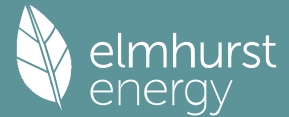


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Primary loss	23.2624	21.0112	23.2624	22.5120	23.2624	22.5120	23.2624	23.2624	22.5120	23.2624	22.5120	23.2624 (59)
Combi loss	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000 (61)
Total heat required for water heating calculated for each month												
WWHRS	292.7087	258.8398	274.7533	240.8218	232.9821	209.4165	206.2110	214.6274	217.2532	242.8978	259.0935	289.3967 (62)
PV diverter	-33.6437	-29.7548	-31.1575	-25.7996	-24.0443	-20.5749	-19.2857	-20.5084	-21.2876	-25.0957	-28.4304	-33.0207 (63a)
Solar input	-0.0000	-0.0000	-0.0000	-0.0000	-0.0000	-0.0000	-0.0000	-0.0000	-0.0000	-0.0000	-0.0000	-0.0000 (63b)
FGHRS	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000 (63c)
Output from w/h	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000 (63d)
	259.0650	229.0851	243.5958	215.0222	208.9378	188.8417	186.9253	194.1190	195.9656	217.8021	230.6631	256.3761 (64)
12Total per year (kWh/year)												2626.3987 (64)
Electric shower(s)	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000 (64a)
												0.0000 (64a)
Total Energy used by instantaneous electric shower (s) (kWh/year) = Sum(64a)m =												
Heat gains from water heating, kWh/month	122.9946	109.2491	117.0244	104.9141	103.1355	94.4719	94.2341	97.0325	97.0776	106.4325	110.9895	121.8933 (65)

5. Internal gains (see Table 5 and 5a)

Metabolic gains (Table 5), Watts	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
(66)m	147.2359	147.2359	147.2359	147.2359	147.2359	147.2359	147.2359	147.2359	147.2359	147.2359	147.2359	147.2359 (66)
Lighting gains (calculated in Appendix L, equation L9 or L9a), also see Table 5	165.4855	183.2161	165.4855	171.0017	165.4855	171.0017	165.4855	165.4855	171.0017	165.4855	171.0017	165.4855 (67)
Appliances gains (calculated in Appendix L, equation L13 or L13a), also see Table 5	328.0935	331.4981	322.9186	304.6540	281.5982	259.9290	245.4527	242.0481	250.6275	268.8921	291.9479	313.6171 (68)
Cooking gains (calculated in Appendix L, equation L15 or L15a), also see Table 5	37.7236	37.7236	37.7236	37.7236	37.7236	37.7236	37.7236	37.7236	37.7236	37.7236	37.7236	37.7236 (69)
Pumps, fans	3.0000	3.0000	3.0000	3.0000	3.0000	0.0000	0.0000	0.0000	0.0000	3.0000	3.0000	3.0000 (70)
Losses e.g. evaporation (negative values) (Table 5)	-117.7888	-117.7888	-117.7888	-117.7888	-117.7888	-117.7888	-117.7888	-117.7888	-117.7888	-117.7888	-117.7888	-117.7888 (71)
Water heating gains (Table 5)	165.3153	162.5730	157.2908	145.7141	138.6230	131.2110	126.6587	130.4201	134.8300	143.0544	154.1520	163.8351 (72)
Total internal gains	729.0650	747.4580	715.8657	691.5406	655.8775	629.3125	604.7676	605.1244	623.6300	647.6028	687.2725	713.1085 (73)

6. Solar gains

[Jan]												
					Area m2	Solar flux Table 6a W/m2		g Specific data or Table 6b	FF Specific data or Table 6c	Access factor Table 6d		Gains W
South					26.2360	46.7521		0.6300	0.7000	0.7700		374.8610 (78)
West					3.4870	19.6403		0.6300	0.7000	0.7700		20.9301 (80)
Northwest					7.2490	11.2829		0.6300	0.7000	0.7700		24.9961 (81)
Solar gains	420.7872	705.7497	941.1310	1132.7554	1243.9302	1225.4970	1185.3274	1102.8412	1007.0487	772.9394	501.8870	361.5394 (83)
Total gains	1149.8522	1453.2077	1636.9967	1824.2960	1899.8076	1854.8095	1790.0951	1707.9657	1630.6787	1420.5421	1189.1595	1074.6479 (84)

