0.001 | 0.003 | 0 | 0.003 |
| 2013 | 0.001 | 0 | 0.001 | 0.003 | 0 | 0.003 |
| 2014 | 0.001 | 0 | 0.001 | 0.003 | 0 | 0.002 |
| 2015 | 0.001 | 0 | 0.001 | 0.003 | 0 | 0.002 |
| 2016 | 0.001 | 0 | 0.001 | 0.003 | 0 | 0.002 |
| 2017 | 0.001 | 0 | 0.001 | 0.003 | 0 | 0.002 |
| 2018 | 0.001 | 0 | 0.001 | 0.003 | 0 | 0.002 |

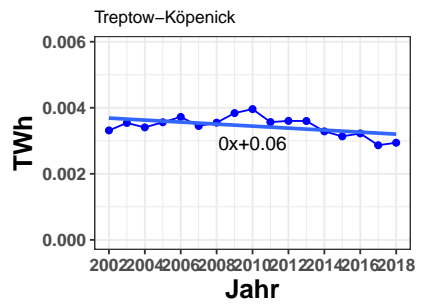
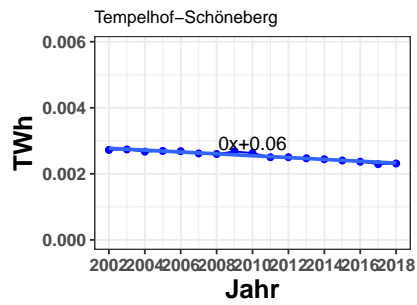
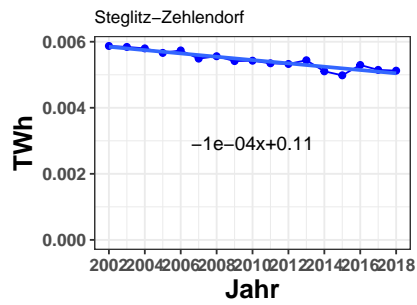
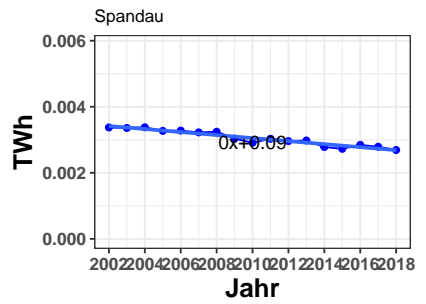
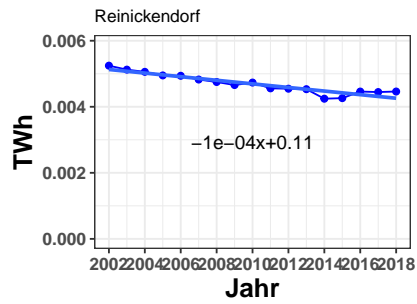
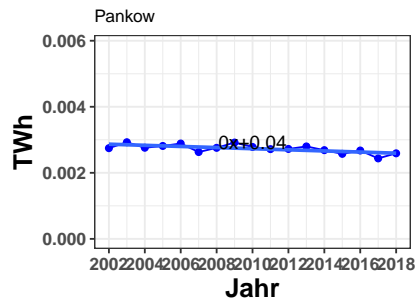
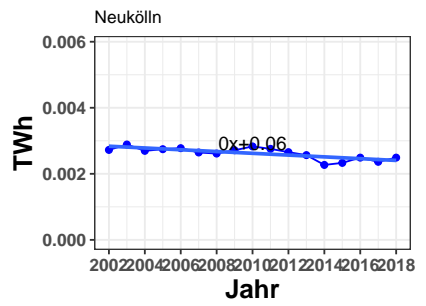
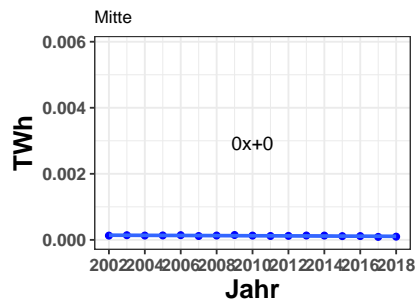
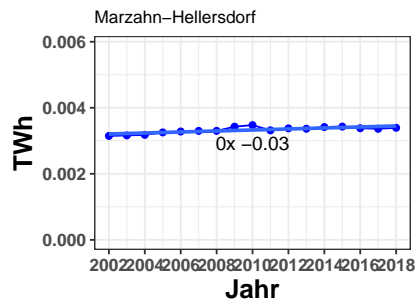
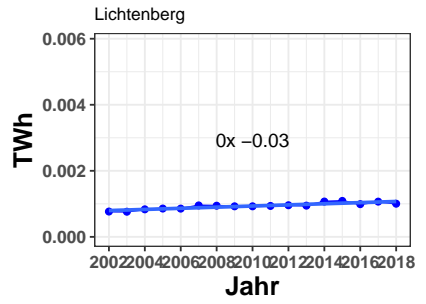
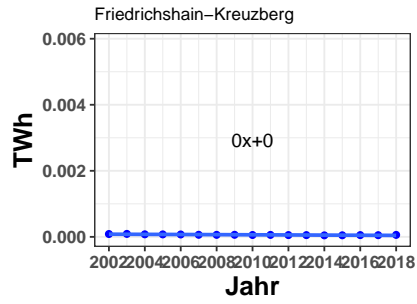
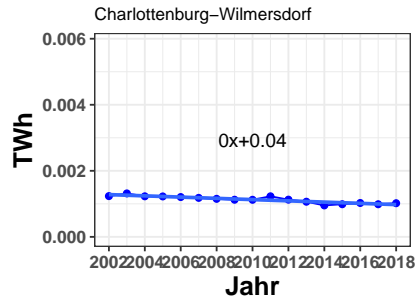
| Berliner, 1–2 Familiengebäude, Heizenergieverbrauch nach Bezirken (TWh) | | | | | | |
|---|--------|---------------|---------|---------------------|----------------------|------------------|
| Jahr | Pankow | Reinickendorf | Spandau | Steglitz–Zehlendorf | Tempelhof–Schöneberg | Treptow–Köpenick |
| 2002 | 0.003 | 0.005 | 0.003 | 0.006 | 0.003 | 0.003 |
| 2003 | 0.003 | 0.005 | 0.003 | 0.006 | 0.003 | 0.004 |
| 2004 | 0.003 | 0.005 | 0.003 | 0.006 | 0.003 | 0.003 |
| 2005 | 0.003 | 0.005 | 0.003 | 0.006 | 0.003 | 0.004 |
| 2006 | 0.003 | 0.005 | 0.003 | 0.006 | 0.003 | 0.004 |
| 2007 | 0.003 | 0.005 | 0.003 | 0.005 | 0.003 | 0.003 |
| 2008 | 0.003 | 0.005 | 0.003 | 0.006 | 0.003 | 0.004 |
| 2009 | 0.003 | 0.005 | 0.003 | 0.005 | 0.003 | 0.004 |
| 2010 | 0.003 | 0.005 | 0.003 | 0.005 | 0.003 | 0.004 |
| 2011 | 0.003 | 0.005 | 0.003 | 0.005 | 0.003 | 0.004 |
| 2012 | 0.003 | 0.005 | 0.003 | 0.005 | 0.003 | 0.004 |
| 2013 | 0.003 | 0.005 | 0.003 | 0.005 | 0.002 | 0.004 |
| 2014 | 0.003 | 0.004 | 0.003 | 0.005 | 0.002 | 0.003 |
| 2015 | 0.003 | 0.004 | 0.003 | 0.005 | 0.002 | 0.003 |
| 2016 | 0.003 | 0.004 | 0.003 | 0.005 | 0.002 | 0.003 |
| 2017 | 0.002 | 0.004 | 0.003 | 0.005 | 0.002 | 0.003 |
| 2018 | 0.003 | 0.004 | 0.003 | 0.005 | 0.002 | 0.003 |

5.2. Stadtbezirke, 1-2 Familiengebäude, Heizenergieverbrauch 2002 - 2018

(Eine Grafik: Heizenergieverbrauch aller 12 Bezirke in einer Grafik) One Graph: All 12 lines in a single graph.

