

**Table S1.** Comparison of the average annual outdoor temperature in accordance with [24] with average annual outdoor temperatures for meteorological stations located within the respective climate zones

Climate zone	Location	Design outdoor temperature $\theta_e$ [°C]	Average annual outdoor temperature for the climate zone $\theta_{e(r)}$ [°C]	Average annual outdoor temperature for the meteorological station $\theta_{e(r)}$ [°C]
I	Gdańsk	-16	7.7	8.7
	Hel			8.3
	Kołobrzeg			8.4
	Koszalin			8.0
	Lębork			7.9
	Łeba			7.9
	Resko			8.4
	Szczecin			8.8
	Szczecinek			7.9
	Świnoujście			8.9
	Ustka			7.9
II	Bydgoszcz	-18	7.9	7.9
	Chojnice			7.1
	Elbląg			7.3
	Gorzów Wielkopolski			8.9
	Kalisz			7.9
	Koło			8.6
	Legnica			9.0
	Leszno			7.8
	Piła			8.3
	Poznań			8.2
	Słubice			8.9
	Sulejów			7.8
	Wieluń			8.4
	Wrocław			8.2
	Zielona Góra			8.2
III	Bielsko-Biała	-20	7.6	8.5
	Częstochowa			8.1
	Jelenia Góra			7.5
	Katowice			8.0
	Kielce			7.5
	Kłodzko			7.7
	Kraków			8.2
	Krosno			8.1
	Lublin			7.7
	Łódź			8.2
	Mława			7.4
	Nowy Sącz			8.5
	Opole			8.9
	Ostrołęka			7.7
	Płock			8.3
	Przemyśl			7.6

Climate zone	Location	Design outdoor temperature $\theta_e$ [°C]	Average annual outdoor temperature for the climate zone $\theta_{e(r)}$ [°C]	Average annual outdoor temperature for the meteorological station $\theta_{e(r)}$ [°C]
	Racibórz			8.7
	Rzeszów			7.5
	Sandomierz			8.3
	Tarnów			9.0
	Toruń			8.1
	Warszawa			8.2
	Włodawa			7.6
	Zamość			7.2
IV	Białystok	-22	6.9	6.9
	Kętrzyn			7.1
	Lesko			8.1
	Mikołajki			7.1
	Olsztyn			6.9
	Siedlce			7.6
	Terespol			7.8
V	Suwałki	-24	5.5	6.3
	Zakopane			5.4

**Table S2.** Number of heating days Ld [days/year] for meteorological stations and energy classes of buildings

No.	Location	Number of heating days Ld [days/year]					
		B3	B2	B1	A3	A2	A1
1.	Białystok	208.8	194.9	185.1	190.3	168.3	138.3
2.	Bielsko-Biała	193.9	184.0	170.2	185.6	145.2	120.7
3.	Bydgoszcz	216.4	199.6	190.5	193.8	170.6	145.9
4.	Chojnice	224.8	204.7	193.6	197.7	176.6	152.0
5.	Częstochowa	195.1	183.9	169.6	174.7	146.3	127.7
6.	Elbląg	209.4	194.5	186.6	189.6	170.1	145.1
7.	Gdańsk	205.7	188.3	177.0	182.0	156.2	136.8
8.	Gorzów Wielkopolski	202.7	189.6	177.9	183.8	161.1	138.7
9.	Hel	217.6	195.9	184.6	188.7	160.4	138.6
10.	Jelenia Góra	216.0	205.3	187.4	191.1	179.4	131.3
11.	Kalisz	201.2	188.9	181.3	185.1	159.9	139.3
12.	Katowice	194.4	182.6	168.0	174.3	145.3	129.8
13.	Kętrzyn	198.6	187.7	179.3	184.4	160.1	141.9
14.	Kielce	203.0	189.3	177.8	183.1	157.9	140.2
15.	Kłodzko	201.6	189.3	174.4	180.8	152.6	129.4
16.	Koło	194.6	181.9	169.7	174.1	149.0	130.9
17.	Kołobrzeg	210.9	196.3	188.5	191.4	179.5	137.1
18.	Koszalin	207.6	193.7	186.4	189.1	138.8	139.3
19.	Kraków	188.6	180.9	168.1	173.2	146.6	131.6
20.	Krosno	196.9	177.8	166.1	170.4	154.4	133.6
21.	Legnica	200.1	186.1	171.2	177.6	146.3	127.9
22.	Lesko	201.2	185.3	167.5	176.2	141.5	120.1
23.	Leszno	206.4	192.7	185.7	188.4	171.3	144.8

