



Nezavisni operator sistema u Bosni i Hercegovini
Независни оператор система у Босни и Херцеговини
Neovisni operator sustava u Bosni i Hercegovini
Independent System Operator in Bosnia and Herzegovina

REPORT

ON POWER FLOWS IN THE TRANSMISSION SYSTEM OF BOSNIA AND HERZEGOVINA IN 2022

Sarajevo, February 2023

This Report presents power flows in the transmission system in BiH in 2022. It includes main review of power flows and specific indicators and their comparison with previous year.

Electricity balance in the transmission system

Total amount of 18 337 GWh of electricity was available in the transmission network of BiH in 2022. Total of 14 330 GWh was produced in the transmission system and another 178 GWh of electricity was injected from the distribution system. From the neighbouring systems 3 828 GWh of electricity was received.

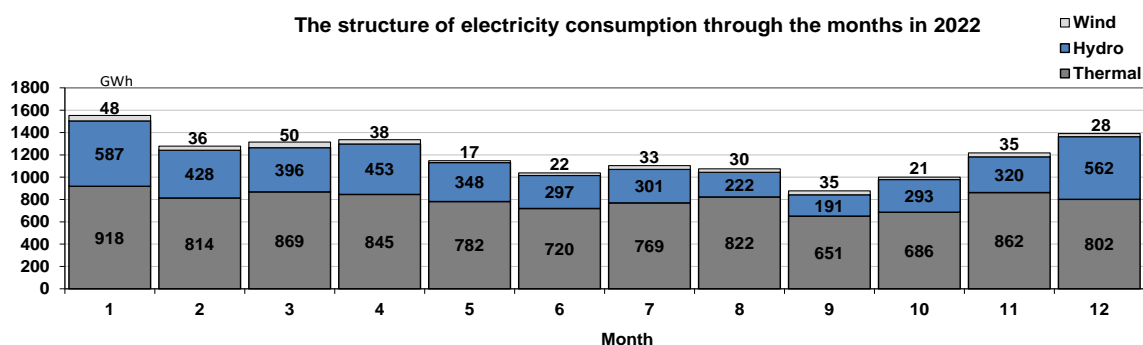
Out of totally available electricity in the transmission network, distribution companies took over 9 997 GWh, customers directly connected to the transmission system took over 975 GWh, neighbouring systems were delivered 6 856 GWh, while transmission losses amounted to 333 GWh, which makes 1,82 % of totally available electricity in the transmission network. In 2022, PSHPP Čapljina in pumping regime took over 35 GWh.

Takeover of electricity from the transmission system in BiH in 2022 was nearly the same as in 2021.

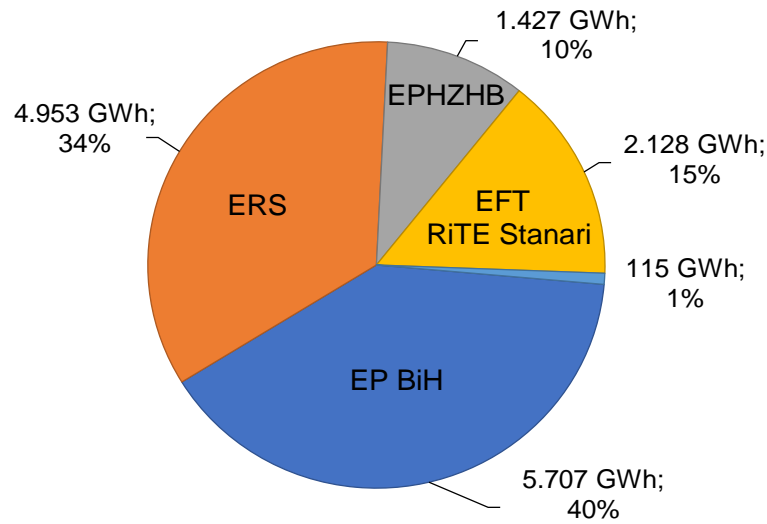
Electricity generation in the transmission system

Out of totally produced 14 330 GWh of electricity in the transmission system in 2022, Hydro Power Plants produced 4 398 GWh, i.e. 31% of electricity, and Thermal Power Plants produced 9 540 GWh, i.e. 67% of electricity. Wind Power Plants generated 392 GWh i.e. 3% of electricity. In 2022 Thermal Power Plants generation is 1.9% lower and Hydro Power Plants generation is 27.3% lower, while Wind Power Plants generated 2% more electricity than in 2021.