Energieverbrauch in Stadtbezirken, 1–2 Familiengebäude

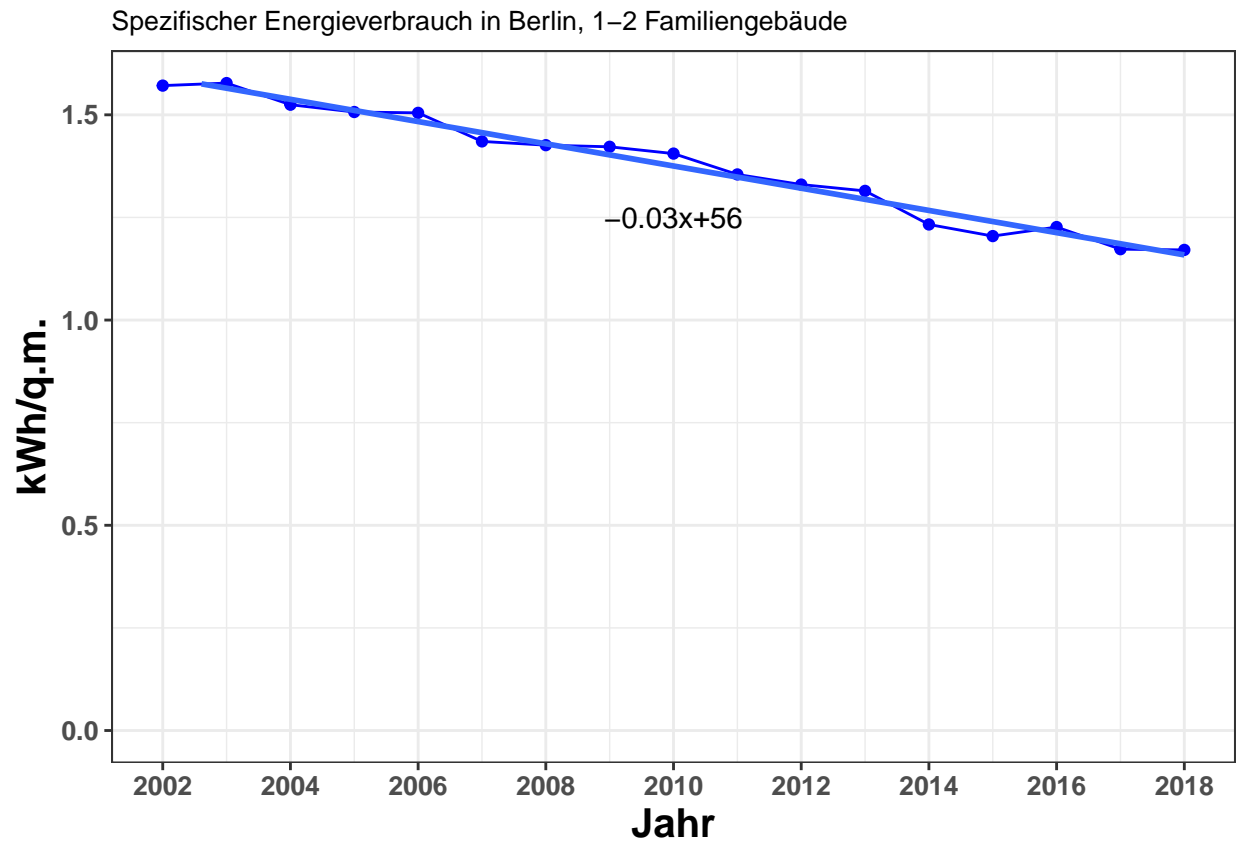




| Berliner, 1–2 Familiengebäude, Heizenergieverbrauch nach Bezirken (TWh) | | | | | | |
|---|-------------------------------|------------------------------|-------------|-------------------------|-------|----------|
| Jahr | Charlottenburg– Wilmerdorf | Friedrichshain– Kreuzberg | Lichtenberg | Marzahn– Hellersdorf | Mitte | Neukölln |
| 2002 | 0.001 | 0 | 0.001 | 0.003 | 0 | 0.003 |
| 2003 | 0.001 | 0 | 0.001 | 0.003 | 0 | 0.003 |
| 2004 | 0.001 | 0 | 0.001 | 0.003 | 0 | 0.003 |
| 2005 | 0.001 | 0 | 0.001 | 0.003 | 0 | 0.003 |
| 2006 | 0.001 | 0 | 0.001 | 0.003 | 0 | 0.003 |
| 2007 | 0.001 | 0 | 0.001 | 0.003 | 0 | 0.003 |
| 2008 | 0.001 | 0 | 0.001 | 0.003 | 0 | 0.003 |
| 2009 | 0.001 | 0 | 0.001 | 0.003 | 0 | 0.003 |
| 2010 | 0.001 | 0 | 0.001 | 0.003 | 0 | 0.003 |
| 2011 | 0.001 | 0 | 0.001 | 0.003 | 0 | 0.003 |
| 2012 | 0.001 | 0 | 0.001 | 0.003 | 0 | 0.003 |
| 2013 | 0.001 | 0 | 0.001 | 0.003 | 0 | 0.003 |
| 2014 | 0.001 | 0 | 0.001 | 0.003 | 0 | 0.002 |
| 2015 | 0.001 | 0 | 0.001 | 0.003 | 0 | 0.002 |
| 2016 | 0.001 | 0 | 0.001 | 0.003 | 0 | 0.002 |
| 2017 | 0.001 | 0 | 0.001 | 0.003 | 0 | 0.002 |
| 2018 | 0.001 | 0 | 0.001 | 0.003 | 0 | 0.002 |

| Berliner, 1–2 Familiengebäude, Heizenergieverbrauch nach Bezirken (TWh) | | | | | | |
|---|--------|---------------|---------|-------------------------|--------------------------|----------------------|
| Jahr | Pankow | Reinickendorf | Spandau | Steglitz– Zehlendorf | Tempelhof– Schöneberg | Treptow– Köpenick |
| 2002 | 0.003 | 0.005 | 0.003 | 0.006 | 0.003 | 0.003 |
| 2003 | 0.003 | 0.005 | 0.003 | 0.006 | 0.003 | 0.004 |
| 2004 | 0.003 | 0.005 | 0.003 | 0.006 | 0.003 | 0.003 |
| 2005 | 0.003 | 0.005 | 0.003 | 0.006 | 0.003 | 0.004 |
| 2006 | 0.003 | 0.005 | 0.003 | 0.006 | 0.003 | 0.004 |
| 2007 | 0.003 | 0.005 | 0.003 | 0.005 | 0.003 | 0.003 |
| 2008 | 0.003 | 0.005 | 0.003 | 0.006 | 0.003 | 0.004 |
| 2009 | 0.003 | 0.005 | 0.003 | 0.005 | 0.003 | 0.004 |
| 2010 | 0.003 | 0.005 | 0.003 | 0.005 | 0.003 | 0.004 |
| 2011 | 0.003 | 0.005 | 0.003 | 0.005 | 0.003 | 0.004 |
| 2012 | 0.003 | 0.005 | 0.003 | 0.005 | 0.003 | 0.004 |
| 2013 | 0.003 | 0.005 | 0.003 | 0.005 | 0.002 | 0.004 |
| 2014 | 0.003 | 0.004 | 0.003 | 0.005 | 0.002 | 0.003 |
| 2015 | 0.003 | 0.004 | 0.003 | 0.005 | 0.002 | 0.003 |
| 2016 | 0.003 | 0.004 | 0.003 | 0.005 | 0.002 | 0.003 |
| 2017 | 0.002 | 0.004 | 0.003 | 0.005 | 0.002 | 0.003 |
| 2018 | 0.003 | 0.004 | 0.003 | 0.005 | 0.002 | 0.003 |

