



Building Stock	SI National	National Housing Stock of Slovenia	Year	2015
Details	ZRMK model			
Annotations to this sheet				

	1	2	3	4	5	6	7	8	9	10
Building type	SFH-TH.01-02	SFH-TH.03-04	SFH-TH.05-06	MFH-AB.01-02	MFH-AB.03-04	MFH-AB.05-06				
Dataset	SI.National.2015.001.01	SI.National.2015.001.02	SI.National.2015.001.03	SI.National.2015.001.04	SI.National.2015.001.05	SI.National.2015.001.06				

Thermal Envelope Average Building

Basic data	TABULA average buildings										
Floor area TABULA	147,1	151,0	150,4	1940,0	3085,0	6080,0					m ²
Floor area national	133,7	137,3	136,7	1763,6	2804,5	5527,3					m ²
Number of dwellings	1,53	1,34	0,89	39,80	60,51	98,28					

Thermal envelope areas (external dimensions)	TABULA average buildings										
Roof	129,1	121,7	115,6	279,5	357,6	1372,0					m ²
Wall	143,0	115,8	230,5	1323,5	1522,9	2244,6					m ²
Window	50,3	33,6	40,8	348,9	662,8	1018,8					m ²
Floor	117,2	119,3	123,8	278,0	380,9	1187,1					m ²

Original state / not refurbished fraction of the envelope area

U-values of the original state	Building stock model - state indicators										
Roof	1,68	0,39	0,18	1,58	1,50	0,17					W/(m ² K)
Wall	1,50	0,48	0,27	2,53	1,65	0,29					W/(m ² K)
Window	2,45	2,20	1,21	2,65	2,75	1,34					W/(m ² K)
Floor	1,68	0,61	0,26	1,55	0,93	0,25					W/(m ² K)

Refurbishments (averages)

Refurbished fraction of envelope areas	Building stock model - state indicators										
Roof	74%	44%	3%	66%	46%	4%					
Wall	44%	17%	3%	37%	21%	4%					
Window	52%	19%	3%	52%	31%	4%					
Floor											
<i>Total (indicative)</i>	<i>42%</i>	<i>20%</i>	<i>2%</i>	<i>38%</i>	<i>24%</i>	<i>3%</i>					

U-values of the refurbished fraction (averages)	Building stock model - state indicators										
Roof	0,21	0,15	0,10	0,21	0,21	0,09					W/(m ² K)
Wall	0,26	0,20	0,14	0,28	0,28	0,15					W/(m ² K)
Window	1,30	1,30	0,90	1,30	1,30	0,90					W/(m ² K)
Floor											W/(m ² K)

Energy Need for Heating TABULA

Utilisation	TABULA standard calculation procedure										
Utilisation dataset	EU.SUH	EU.SUH	EU.SUH	EU.MUH	EU.MUH	EU.MUH					
Internal temperature	20,0	20,0	20,0	20,0	20,0	20,0					°C
Reduction factor temp.	0,83	0,88	0,89	0,92	0,94	1,00					
Air exchange rate (use)	0,40	0,40	0,40	0,40	0,40	0,40					1/h
Internal heat sources	3,00	3,00	3,00	3,00	3,00	3,00					W/m ²
Red. factor ext. shading	0,60	0,60	0,60	0,60	0,60	0,60					
Energy need for DHW	10,0	10,0	10,0	15,0	15,0	15,0					kWh/(m ² a)

Climate	TABULA standard calculation procedure										
Climate dataset	national / whole country	national / whole country	national / whole country	national / whole country	national / whole country	national / whole country					
Base temperature	12,0	12,0	12,0	12,0	12,0	12,0					°C
Length of heating season	206	206	206	206	206	206					d/a
External temp. during HS	4,3	4,3	4,3	4,3	4,3	4,3					
Accum. temp. diff. ext. to int. temp.	3234	3234	3234	3234	3234	3234					Kd/a

Envelope	TABULA standard calculation procedure										
Heat transfer by transmission related to surface area	440	224	197	3512	4358	2929					W/K
related to surface area	1,00	0,57	0,39	1,58	1,49	0,50					W/(m ² K)
related to ref. floor area	2,99	1,49	1,31	1,81	1,41	0,48					W/(m ² K)

Annual energy balance building	TABULA standard calculation procedure										
Transmission heat losses	193,4	102,0	90,5	129,7	102,7	37,5					kWh/(m ² a)
Ventilation heat losses	33,0	35,0	26,4	36,5	37,1	29,7					kWh/(m ² a)
Usable solar gains	-12,0	-7,5	-9,1	-6,7	-8,1	-6,4					kWh/(m ² a)
Usable internal gains	-13,8	-14,1	-14,0	-14,1	-14,1	-14,3					kWh/(m ² a)
Energy need for heating recovered by vent. system	200,6	115,4	93,8	145,4	117,5	46,5					kWh/(m ² a)
Net energy need for heating	200,6	115,4	93,8	145,4	117,5	46,5					kWh/(m ² a)