The following diagrams show the structure of electricity generation over 12 months in 2022 and generation companies' share in total amount of electricity generation in BiH.



Companies' shares in the electricity generation

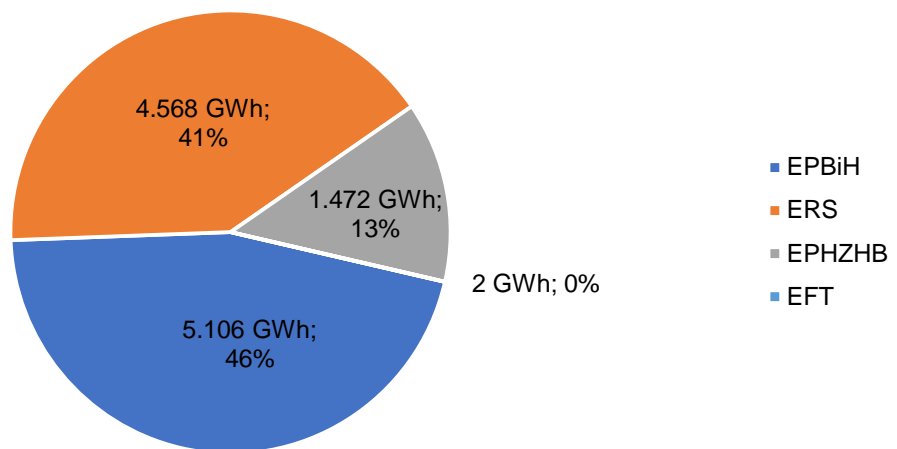


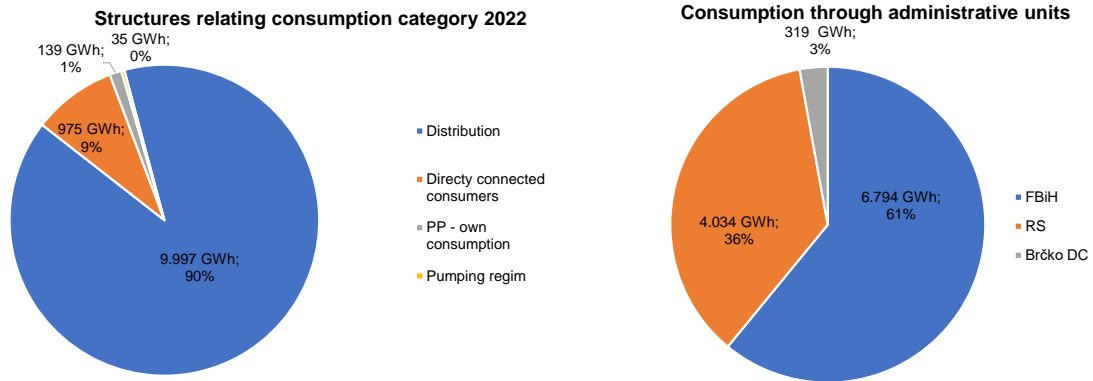
Electricity consumption in the transmission system

Electricity consumption in the transmission system of BiH in 2022 amounted to 11 147 GWh and was close to that in 2021. Consumption of PSHHP Čapljina in pumping regime amounted to 35 GWh. Distribution companies took over 9 997 GWh from the transmission system, and users directly connected to the transmission system took over 975 GWh of electricity. The power plants' own consumption in 2022 amounted to 139 GWh.