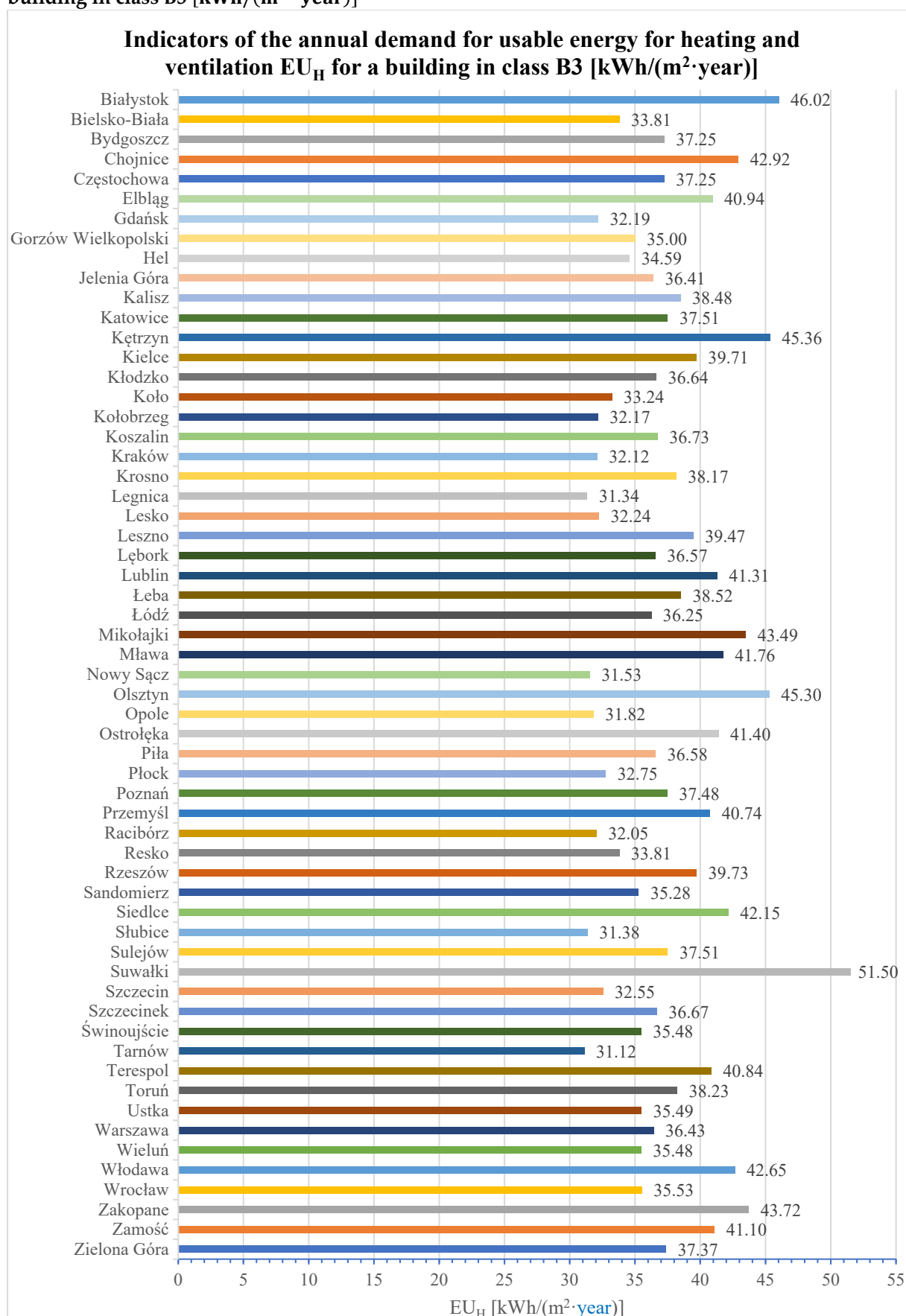
No.	Location	Number of heating days Ld [days/year]					
		B3	B2	B1	A3	A2	A1
24.	Lębork	210.6	193.8	185.0	188.2	164.7	143.1
25.	Lublin	198.3	182.7	170.5	175.0	154.6	138.0
26.	Łeba	212.9	194.4	184.3	188.1	162.8	140.2
27.	Łódź	203.0	191.1	178.0	184.0	161.1	141.1
28.	Mikołajki	220.5	203.0	190.3	195.1	173.2	142.9
29.	Mława	210.2	195.7	183.8	189.8	166.3	149.0
30.	Nowy Sącz	196.2	181.9	169.8	174.2	161.4	134.9
31.	Olsztyn	217.8	201.0	191.9	195.3	179.6	159.9
32.	Opole	192.7	176.8	165.1	169.3	143.0	121.6
33.	Ostrołęka	212.3	198.7	187.8	193.8	169.9	157.6
34.	Piła	230.3	185.9	170.8	177.3	149.1	133.8
35.	Płock	194.1	186.4	173.1	178.1	151.5	133.7
36.	Poznań	198.8	184.8	172.7	177.1	160.1	144.5
37.	Przemyśl	191.5	177.4	167.0	170.7	151.5	134.4
38.	Racibórz	190.9	176.3	164.1	168.5	141.6	119.7
39.	Resko	206.5	188.5	177.3	182.3	145.0	122.1
40.	Rzeszów	196.0	183.9	172.8	176.9	161.3	141.9
41.	Sandomierz	195.1	182.1	169.7	174.2	152.2	133.8
42.	Siedlce	205.5	192.6	182.6	188.3	166.1	144.4
43.	Słubice	194.0	180.2	161.3	168.4	139.8	123.0
44.	Sulejów	207.0	192.1	180.2	186.0	161.3	140.2
45.	Suwałki	209.5	196.3	189.3	191.8	172.8	128.8
46.	Szczecin	202.3	189.6	179.4	185.2	163.1	138.1
47.	Szczecinek	221.8	200.2	188.6	193.0	168.5	142.1
48.	Świnoujście	198.5	183.9	171.4	176.0	144.0	122.6
49.	Tarnów	187.3	170.9	148.8	156.9	125.5	109.4
50.	Terespol	201.7	180.3	167.7	172.2	152.5	136.3
51.	Toruń	201.6	190.8	185.5	187.4	167.9	145.5
52.	Ustka	224.3	202.2	190.3	194.6	171.0	141.3
53.	Warszawa	206.4	192.3	185.2	187.9	160.7	133.1
54.	Wieluń	200.3	186.6	172.9	180.3	143.0	120.9
55.	Włodawa	200.2	186.2	172.8	177.7	154.3	138.0
56.	Wrocław	199.3	187.3	176.1	181.7	152.8	133.2
57.	Zakopane	229.8	207.6	195.2	199.7	178.2	159.8
58.	Zamość	209.4	194.1	186.1	189.0	166.0	145.7
59.	Zielona Góra	200.9	187.2	174.9	179.4	162.0	150.6