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Total Building Stock

		Building stock model - state indicators									Total	
Number of buildings	10 ⁰	140 509	164 741	44 631	4 262	2 800	366					357 309
Number of dwellings	10 ⁰	214 701	221 186	39 684	169 624	169 426	36 008					850 629
Floor area national	10 ⁶ m ²	19	23	6	8	8	2					65
Floor area TABULA	10 ⁶ m ²	21	25	7	8	9	2					71

Ventilation Systems with Heat Recovery

	Building stock model - state indicators									
Occurrences	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%

Heating Systems

Occurrences or Fractions of Produced Heat

	Building stock model - state indicators												
1	Bio	B_WP	C	31%	31%	30%	26%	26%	32%				
2	DH	TS	C	1%	2%	4%	3%	4%	0%				
3	El	HP_Air	C	15%	15%	14%	17%	15%	15%				
4	Oil	B_NC_CT	C	19%	19%	17%	16%	15%	18%				
5	Coal	B_NC_LT	C	8%	7%	9%	9%	9%	8%				
6	Gas	B_C	C	15%	15%	16%	18%	19%	17%				
7													
8													
9													
10													
11													
12													
13													
14													
15													
16													
17													
18													
19													
20													
	Sum			90%	89%	90%	89%	88%	91%				
	thereof central			90%	89%	90%	89%	88%	91%				
	decentral												
	Other Systems			10%	11%	10%	11%	12%	9%				

DHW Systems

Occurrences or Fractions of Produced Heat

	Building stock model - state indicators												
1	Oil	B_NC	C	18%	17%	17%	11%	11%	16%				
2	DH	TS	C	1%	1%	4%	2%	3%	0%				
3	Gas	B_C	C	2%	2%	4%	2%	2%	5%				
4	Gas	G_IWH_NC	C	1%	1%	1%	1%	1%	1%				
5	Bio	B_C	C	11%	10%	11%	10%	11%	9%				
6	Bio	B_WP	C	20%	19%	19%	15%	13%	17%				
7	Bio	B_WP	C	7%	8%	8%	3%	5%	9%				
8	El	HP_Grounc	C	1%	2%	2%	1%	1%	3%				
9	El	HP_Air	D	13%	13%	10%	11%	13%	17%				
10	Gas	G_IWH	C	1%	1%	1%	1%	1%	1%				
11	El	E	D	3%	4%	3%	13%	15%					
12	-	Solar	C	7%	8%	6%	6%	7%	5%				
13	Coal	B_NC_CT	C	7%	6%	9%	7%	7%	7%				
14	Gas	G_Tank	D	1%	1%	1%	8%	4%	4%				
15	Oil	B_NC_LT	C	5%	7%	5%	11%	6%	8%				
16													
17													
18													
19													
20													
	Sum			100%	100%	100%	100%	100%	101%				
	thereof central			82%	82%	87%	69%	67%	80%				
	decentral			18%	18%	13%	31%	33%	21%				
	Other Systems								-1%				



Building Stock **SI National** National Housing Stock of Slovenia Year 2015

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Annotations to this sheet

Total Building Stock

	1	2	3	4	5	6	7	8	9	10	Total
Building type	SFH-TH.01-02	SFH-TH.03-04	SFH-TH.05-06	MFH-AB.01-02	MFH-AB.03-04	MFH-AB.05-06					
Floor area TABULA	10 ⁶ m ²	21	25	7	8	9	2	0	0	0	71

All energy quantities in **GWh/a**

Heating Systems

Heat Demand for Heating	TABULA standard calculation procedure / projection to building stock										Total
Energy need for heating	4 145	2 871	630	1 202	1 015	104					9 966
Net en. need for heating	4 145	2 871	630	1 202	1 015	104					9 966
Produced heat	4 564	3 135	666	1 369	1 106	116					10 956

Delivered Energy TABULA	TABULA standard calculation procedure / projection to building stock										Sum
1 Bio B_WP C	2 857	1 180	241	718	350	45					5 390
2 DH TS C	59	51	27	43	41	1					221
3 EI HP_Air C	250	171	32	84	60	6					603
4 Oil B_NC_CT C	1 069	713	140	266	204	26					2 418
5 Coal B_NC_LT C	398	253	65	142	116	10					983
6 Gas B_C C	764	512	118	272	229	22					1 916
7											
8											
9											
10											
11											
12											
13											
14											
15											
16											
17											
18											
19											
20											
Not specified systems	410	325	62	127	120	10					1 053
Auxiliary energy	50	60	16	20	21	5					172
CHP electr. production											0