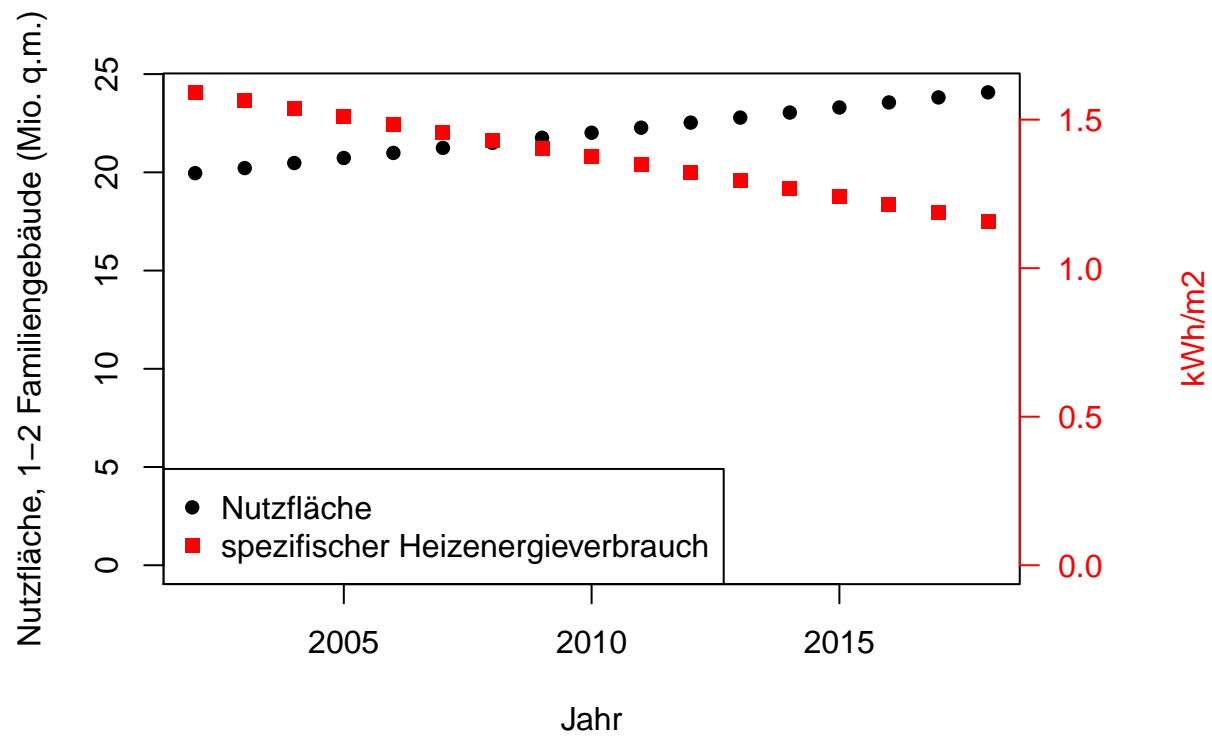
5.3. Stadtbezirke, 1-2 Familiengebäude, flächenbezogener Heizenergieverbrauch 2002 - 2018 in kWh/(m²[AN]*a)



| Berlin, 1–2 Familiengebäude, spezifischer Heizenergieverbrauch | |
|---|-------------------|
| Jahr | kWh / q.m. |
| 2002 | 1.57 |
| 2003 | 1.58 |
| 2004 | 1.52 |
| 2005 | 1.51 |
| 2006 | 1.5 |
| 2007 | 1.44 |
| 2008 | 1.43 |
| 2009 | 1.42 |
| 2010 | 1.41 |
| 2011 | 1.35 |
| 2012 | 1.33 |
| 2013 | 1.31 |
| 2014 | 1.23 |
| 2015 | 1.2 |
| 2016 | 1.23 |
| 2017 | 1.17 |
| 2018 | 1.17 |

5.4. Stadtbezirke, 1-2 Familiengebäude, flächenbezogener Heizenergieverbrauch und beheizte Wohnfläche 2002 - 2018

Plot of the 1-2 FH area (to be combined with the specific energy consumption into one picture):