**Table S3. Number of heating degree days HDD [K·day] for meteorological stations and energy classes of buildings**

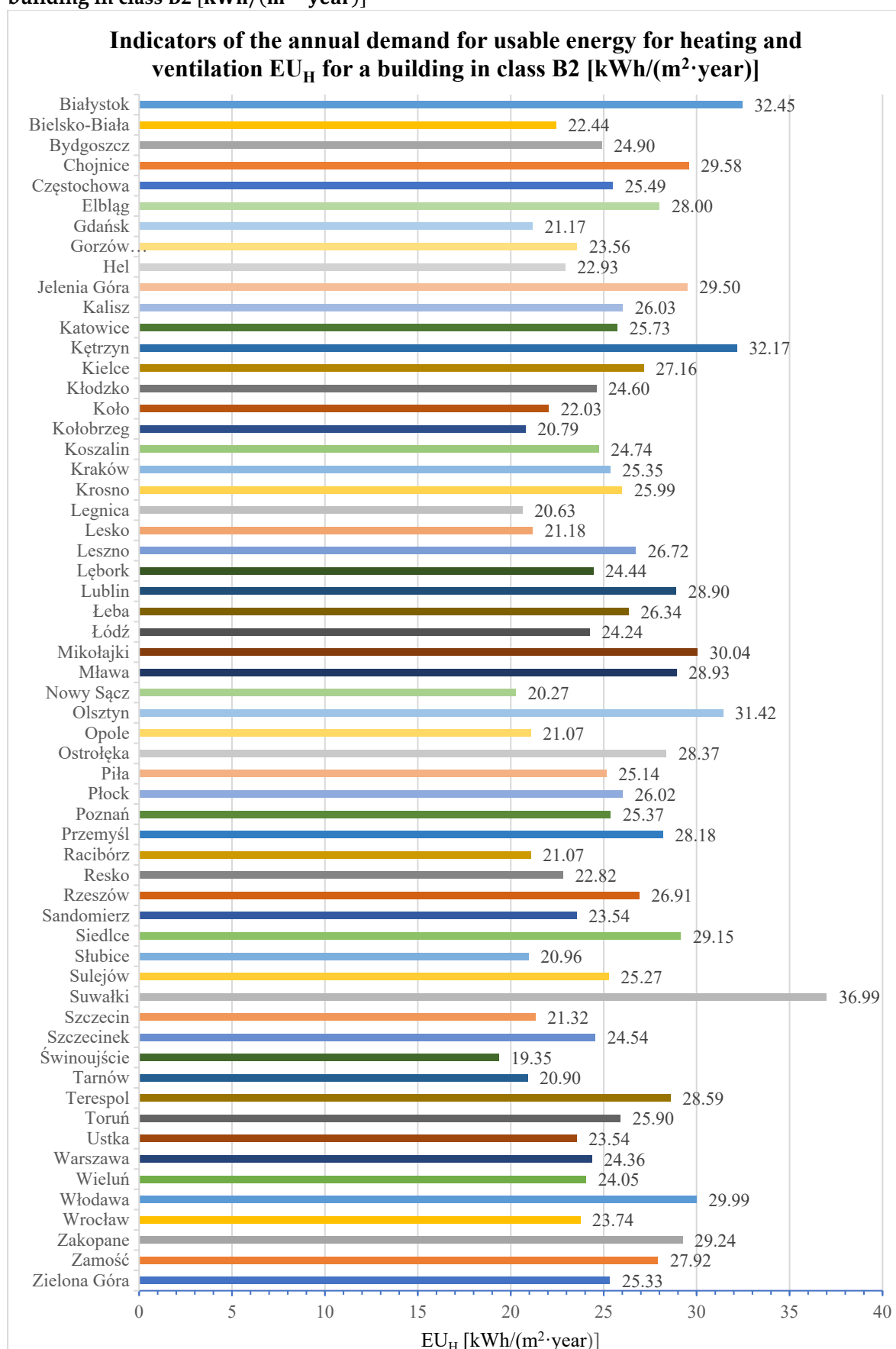
No.	Location	Number of heating degree days HDD [K·day]					
		B3	B2	B1	A3	A2	A1
1.	Białystok	3 885.20	3 730.45	3 605.0	3 671.43	3 389.05	2 933.85
2.	Bielsko-Biała	3 345.82	3 230.26	3 066.1	3 241.36	2 740.52	2 389.42
3.	Bydgoszcz	3 593.30	3 426.70	3 319.5	3 359.52	3 064.54	2 713.46
4.	Chojnice	3 920.10	3 709.61	3 563.5	3 618.21	3 332.66	2 980.52
5.	Częstochowa	3 469.62	3 341.06	3 172.4	3 232.58	2 870.74	2 593.22
6.	Elbląg	3 731.68	3 544.62	3 443.3	3 481.76	3 225.94	2 868.96
7.	Gdańsk	3 284.31	3 076.69	2 940.2	3 000.70	2 681.20	2 404.10
8.	Gorzów Wielkopolski	3 334.69	3 180.06	3 042.5	3 111.78	2 827.99	2 533.23
9.	Hel	3 526.98	3 276.07	3 131.7	3 184.05	2 827.57	2 510.74
10.	Jelenia Góra	3 650.65	3 539.40	3 310.6	3 358.05	3 204.62	2 536.94
11.	Kalisz	3 596.30	3 445.25	3 350.7	3 398.51	3 078.47	2 769.63
12.	Katowice	3 473.28	3 341.85	3 175.2	3 246.33	2 887.16	2 637.94
13.	Kętrzyn	3 750.28	3 621.85	3 522.6	3 582.98	3 291.77	3 023.58
14.	Kielce	3 650.60	3 487.95	3 348.7	3 413.25	3 094.85	2 822.70
15.	Kłodzko	3 553.04	3 404.39	3 218.8	3 298.68	2 922.58	2 600.38
16.	Koło	3 311.80	3 164.36	3 020.4	3 072.28	2 739.42	2 469.65
17.	Kołobrzeg	3 339.88	3 146.40	3 042.0	3 080.70	2 919.30	2 323.31
18.	Koszalin	3 469.59	3 296.83	3 204.4	3 238.59	2 525.80	2 579.09
19.	Kraków	3 420.62	3 333.63	3 187.4	3 245.24	2 910.09	2 668.89
20.	Krosno	3 577.11	3 362.18	3 212.6	3 274.22	3 043.40	2 754.40