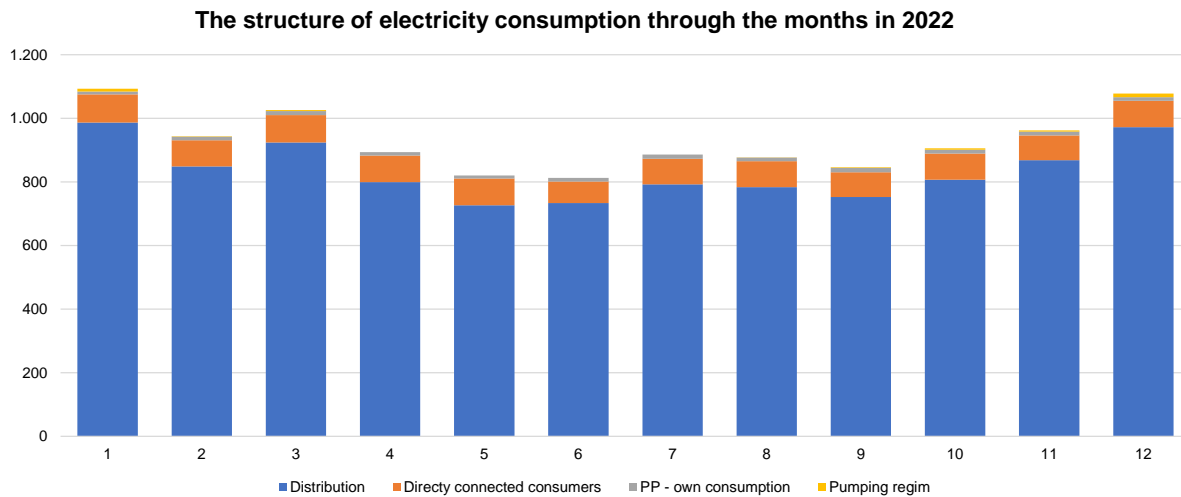
The following diagrams show the consumption of balance responsible parties and the consumption structure in terms of consumption categories and administrative units in BiH.

BRP's electricity takeover from the BiH transmission system in 2022





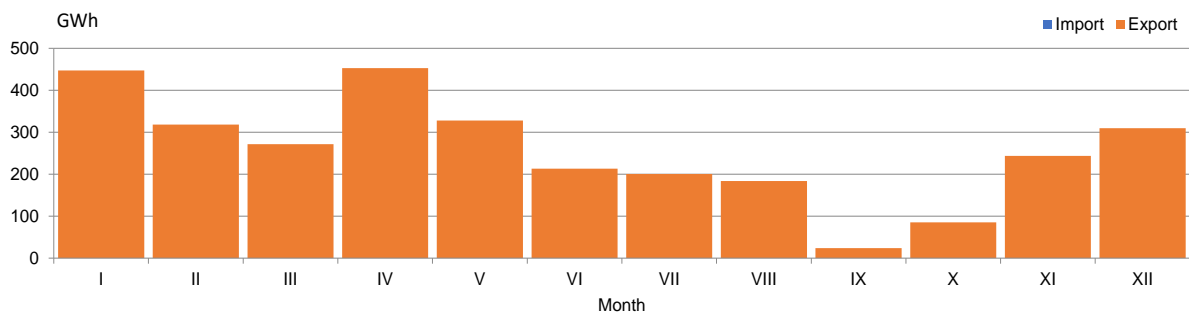
The highest monthly consumption of 1 093 GWh in the transmission system in BiH was recorded in January. The lowest monthly consumption was in July amounting to 813 GWh of electricity. The following diagram shows monthly consumption in the transmission system in BiH.