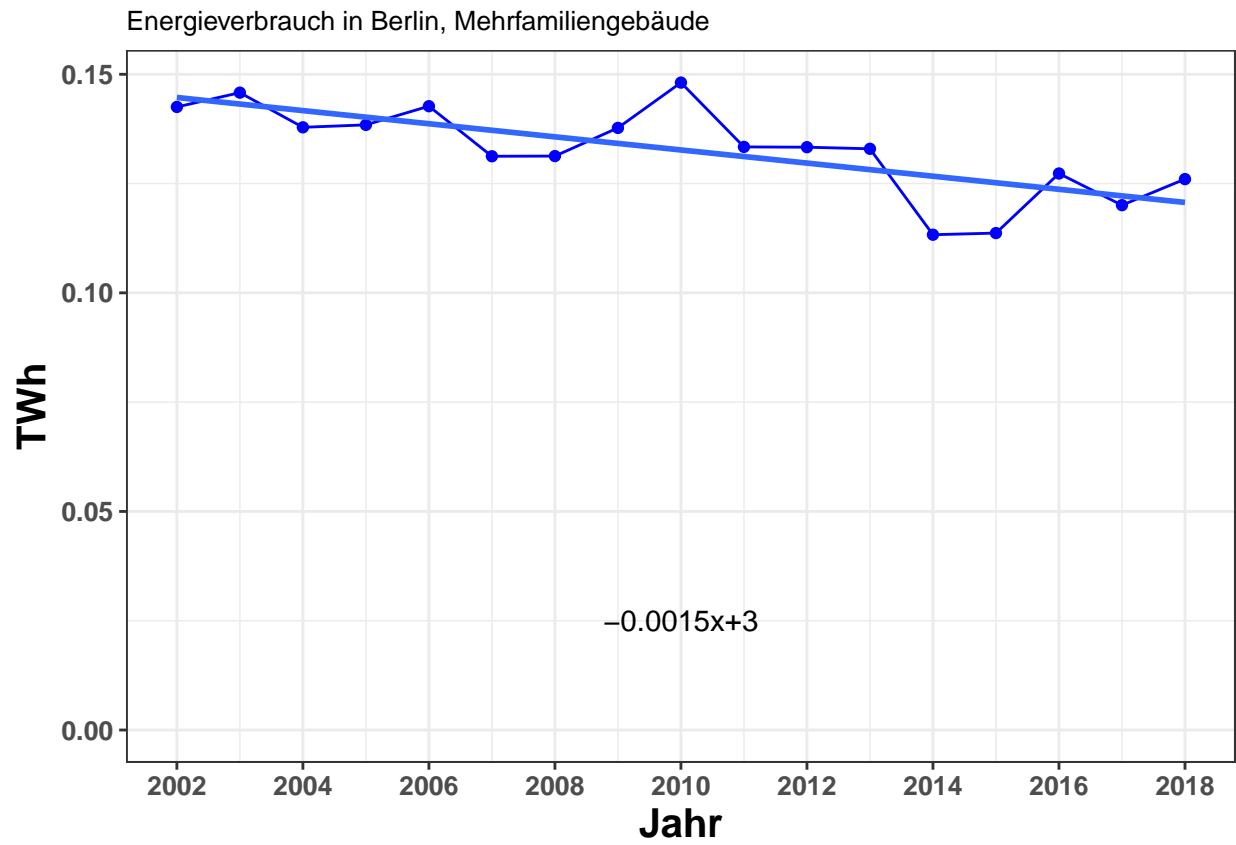


| Berlin, 1–2 Familiengebäude | | |
|-----------------------------|---------------------------|---|
| Jahr | Wohnfläche (Mio. q.m.) | spezifischer Heizenergie- verbrauch (kWh/q.m.) |
| 2002 | 19.96 | 1.57 |
| 2003 | 20.22 | 1.58 |
| 2004 | 20.47 | 1.52 |
| 2005 | 20.73 | 1.51 |
| 2006 | 20.99 | 1.5 |
| 2007 | 21.24 | 1.44 |
| 2008 | 21.5 | 1.43 |
| 2009 | 21.76 | 1.42 |
| 2010 | 22.04 | 1.41 |
| 2011 | 22.24 | 1.35 |
| 2012 | 22.52 | 1.33 |
| 2013 | 22.78 | 1.31 |
| 2014 | 23.05 | 1.23 |
| 2015 | 23.31 | 1.2 |
| 2016 | 23.58 | 1.23 |
| 2017 | 23.79 | 1.17 |
| 2018 | 24.07 | 1.17 |

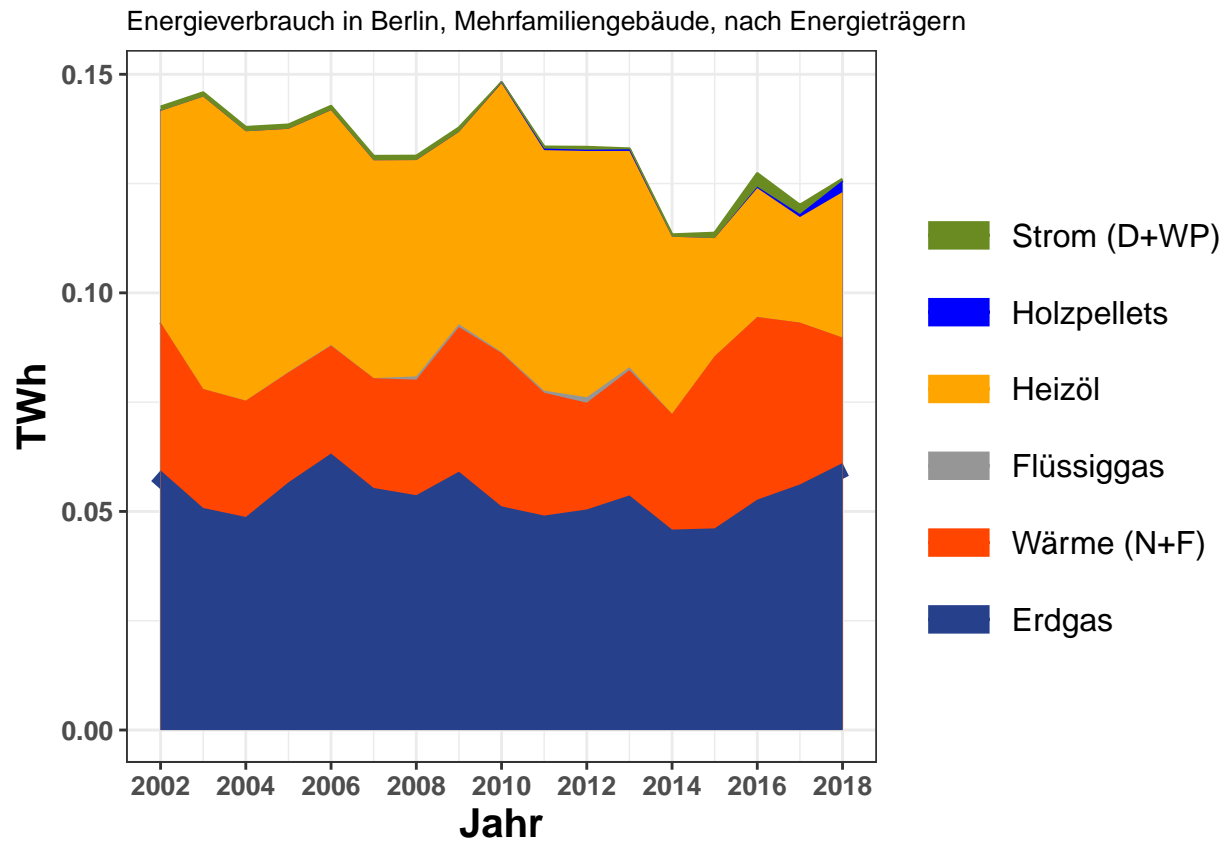
6. Heizenergieverbrauch nach Stadtbezirken 2002 - 2018, Mehrfamiliengebäude

6.1. Stadtbezirke, Mehrfamiliengebäude, Heizenergieverbrauch 2002 - 2018 summiert

- Total energy split by ET:



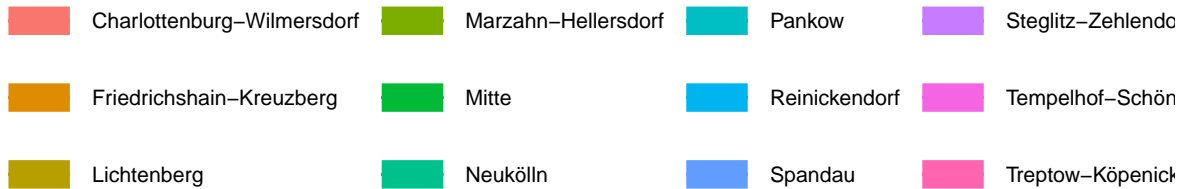
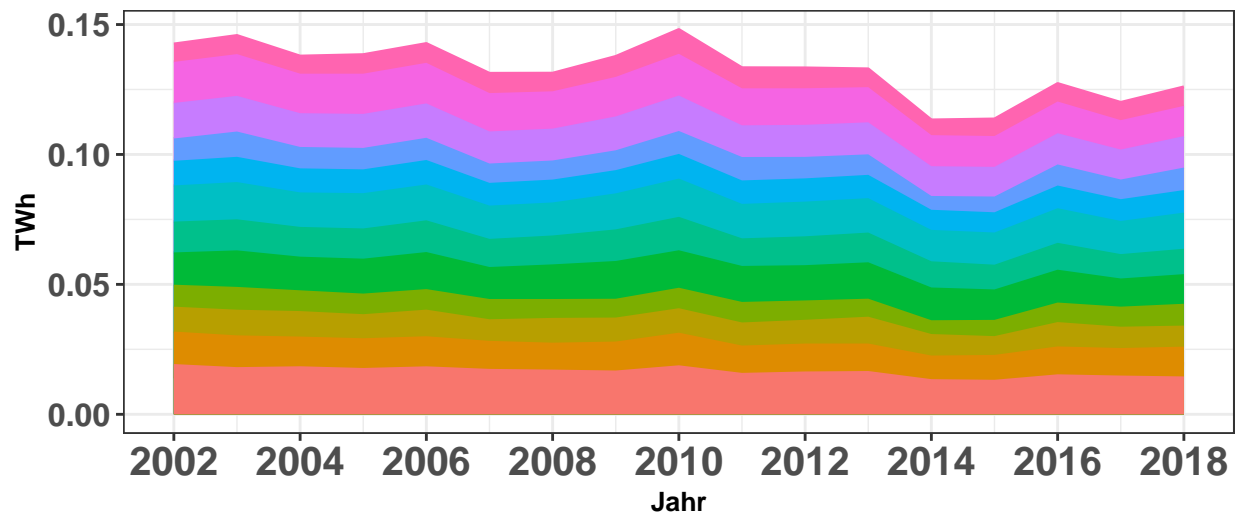
| Berlin, Mehrfamiliengebäude, Heizenergieverbrauch | |
|--|------------|
| Jahr | TWh |
| 2002 | 0.14253 |
| 2003 | 0.1458 |
| 2004 | 0.13787 |
| 2005 | 0.13843 |
| 2006 | 0.1427 |
| 2007 | 0.13124 |
| 2008 | 0.13129 |
| 2009 | 0.13773 |
| 2010 | 0.1481 |
| 2011 | 0.13338 |
| 2012 | 0.13332 |
| 2013 | 0.13295 |
| 2014 | 0.1133 |
| 2015 | 0.11367 |
| 2016 | 0.1273 |
| 2017 | 0.12006 |
| 2018 | 0.12602 |