21.	Legnica	3 227.83	3 071.67	2 900.1	2 973.88	2 590.46	2 314.82
22.	Lesko	3 371.37	3 194.58	2 989.0	3 089.09	2 663.01	2 325.30
23.	Leszno	3 655.03	3 484.99	3 398.3	3 431.68	3 213.76	2 851.01
24.	Lębork	3 554.34	3 349.36	3 241.3	3 280.64	2 990.94	2 675.65
25.	Lublin	3 612.82	3 438.81	3 304.1	3 353.83	3 082.35	2 860.71
26.	Łeba	3 596.92	3 387.75	3 265.4	3 311.22	3 008.61	2 673.96
27.	Łódź	3 510.97	3 362.74	3 196.2	3 272.20	2 955.22	2 657.52
28.	Mikołajki	3 912.41	3 724.46	3 574.9	3 633.95	3 359.16	2 924.54
29.	Mława	3 717.54	3 567.95	3 417.0	3 492.80	3 184.82	2 923.40
30.	Nowy Sącz	3 330.22	3 158.27	3 014.3	3 066.74	2 910.50	2 505.33
31.	Olsztyn	3 999.82	3 797.60	3 669.1	3 717.11	3 494.26	3 195.21
32.	Opole	3 211.62	3 037.73	2 900.4	2 955.28	2 616.13	2 301.74
33.	Ostrołęka	3 741.16	3 616.14	3 474.0	3 553.46	3 234.36	3 032.82
34.	Piła	3 598.96	3 232.77	3 063.3	3 135.67	2 804.38	2 563.89
35.	Płock	3 387.42	3 303.08	3 155.8	3 211.17	2 886.55	2 629.85
36.	Poznań	3 514.17	3 342.44	3 196.6	3 249.75	3 004.94	2 774.62
37.	Przemysł	3 627.09	3 459.88	3 333.9	3 381.40	3 096.78	2 847.54
38.	Racibórz	3 262.52	3 100.84	2 956.2	3 014.00	2 672.16	2 351.19
39.	Resko	3 331.15	3 134.25	3 014.6	3 066.95	2 625.30	2 293.51
40.	Rzeszów	3 670.28	3 519.20	3 383.1	3 433.52	3 205.62	2 911.84
41.	Sandomierz	3 429.71	3 276.93	3 132.1	3 184.66	2 885.08	2 624.78
42.	Siedlce	3 734.40	3 591.33	3 466.8	3 538.46	3 254.02	2 926.77
43.	Słubice	3 144.07	3 003.25	2 806.7	2 879.99	2 536.25	2 274.05
44.	Sulejów	3 579.98	3 415.15	3 271.8	3 342.04	3 031.67	2 735.60
45.	Suwałki	4 090.34	3 947.46	3 855.1	3 888.06	3 637.26	2 914.80