Nominated power exchange with neighbouring systems

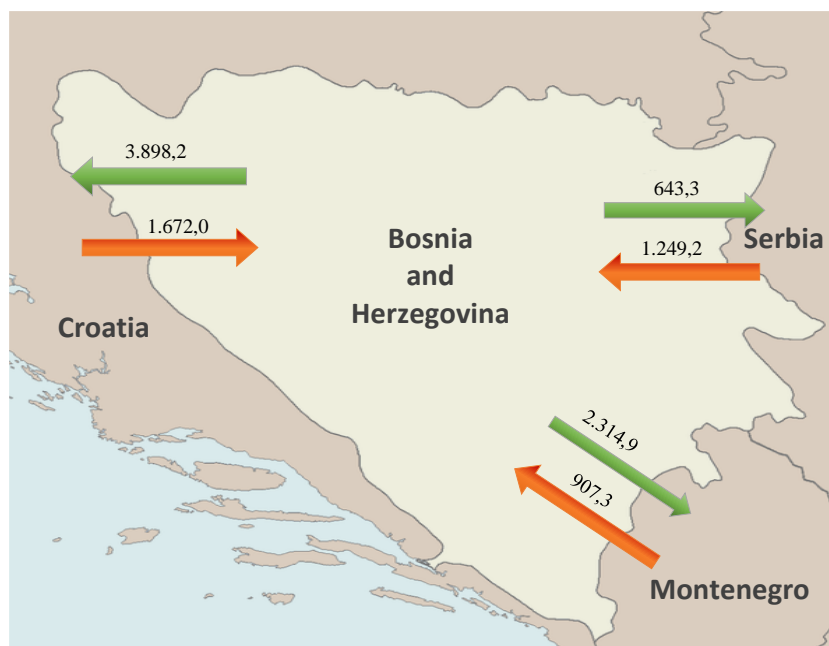
According to nominated exchange programmes, in the year 2022, 4 265 GWh of electricity was imported in BiH power system, and 7 344 GWh of electricity was exported from BiH power system. In 2022, out of the above given amount 3 397 GWh of electricity was transited over BiH transmission network. The balance amount of 3 079 GWh of exported energy indicates that electricity export was 36% lower than in 2021.

Balance of nominated exchange in BiH in 2022



Crossborder power flows

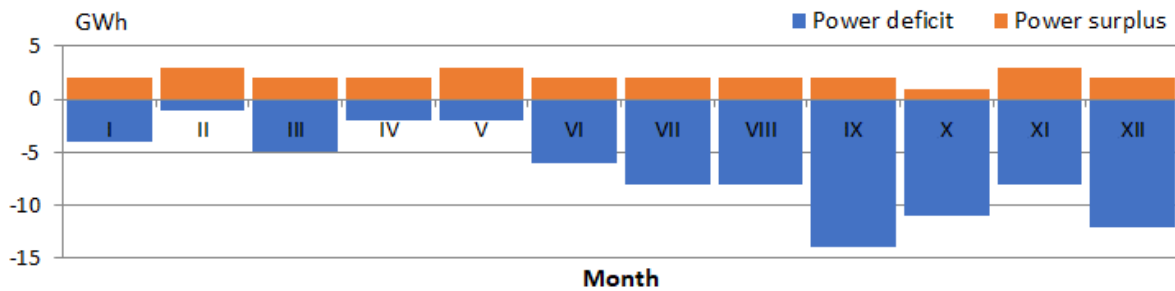
Actual physical power flows on interconnection lines in 2022 resulted with the balance of exchanged electricity of BiH Control Area in amount of 3 028 GWh in direction of export. From neighbouring systems 3 829 GWh was injected in BiH transmission system and in other systems 6 856 GWh of electricity was delivered. Power flows on the borders with neighbouring systems were such that in 2022 on the border with Serbia 606 GWh was injected in BiH transmission system, while on the border with Croatia 2 226 GWh of electricity was delivered, and on the border with Montenegro 1 408 GWh of electricity was delivered.



Deviations from nominated exchange programmes

Unintentional deviations from nominated exchange programmes in 2022 were 79 GWh in total for the hours with deficit registered, i.e. the total of 25 GWh for the hours with energy surplus registered in BiH Control Area. Maximum hourly electricity deficit in amount of 270 MWh/h was registered in December, and electricity surplus of 95 MWh/h was registered in September 2022.