| Berlin, Mehrfamiliengebäude, Heizenergieverbrauch nach Energieträgern (TWh) | | | | | | | |
|---|--------|-------|------------|--------|-------------|-------|--------|
| Jahr | Erdgas | Wärme | Flüssiggas | Heizöl | Holzpellets | Strom | Gesamt |
| 2002 | 0.059 | 0.034 | 0 | 0.048 | 0 | 0.001 | 0.143 |
| 2003 | 0.051 | 0.027 | 0 | 0.067 | 0 | 0.001 | 0.146 |
| 2004 | 0.049 | 0.027 | 0 | 0.062 | 0 | 0.001 | 0.138 |
| 2005 | 0.057 | 0.025 | 0 | 0.056 | 0 | 0.001 | 0.138 |
| 2006 | 0.063 | 0.025 | 0 | 0.054 | 0 | 0.001 | 0.143 |
| 2007 | 0.055 | 0.025 | 0 | 0.05 | 0 | 0.001 | 0.131 |
| 2008 | 0.054 | 0.026 | 0.001 | 0.049 | 0 | 0.001 | 0.131 |
| 2009 | 0.059 | 0.033 | 0.001 | 0.044 | 0 | 0.001 | 0.138 |
| 2010 | 0.051 | 0.035 | 0 | 0.061 | 0 | 0 | 0.148 |
| 2011 | 0.049 | 0.028 | 0 | 0.055 | 0 | 0 | 0.133 |
| 2012 | 0.05 | 0.024 | 0.001 | 0.056 | 0 | 0.001 | 0.133 |
| 2013 | 0.054 | 0.029 | 0.001 | 0.049 | 0 | 0 | 0.133 |
| 2014 | 0.046 | 0.026 | 0 | 0.041 | 0 | 0 | 0.113 |
| 2015 | 0.046 | 0.039 | 0 | 0.027 | 0 | 0.001 | 0.114 |
| 2016 | 0.053 | 0.042 | 0 | 0.029 | 0 | 0.003 | 0.127 |
| 2017 | 0.056 | 0.037 | 0 | 0.024 | 0.001 | 0.002 | 0.12 |
| 2018 | 0.061 | 0.029 | 0 | 0.033 | 0.003 | 0 | 0.126 |

- Total energy split by bezirk:

Energieverbrauch in Berlin, Mehrfamiliengebäude, nach Bezirk



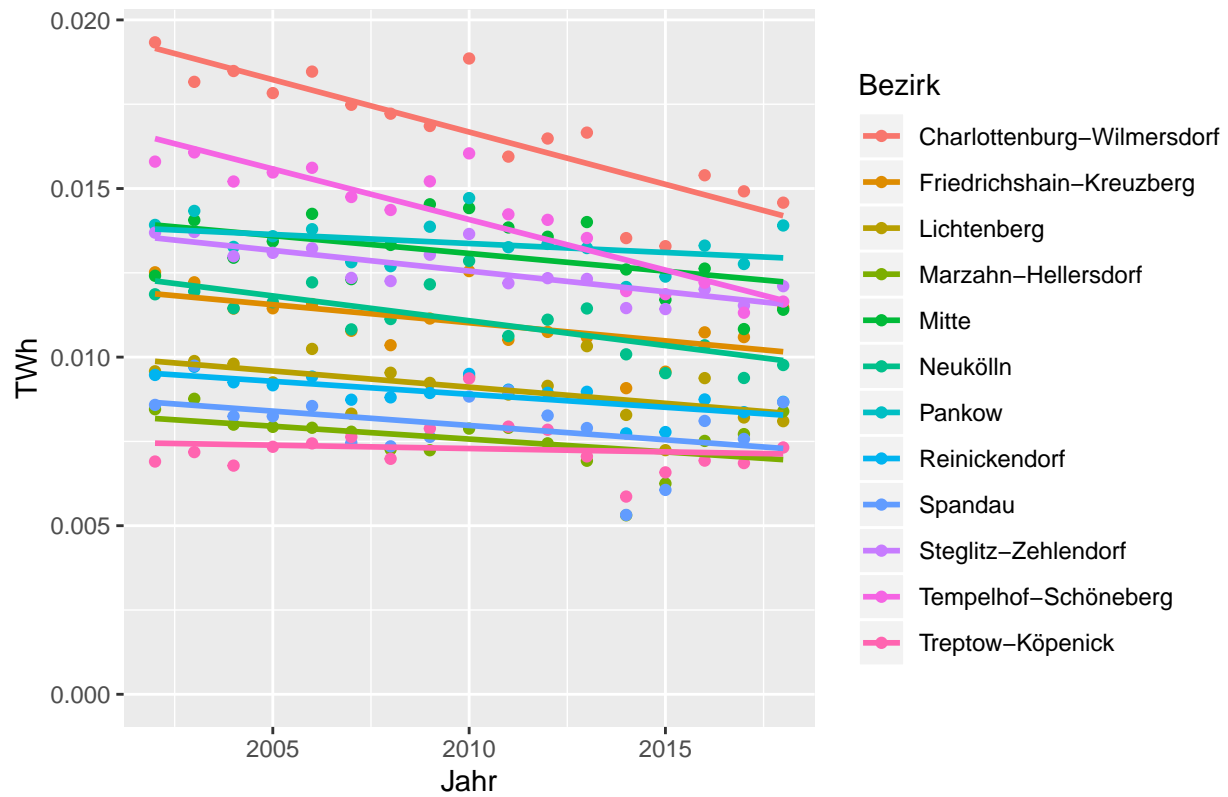
| Berliner, Mehrfamiliengebäude, Heizenergieverbrauch nach Bezirken (TWh) | | | | | | |
|---|---------------------------|--------------------------|-------------|---------------------|-------|----------|
| Jahr | Charlottenburg–Wilmerdorf | Friedrichshain–Kreuzberg | Lichtenberg | Marzahn–Hellersdorf | Mitte | Neukölln |
| 2002 | 0.019 | 0.013 | 0.01 | 0.008 | 0.012 | 0.012 |
| 2003 | 0.018 | 0.012 | 0.01 | 0.009 | 0.014 | 0.012 |
| 2004 | 0.018 | 0.011 | 0.01 | 0.008 | 0.013 | 0.011 |
| 2005 | 0.018 | 0.011 | 0.009 | 0.008 | 0.013 | 0.012 |
| 2006 | 0.018 | 0.012 | 0.01 | 0.008 | 0.014 | 0.012 |
| 2007 | 0.017 | 0.011 | 0.008 | 0.008 | 0.012 | 0.011 |
| 2008 | 0.017 | 0.01 | 0.01 | 0.007 | 0.013 | 0.011 |
| 2009 | 0.017 | 0.011 | 0.009 | 0.007 | 0.015 | 0.012 |
| 2010 | 0.019 | 0.013 | 0.009 | 0.008 | 0.014 | 0.013 |
| 2011 | 0.016 | 0.011 | 0.009 | 0.008 | 0.014 | 0.011 |
| 2012 | 0.016 | 0.011 | 0.009 | 0.007 | 0.014 | 0.011 |
| 2013 | 0.017 | 0.011 | 0.01 | 0.007 | 0.014 | 0.011 |
| 2014 | 0.014 | 0.009 | 0.008 | 0.005 | 0.013 | 0.01 |
| 2015 | 0.013 | 0.01 | 0.007 | 0.006 | 0.012 | 0.01 |
| 2016 | 0.015 | 0.011 | 0.009 | 0.008 | 0.013 | 0.01 |
| 2017 | 0.015 | 0.011 | 0.008 | 0.008 | 0.011 | 0.009 |
| 2018 | 0.015 | 0.011 | 0.008 | 0.008 | 0.011 | 0.01 |