No.	Location	Number of heating degree days HDD [K·day]					
		B3	B2	B1	A3	A2	A1
46.	Szczecin	3 278.76	3 125.08	3 001.3	3 071.80	2 790.10	2 452.28
47.	Szczecinek	3 626.43	3 389.10	3 240.6	3 296.85	2 984.11	2 623.19
48.	Świnoujście	3 152.98	2 989.66	2 861.2	2 908.48	2 507.34	2 181.56
49.	Tarnów	3 128.96	2 963.29	2 716.9	2 812.77	2 402.19	2 167.28
50.	Terespol	3 628.98	3 409.92	3 252.0	3 317.75	3 034.35	2 817.39
51.	Toruń	3 496.95	3 360.24	3 293.4	3 317.34	3 063.99	2 741.55
52.	Ustka	3 605.05	3 369.52	3 212.0	3 268.88	2 971.42	2 548.19
53.	Warszawa	3 535.04	3 356.69	3 267.2	3 301.16	2 936.88	2 551.54
54.	Wieluń	3 433.76	3 276.26	3 112.3	3 201.92	2 740.48	2 411.08
55.	Włodawa	3 705.42	3 537.60	3 376.3	3 435.27	3 125.59	2 891.20
56.	Wrocław	3 456.15	3 314.15	3 177.4	3 246.39	2 877.22	2 583.34
57.	Zakopane	4 280.62	4 046.38	3 858.1	3 926.40	3 600.70	3 299.27
58.	Zamość	3 849.32	3 643.70	3 536.2	3 575.15	3 261.45	2 940.13
59.	Zielona Góra	3 486.04	3 311.57	3 159.7	3 215.54	2 969.92	2 789.70