7. Mean internal temperature (heating season)

Temperature during heating periods in the living area from Table 9, Th1 (C)												21.0000 (85)
Utilisation factor for gains for living area, nll,m (see Table 9a)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
tau	42.8835	42.9829	43.0808	43.5467	43.6349	44.0507	44.0507	44.1285	43.8896	43.6349	43.4567	43.2720
alpha	3.8589	3.8655	3.8721	3.9031	3.9090	3.9367	3.9367	3.9419	3.9260	3.9090	3.8971	3.8848
util living area	0.9896	0.9747	0.9482	0.8895	0.7846	0.6228	0.4685	0.5074	0.7196	0.9139	0.9785	0.9919 (86)
MIT	19.2305	19.5521	19.9348	20.3769	20.7175	20.9179	20.9791	20.9713	20.8502	20.3907	19.7234	19.1772 (87)
Th 2	19.8520	19.8543	19.8566	19.8674	19.8694	19.8789	19.8789	19.8806	19.8752	19.8694	19.8653	19.8611 (88)
util rest of house	0.9868	0.9682	0.9347	0.8604	0.7289	0.5329	0.3559	0.3934	0.6366	0.8846	0.9718	0.9897 (89)
MIT 2	17.8137	18.2214	18.7008	19.2435	19.6280	19.8284	19.8712	19.8692	19.7716	19.2743	18.4497	17.7518 (90)
Living area fraction	17.9733	18.3714	18.8399	19.3713	19.7508	19.9512	19.9961	19.9934	19.8931	19.4001	18.5932	0.1127 (91)
MIT	17.9733	18.3714	18.8399	19.3713	19.7508	19.9512	19.9961	19.9934	19.8931	19.4001	18.5932	17.9125 (92)
Temperature adjustment												0.0000
adjusted MIT	17.9733	18.3714	18.8399	19.3713	19.7508	19.9512	19.9961	19.9934	19.8931	19.4001	18.5932	17.9125 (93)

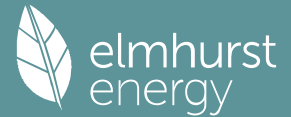
8. Space heating requirement

Utilisation	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
	0.9799	0.9564	0.9190	0.8451	0.7223	0.5391	0.3681	0.4054	0.6381	0.8694	0.9610	0.9839 (94)
Useful gains	1126.6867	1389.8205	1522.8527	1541.6496	1372.2678	999.9611	658.9283	692.3252	1040.4855	1234.9871	1142.8370	1057.3391 (95)
Ext temp.	4.3000	4.9000	6.5000	8.9000	11.7000	14.6000	16.6000	16.4000	14.1000	10.6000	7.1000	4.2000 (96)
Heat loss rate W	2761.0995	2714.0327	2480.4115	2082.2961	1597.7204	1051.9573	667.6156	705.1507	1143.0093	1746.4350	2290.2483	2744.1407 (97)
Space heating kWh	1216.0031	889.8706	712.4238	389.2655	167.7368	0.0000	0.0000	0.0000	0.0000	380.5172	826.1362	1254.9804 (98a)
Space heating requirement - total per year (kWh/year)												5836.9335
Solar heating kWh	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000 (98b)
Solar heating contribution - total per year (kWh/year)												0.0000
Space heating kWh	1216.0031	889.8706	712.4238	389.2655	167.7368	0.0000	0.0000	0.0000	0.0000	380.5172	826.1362	1254.9804 (98c)
Space heating requirement after solar contribution - total per year (kWh/year)												5836.9335
Space heating per m2										(98c) / (4) =		37.1656 (99)

9a. Energy requirements - Individual heating systems, including micro-CHP

Fraction of space heat from secondary/supplementary system (Table 11)	0.0000 (201)
Fraction of space heat from main system(s)	1.0000 (202)
Efficiency of main space heating system 1 (in %)	92.3000 (206)