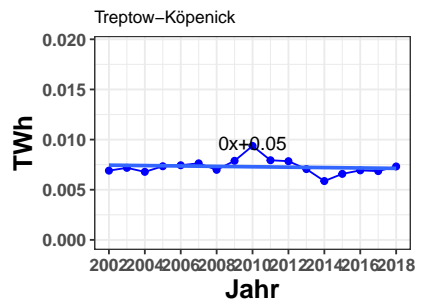
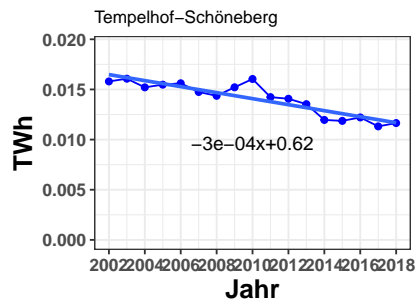
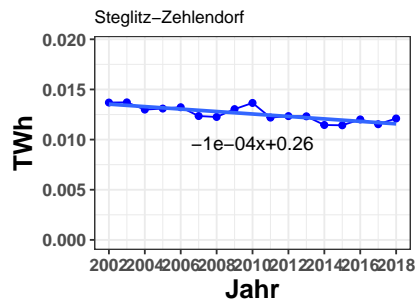
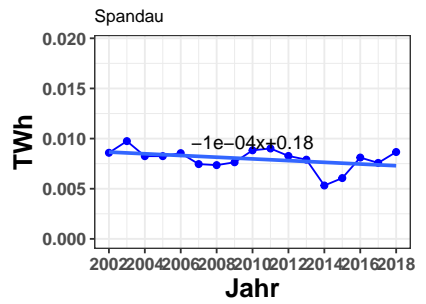
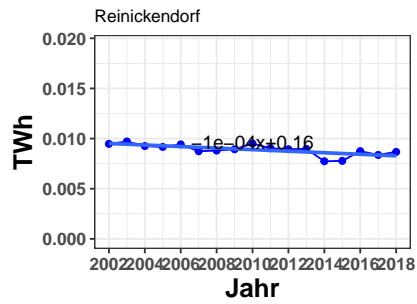
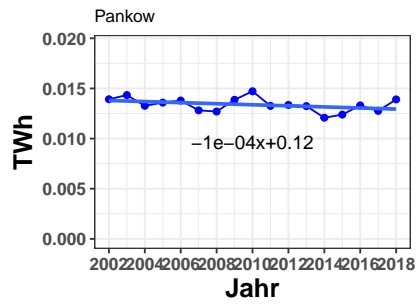
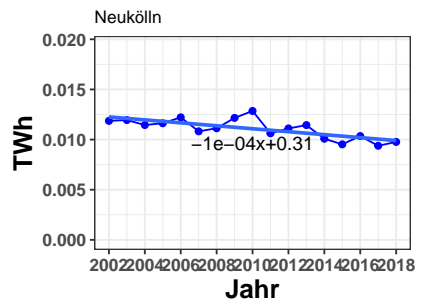
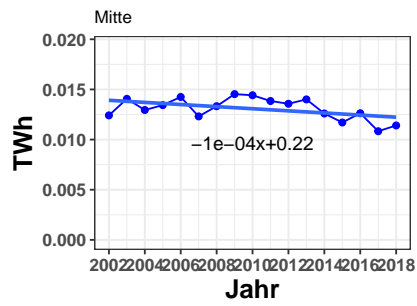
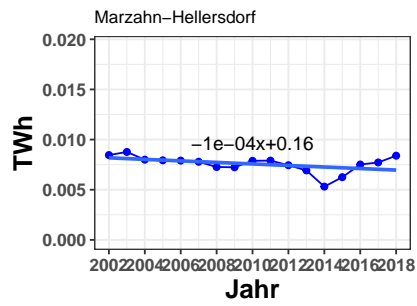
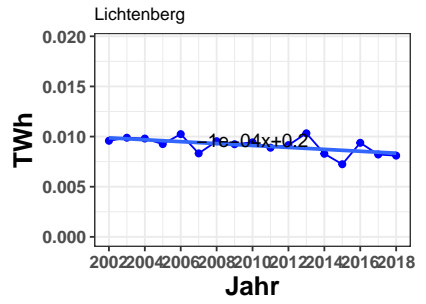
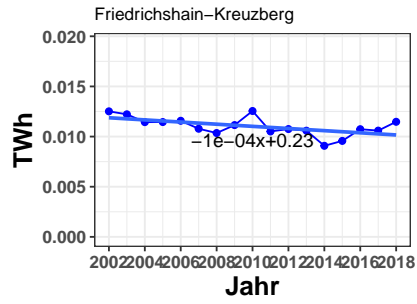
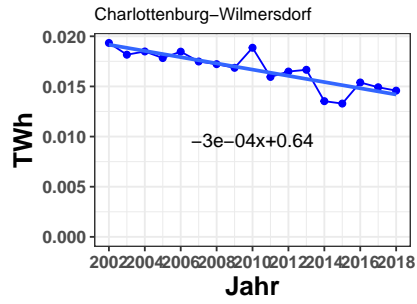
| Berliner, Mehrfamiliengebäude, Heizenergieverbrauch nach Bezirken (TWh) | | | | | | |
|---|--------|---------------|---------|---------------------|----------------------|------------------|
| Jahr | Pankow | Reinickendorf | Spandau | Steglitz–Zehlendorf | Tempelhof–Schöneberg | Treptow–Köpenick |
| 2002 | 0.014 | 0.009 | 0.009 | 0.014 | 0.016 | 0.007 |
| 2003 | 0.014 | 0.01 | 0.01 | 0.014 | 0.016 | 0.007 |
| 2004 | 0.013 | 0.009 | 0.008 | 0.013 | 0.015 | 0.007 |
| 2005 | 0.014 | 0.009 | 0.008 | 0.013 | 0.015 | 0.007 |
| 2006 | 0.014 | 0.009 | 0.009 | 0.013 | 0.016 | 0.007 |
| 2007 | 0.013 | 0.009 | 0.007 | 0.012 | 0.015 | 0.008 |
| 2008 | 0.013 | 0.009 | 0.007 | 0.012 | 0.014 | 0.007 |
| 2009 | 0.014 | 0.009 | 0.008 | 0.013 | 0.015 | 0.008 |
| 2010 | 0.015 | 0.01 | 0.009 | 0.014 | 0.016 | 0.009 |
| 2011 | 0.013 | 0.009 | 0.009 | 0.012 | 0.014 | 0.008 |
| 2012 | 0.013 | 0.009 | 0.008 | 0.012 | 0.014 | 0.008 |
| 2013 | 0.013 | 0.009 | 0.008 | 0.012 | 0.014 | 0.007 |
| 2014 | 0.012 | 0.008 | 0.005 | 0.011 | 0.012 | 0.006 |
| 2015 | 0.012 | 0.008 | 0.006 | 0.011 | 0.012 | 0.007 |
| 2016 | 0.013 | 0.009 | 0.008 | 0.012 | 0.012 | 0.007 |
| 2017 | 0.013 | 0.008 | 0.008 | 0.012 | 0.011 | 0.007 |
| 2018 | 0.014 | 0.009 | 0.009 | 0.012 | 0.012 | 0.007 |