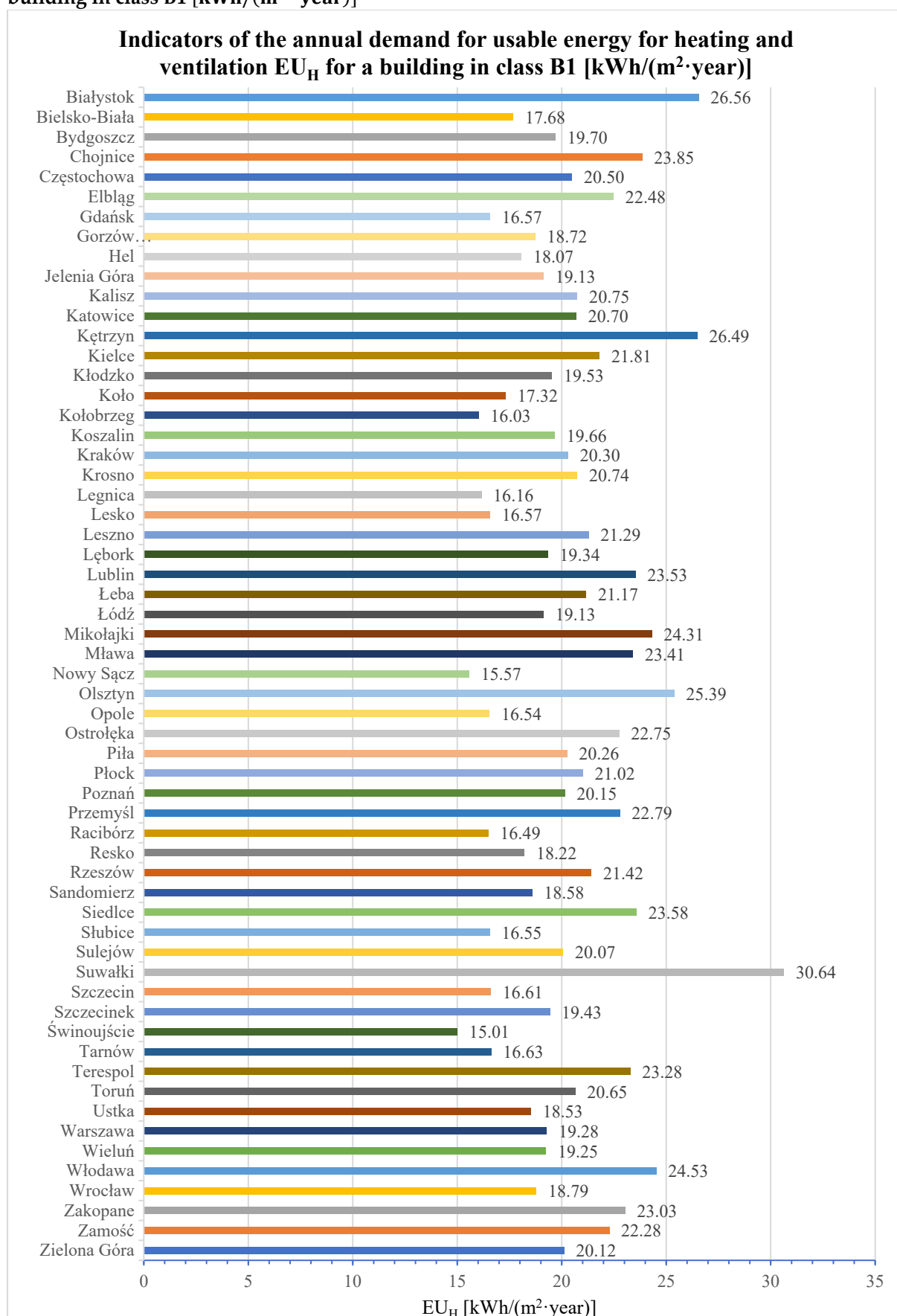
**Table S4. Indicators of the annual demand for usable energy for heating and ventilation  $EU_H$  for a building in class B3 [ $\text{kWh}/(\text{m}^2 \cdot \text{year})$ ]**