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Efficiency of main space heating system 2 (in %)												0.0000 (207)
Efficiency of secondary/supplementary heating system, %												0.0000 (208)
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Space heating requirement	1216.0031	889.8706	712.4238	389.2655	167.7368	0.0000	0.0000	0.0000	0.0000	380.5172	826.1362	1254.9804 (98)
Space heating efficiency (main heating system 1)	92.3000	92.3000	92.3000	92.3000	92.3000	0.0000	0.0000	0.0000	0.0000	92.3000	92.3000	92.3000 (210)
Space heating fuel (main heating system)	1317.4465	964.1068	771.8567	421.7395	181.7300	0.0000	0.0000	0.0000	0.0000	412.2613	895.0554	1359.6754 (211)
Space heating efficiency (main heating system 2)	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000 (212)
Space heating fuel (main heating system 2)	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000 (213)
Space heating fuel (secondary)	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000 (215)
Water heating												
Water heating requirement	259.0650	229.0851	243.5958	215.0222	208.9378	188.8417	186.9253	194.1190	195.9656	217.8021	230.6631	256.3761 (64)
Efficiency of water heater	87.0752	86.7959	86.3194	85.3739	83.5718	79.8000	79.8000	79.8000	79.8000	85.2981	86.6666	79.8000 (216)
Fuel for water heating, kWh/month	297.5186	263.9354	282.2027	251.8595	250.0099	236.6437	234.2422	243.2569	245.5710	255.3424	266.1500	87.1330 (217)
Space cooling fuel requirement	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	294.2353 (219)
(221)m	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000 (221)
Pumps and Fa	7.3041	6.5973	7.3041	7.0685	7.3041	7.0685	7.3041	7.0685	7.3041	7.0685	7.3041	7.3041 (231)
Lighting	34.3846	27.5846	24.8369	18.1966	14.0556	11.4835	12.8219	16.6665	21.6481	28.4034	32.0816	35.3403 (232)
Electricity generated by PVs (Appendix M) (negative quantity)	-42.2245	-60.9318	-89.5989	-103.0864	-113.0933	-106.1628	-104.7595	-97.8955	-86.1873	-70.6287	-46.8812	-36.3359 (233a)
Electricity generated by wind turbines (Appendix M) (negative quantity)	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000 (234a)
Electricity generated by hydro-electric generators (Appendix M) (negative quantity)	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000 (235a)
Electricity used or net electricity generated by micro-CHP (Appendix N) (negative if net generation)	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000 (235c)
Electricity generated by PVs (Appendix M) (negative quantity)	-19.7827	-42.0205	-84.3027	-127.8016	-170.1938	-171.5337	-169.6149	-143.1457	-104.2386	-60.5972	-26.5671	-15.6213 (233b)
Electricity generated by wind turbines (Appendix M) (negative quantity)	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000 (234b)
Electricity generated by hydro-electric generators (Appendix M) (negative quantity)	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000 (235b)
Electricity used or net electricity generated by micro-CHP (Appendix N) (negative if net generation)	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000 (235d)
Annual totals kWh/year												
Space heating fuel - main system 1												6323.8716 (211)
Space heating fuel - main system 2												0.0000 (213)
Space heating fuel - secondary												0.0000 (215)
Efficiency of water heater												79.8000
Water heating fuel used												3120.9675 (219)
Space cooling fuel												0.0000 (221)
Electricity for pumps and fans:												
Total electricity for the above, kWh/year												86.0000 (231)
Electricity for lighting (calculated in Appendix L)												277.5036 (232)
Energy saving/generation technologies (Appendices M ,N and Q)												
PV generation												-2093.2054 (233)
Wind generation												0.0000 (234)
Hydro-electric generation (Appendix N)												0.0000 (235a)
Electricity generated - Micro CHP (Appendix N)												0.0000 (235)
Appendix Q - special features												
Energy saved or generated												-0.0000 (236)
Energy used												0.0000 (237)
Total delivered energy for all uses												7715.1373 (238)

12a. Carbon dioxide emissions - Individual heating systems including micro-CHP

	Energy kWh/year	Emission factor kg CO2/kWh	Emissions kg CO2/year
Space heating - main system 1	6323.8716	0.2100	1328.0130 (261)
Total CO2 associated with community systems			0.0000 (373)
Water heating (other fuel)	3120.9675	0.2100	655.4032 (264)
Space and water heating			1983.4162 (265)
Pumps, fans and electric keep-hot	86.0000	0.1387	11.9293 (267)
Energy for lighting	277.5036	0.1443	40.0523 (268)
Energy saving/generation technologies			
PV Unit electricity used in dwelling	-957.7856	0.1341	-128.4643
PV Unit electricity exported	-1135.4198	0.1256	-142.6185
Total			-271.0828 (269)
Total CO2, kg/year			1764.3151 (272)
EPC Target Carbon Dioxide Emission Rate (TER)			11.2300 (273)

13a. Primary energy - Individual heating systems including micro-CHP

	Energy kWh/year	Primary energy factor kg CO2/kWh	Primary energy kWh/year
Space heating - main system 1	6323.8716	1.1300	7145.9749 (275)
Total CO2 associated with community systems			0.0000 (473)
Water heating (other fuel)	3120.9675	1.1300	3526.6933 (278)
Space and water heating			10672.6682 (279)
Pumps, fans and electric keep-hot	86.0000	1.5128	130.1008 (281)
Energy for lighting	277.5036	1.5338	425.6442 (282)
Energy saving/generation technologies			
PV Unit electricity used in dwelling	-957.7856	1.4957	-1432.5432
PV Unit electricity exported	-1135.4198	0.4611	-523.4912
Total			-1956.0344 (283)
Total Primary energy kWh/year			9272.3789 (286)
Target Primary Energy Rate (TPER)			59.0400 (287)

A large, stylized leaf graphic in a muted green color, oriented vertically. It has a thick outline and a central vein, with several smaller veins branching off. The leaf is positioned in the background, behind the contact information.

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A large, stylized leaf graphic in a muted green color, oriented vertically with its stem at the bottom. The leaf has a simple outline and a single central vein.

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