6.2. Stadtbezirke, Mehrfamiliengebäude Wohngebäude, Heizenergieverbrauch 2002 - 2018

(Eine Grafik: Heizenergieverbrauch aller 12 Bezirke in einer Grafik) One Graph: All 12 lines in a single graph.

Energieverbrauch in Stadtbezirken, Mehrfamiliengebäude

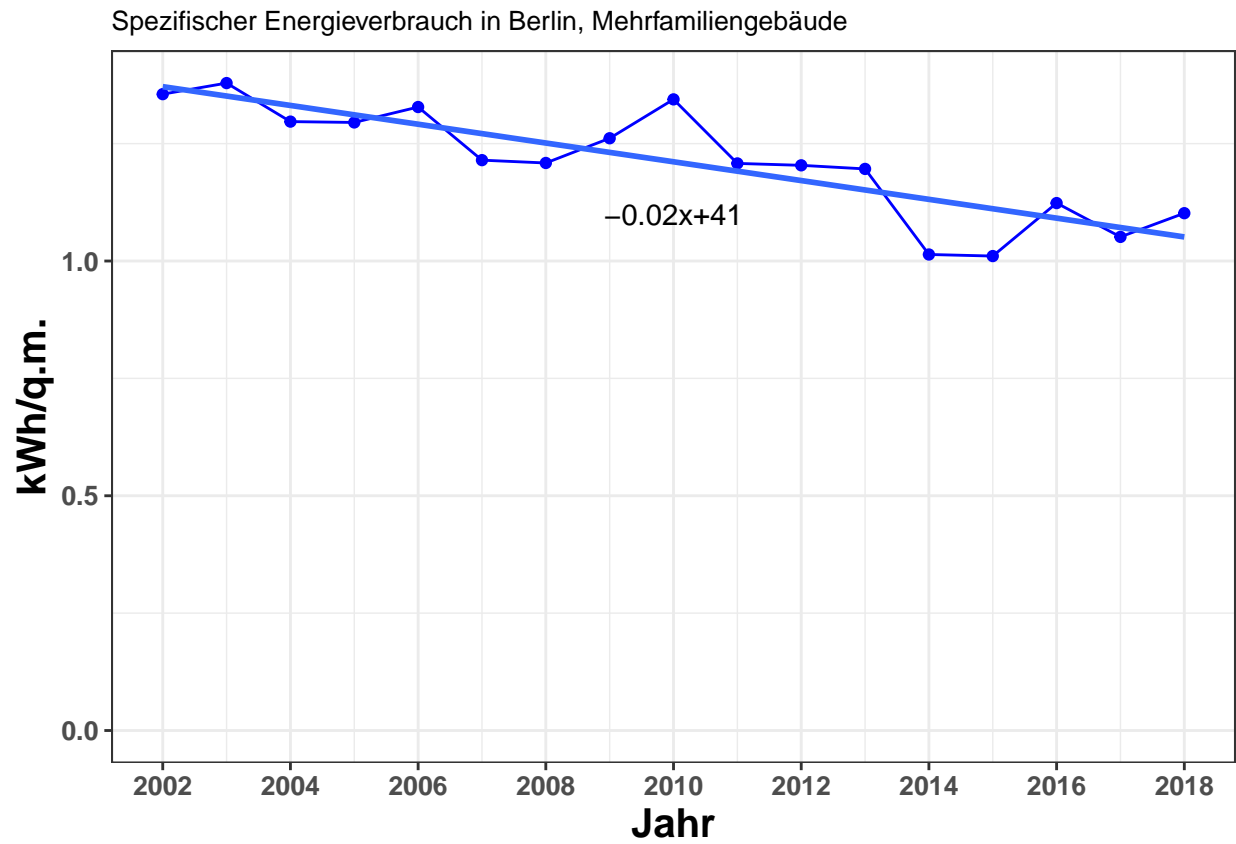




| Berliner, Mehrfamiliengebäude, Heizenergieverbrauch nach Bezirken (TWh) | | | | | | |
|---|-------------------------------|------------------------------|-------------|-------------------------|-------|----------|
| Jahr | Charlottenburg- Wilmerdorf | Friedrichshain- Kreuzberg | Lichtenberg | Marzahn- Hellersdorf | Mitte | Neukölln |
| 2002 | 0.019 | 0.013 | 0.01 | 0.008 | 0.012 | 0.012 |
| 2003 | 0.018 | 0.012 | 0.01 | 0.009 | 0.014 | 0.012 |
| 2004 | 0.018 | 0.011 | 0.01 | 0.008 | 0.013 | 0.011 |
| 2005 | 0.018 | 0.011 | 0.009 | 0.008 | 0.013 | 0.012 |
| 2006 | 0.018 | 0.012 | 0.01 | 0.008 | 0.014 | 0.012 |
| 2007 | 0.017 | 0.011 | 0.008 | 0.008 | 0.012 | 0.011 |
| 2008 | 0.017 | 0.01 | 0.01 | 0.007 | 0.013 | 0.011 |
| 2009 | 0.017 | 0.011 | 0.009 | 0.007 | 0.015 | 0.012 |
| 2010 | 0.019 | 0.013 | 0.009 | 0.008 | 0.014 | 0.013 |
| 2011 | 0.016 | 0.011 | 0.009 | 0.008 | 0.014 | 0.011 |
| 2012 | 0.016 | 0.011 | 0.009 | 0.007 | 0.014 | 0.011 |
| 2013 | 0.017 | 0.011 | 0.01 | 0.007 | 0.014 | 0.011 |
| 2014 | 0.014 | 0.009 | 0.008 | 0.005 | 0.013 | 0.01 |
| 2015 | 0.013 | 0.01 | 0.007 | 0.006 | 0.012 | 0.01 |
| 2016 | 0.015 | 0.011 | 0.009 | 0.008 | 0.013 | 0.01 |
| 2017 | 0.015 | 0.011 | 0.008 | 0.008 | 0.011 | 0.009 |
| 2018 | 0.015 | 0.011 | 0.008 | 0.008 | 0.011 | 0.01 |