**Table S5. Indicators of the annual demand for usable energy for heating and ventilation  $EU_H$  for a building in class B2 [ $\text{kWh}/(\text{m}^2 \cdot \text{year})$ ]**

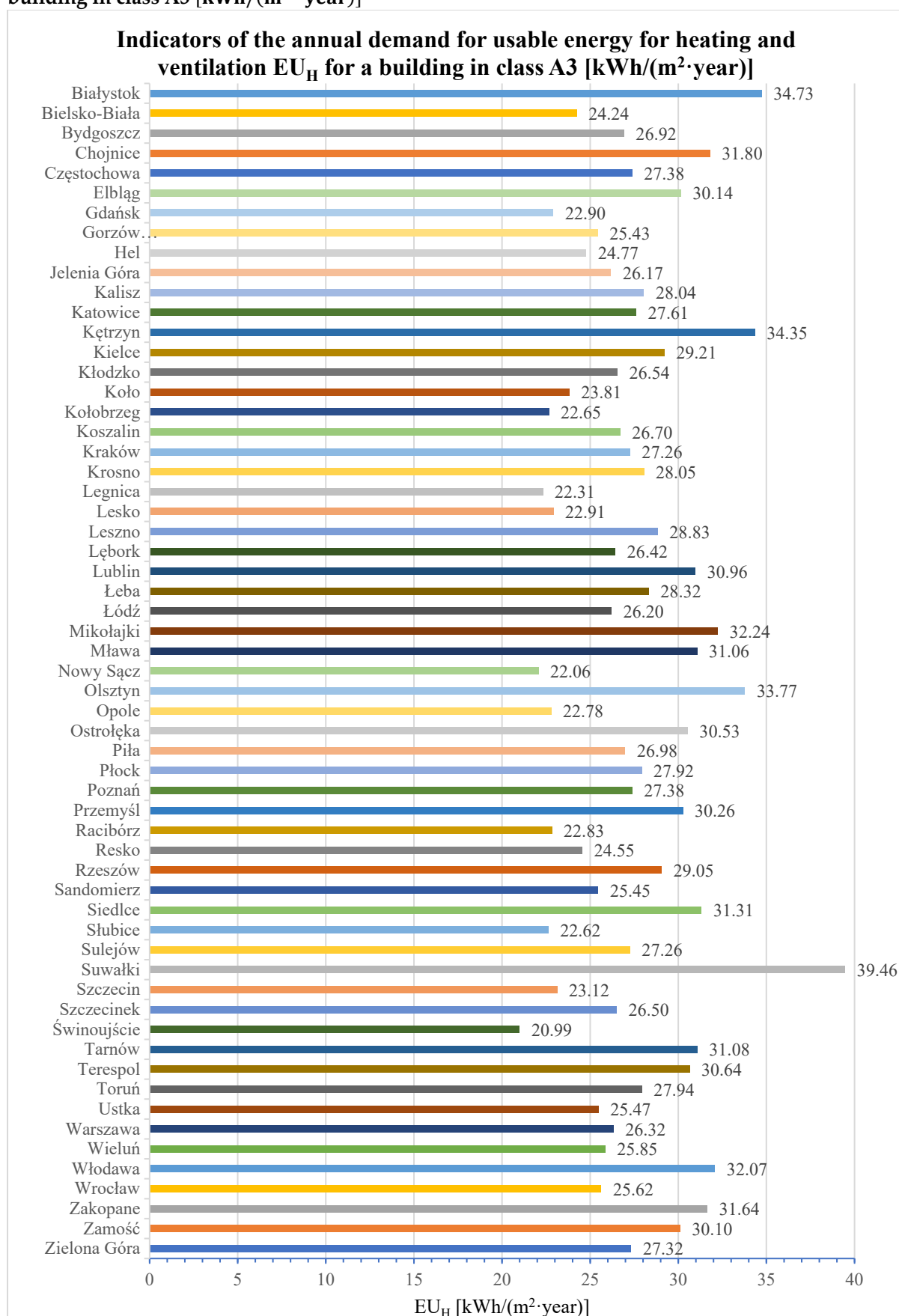


**Table S6. Indicators of the annual demand for usable energy for heating and ventilation  $EU_H$  for a building in class B1 [ $\text{kWh}/(\text{m}^2 \cdot \text{year})$ ]**