DHW Systems

Heat Demand for DHW	TABULA standard calculation procedure / projection to building stock										Total
Energy need for DHW	207	249	67	124	130	33					810
Produced heat	228	285	77	132	142	37					901

Delivered Energy TABULA	TABULA standard calculation procedure / projection to building stock										Total
1 Oil B_NC C	55	64	18	20	21	8					186
2 DH TS C	3	4	3	3	4	0					17
3 Gas B_C C	7	8	3	3	3	2					26
4 Gas G_IWH_NC C	3	4	1	2	2	0					12
5 Bio B_C C	24	28	8	13	15	3					92
6 Bio B_WP C	94	106	30	39	37	12					318
7 Bio B_WP C	19	27	8	5	9	4					70
8 EI HP_Grounc C	1	1	0	0	0	0					4
9 EI HP_Air D	11	13	3	5	7	2					40
10 Gas G_IWH C	2	3	1	1	1	0					9
11 EI E D	7	11	2	17	21	0					58
12 - Solar C	0	0	0	0	0	0					0
13 Coal B_NC_CT C	20	22	8	10	12	3					75
14 Gas G_Tank D	2	3	0	10	6	2					22
15 Oil B_NC_LT C	13	23	4	16	10	3					70
16											
17											
18											
19											
20											
Not specified systems	0	0	0	0	0	0					0
Auxiliary energy	0	42	11	14	15	4					86
CHP electr. production											0



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Annotations to this sheet

Total Building Stoc	1	2	3	4	5	6	7	8	9	10	Total	
Building type	SFH-TH.01-02	SFH-TH.03-04	SFH-TH.05-06	MFH-AB.01-02	MFH-AB.03-04	MFH-AB.05-06						
Floor area TABULA	10 ⁶ m ²	21	25	7	8	9	2	0	0	0	0	71

Total Heat Need and Final Energy All energy quantities in **GWh/a** Heating + DHW

Simplified TABULA projection	fuels related to gross calorific value (TABULA standard)							TABULA standard calculation procedure projection to building stock				Total	per m ²
Net heat need	4 352	3 119	697	1 326	1 144	137						10 776	151
Produced heat	4 793	3 420	743	1 501	1 248	152						11 857	166
Gas	777	528	123	288	241	26						1 984	28
Oil	1 138	801	161	302	235	37						2 674	37
Coal	417	275	73	152	127	13						1 058	15
Bio	2 993	1 341	286	775	411	64						5 870	82
DH	62	55	30	45	45	1						237	3
EI (incl. aux. en.)	320	297	65	140	123	18						964	14
Other / not specified	410	325	62	127	120	9						1 053	15
Sum final energy	6 116	3 623	802	1 829	1 302	168	0	0	0	0		13 840	194
CHP electr. production	0	0	0	0	0	0						0	0

Separate individual model

or total metered consumption

Separate individual model or total metered consumption	fuels related to gross calorific value (TABULA standard)							Individual building stock model				Total	per m ²
Net heat need	2 906	2 721	284	868	736	97						7 611	107
Produced heat	3 192	2 970	314	1 006	794	103						8 379	117
Gas	1,00	420	506	136	167	201	54					1 485	21
Oil	1,00	443	533	144	178	214	58					1 570	22
Coal	1,00	1	1	0	0	0	0					2	0
Bio	1,00	1 477	1 778	480	653	786	212					5 385	75
DH		250	301	81	101	121	33					886	12
EI		287	346	93	122	147	40					1 036	15
Other / not specified		136	164	44	32	38	10					425	6
Sum final energy		3 013	3 628	979	1 253	1 509	407	0	0	0	0	10 789	151
CHP electr. production		0	0	0	0	0	0					0	0

Ratio of individual model or total metered consumption to simplified TABULA projection (TABULA balance calibration factors)

								Total
Net heat need	67%	87%	41%	65%	64%	71%		71%
Produced heat	67%	87%	42%	67%	64%	68%		71%
Gas	54%	96%	110%	58%	84%	208%		75%
Oil	39%	67%	89%	59%	91%	156%		59%
Coal	0%	0%	0%	0%	0%	1%		0%
Bio	49%	133%	168%	84%	191%	330%		92%
DH	405%	548%	269%	222%	272%	4467%		373%
EI	90%	116%	143%	87%	119%	221%		108%
Other	33%	50%	71%	25%	32%	113%		40%
Sum final energy	49%	100%	122%	69%	116%	242%		78%
CHP electr. production								