| Berliner, Mehrfamiliengebäude, Heizenergieverbrauch nach Bezirken (TWh) | | | | | | |
|---|--------|---------------|---------|-------------------------|--------------------------|----------------------|
| Jahr | Pankow | Reinickendorf | Spandau | Steglitz- Zehlendorf | Tempelhof- Schöneberg | Treptow- Köpenick |
| 2002 | 0.014 | 0.009 | 0.009 | 0.014 | 0.016 | 0.007 |
| 2003 | 0.014 | 0.01 | 0.01 | 0.014 | 0.016 | 0.007 |
| 2004 | 0.013 | 0.009 | 0.008 | 0.013 | 0.015 | 0.007 |
| 2005 | 0.014 | 0.009 | 0.008 | 0.013 | 0.015 | 0.007 |
| 2006 | 0.014 | 0.009 | 0.009 | 0.013 | 0.016 | 0.007 |
| 2007 | 0.013 | 0.009 | 0.007 | 0.012 | 0.015 | 0.008 |
| 2008 | 0.013 | 0.009 | 0.007 | 0.012 | 0.014 | 0.007 |
| 2009 | 0.014 | 0.009 | 0.008 | 0.013 | 0.015 | 0.008 |
| 2010 | 0.015 | 0.01 | 0.009 | 0.014 | 0.016 | 0.009 |
| 2011 | 0.013 | 0.009 | 0.009 | 0.012 | 0.014 | 0.008 |
| 2012 | 0.013 | 0.009 | 0.008 | 0.012 | 0.014 | 0.008 |
| 2013 | 0.013 | 0.009 | 0.008 | 0.012 | 0.014 | 0.007 |
| 2014 | 0.012 | 0.008 | 0.005 | 0.011 | 0.012 | 0.006 |
| 2015 | 0.012 | 0.008 | 0.006 | 0.011 | 0.012 | 0.007 |
| 2016 | 0.013 | 0.009 | 0.008 | 0.012 | 0.012 | 0.007 |
| 2017 | 0.013 | 0.008 | 0.008 | 0.012 | 0.011 | 0.007 |
| 2018 | 0.014 | 0.009 | 0.009 | 0.012 | 0.012 | 0.007 |

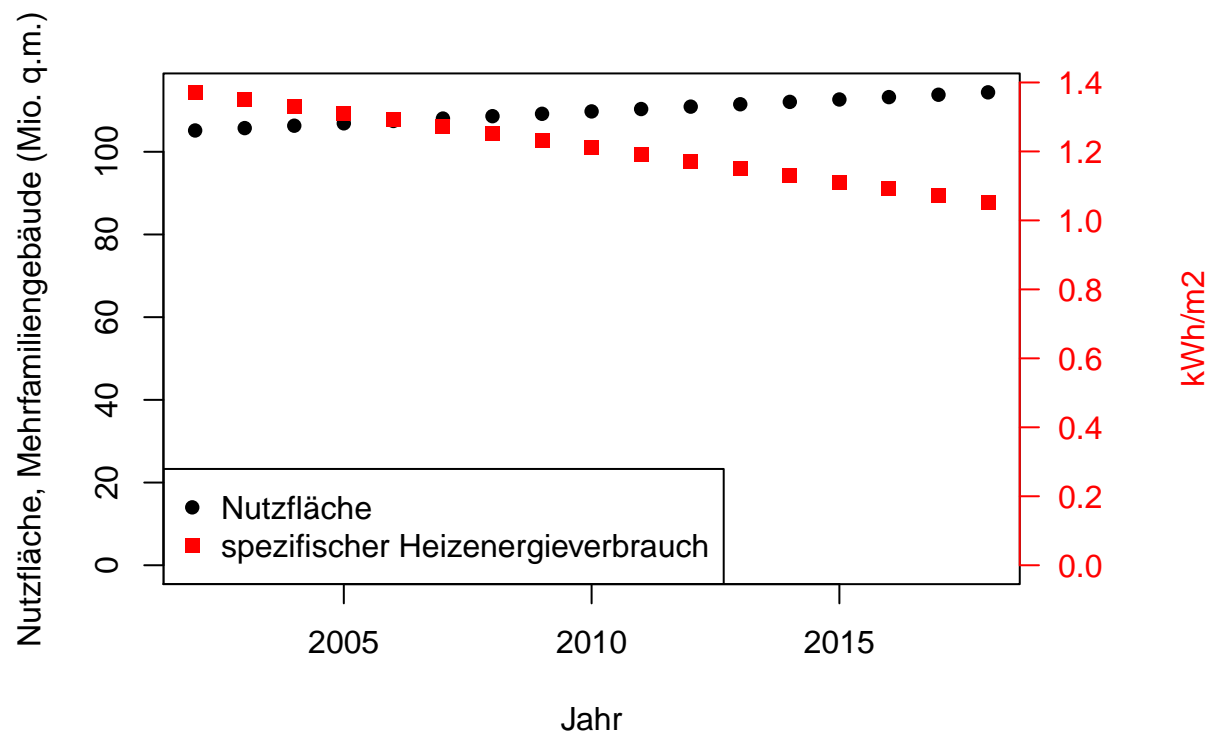
6.3. Stadtbezirke, Mehrfamiliengebäude, flächenbezogener Heizenergieverbrauch 2002 - 2018 in kWh/(m²[AN]*a)



| Berlin, Mehrfamiliengebäude, spezifischer Heizenergieverbrauch | |
|---|-------------------|
| Jahr | kWh / q.m. |
| 2002 | 1.36 |
| 2003 | 1.38 |
| 2004 | 1.3 |
| 2005 | 1.3 |
| 2006 | 1.33 |
| 2007 | 1.21 |
| 2008 | 1.21 |
| 2009 | 1.26 |
| 2010 | 1.34 |
| 2011 | 1.21 |
| 2012 | 1.2 |
| 2013 | 1.2 |
| 2014 | 1.01 |
| 2015 | 1.01 |
| 2016 | 1.12 |
| 2017 | 1.05 |
| 2018 | 1.1 |

6.4. Stadtbezirke, Mehrfamiliengebäude, flächenbezogener Heizenergieverbrauch und beheizte Wohnfläche 2002 - 2018

Plot of the MFH area (to be combined with the specific energy consumption into one picture):



| Berlin, Mehrfamiliengebäude | | |
|-----------------------------|---------------------------|---|
| Jahr | Wohnfläche (Mio. q.m.) | spezifischer Heizenergie- verbrauch (kWh/q.m.) |
| 2002 | 105.15 | 1.36 |
| 2003 | 105.73 | 1.38 |
| 2004 | 106.31 | 1.3 |
| 2005 | 106.88 | 1.3 |
| 2006 | 107.46 | 1.33 |
| 2007 | 108.04 | 1.21 |
| 2008 | 108.61 | 1.21 |
| 2009 | 109.19 | 1.26 |
| 2010 | 110.17 | 1.34 |
| 2011 | 110.43 | 1.21 |
| 2012 | 110.75 | 1.2 |
| 2013 | 111.15 | 1.2 |
| 2014 | 111.75 | 1.01 |
| 2015 | 112.49 | 1.01 |
| 2016 | 113.32 | 1.12 |
| 2017 | 114.19 | 1.05 |
| 2018 | 114.38 | 1.1 |

Diskussion

- Section 5.2, 1-2 FH energy consumption is increasing for Lichtenberg and Marzahn-Hellersdorf.
- Treptow-Kopenick. Energy consumption for MFH is stagnant. Also Marzahn-Hellersdorf (almost stagnant) and Pankow.
- How does the age of the buildings compare with the co2 emission/energy efficiency?