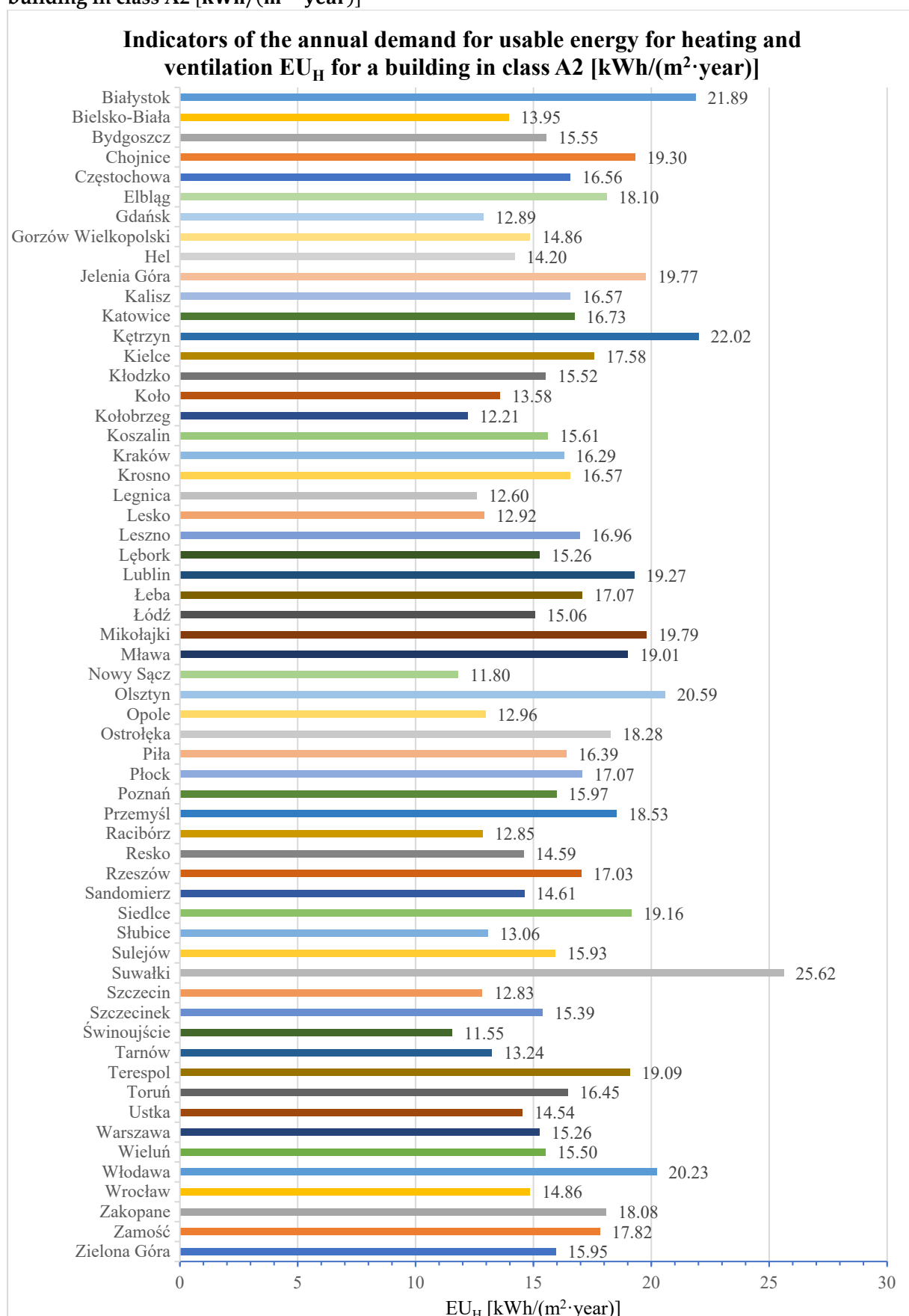




**Table S7. Indicators of the annual demand for usable energy for heating and ventilation  $EU_H$  for a building in class A3 [ $\text{kWh}/(\text{m}^2 \cdot \text{year})$ ]**



**Table S8. Indicators of the annual demand for usable energy for heating and ventilation  $EU_H$  for a building in class A2 [ $\text{kWh}/(\text{m}^2 \cdot \text{year})$ ]**



**Table S9. Indicators of the annual demand for usable energy for heating and ventilation  $EU_H$  for a building in class A1 [ $\text{kWh}/(\text{m}^2 \cdot \text{year})$ ]**