Monthly deviations of ees BiH toward the interconnection 2022

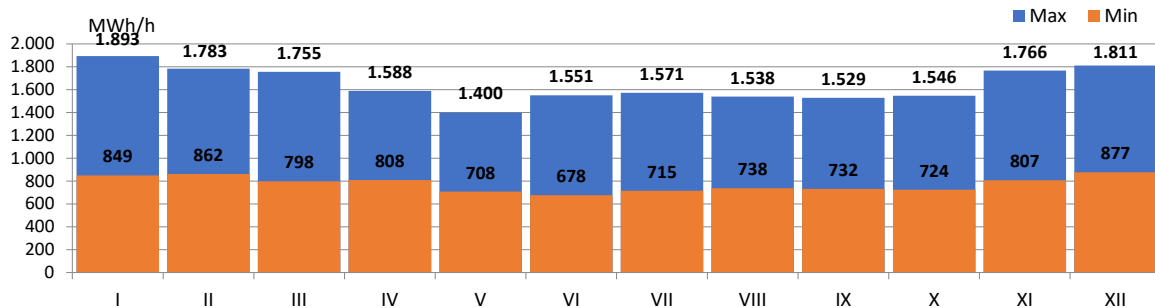


Specific values of hourly and daily consumption

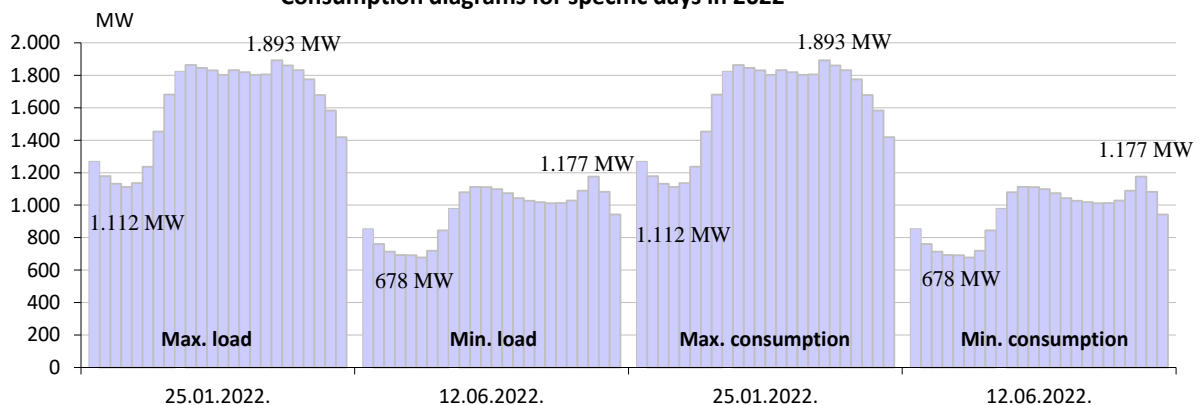
Maximum hourly load in 2022 in amount of 1 893 MWh/h was realized on 25th January 2022 in the 18th hour. Maximum daily consumption in amount of 38 667 MWh of electricity was realized on 25th January. Minimum hourly consumption in amount of 678 MWh was registered on 12th June 2022 in the 6th hour, and minimum daily consumption of electricity in amount of 22 842 MWh was registered on 12th June.

Specific values of electricity consumption in 2022									
Max hourly consumption			Min hourly consumption			Max daily consumption		Min daily consumption	
MWh	Day	Hour	MWh	Day	Hour	MWh	Day	MWh	Day
1.893	25.01.2022.	18:00	678	12.06.2022.	6:00	38.667	25.01.2022.	22.842	12.06.2022.

Minimum and maximum hourly consumption through the months in 2022



Consumption diagrams for specific days in 2022



BALANCE OF ELECTRICITY IN THE TRANSMISSION SYSTEM

	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	2022	2022/21
	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	%
Electricity generation in the transmission system														
(1) HPP	587	428	396	453	348	297	301	222	191	293	320	562	4.398	73%
(2) TPP	918	814	869	845	782	720	769	822	651	686	862	802	9.540	98%
(3) WPP	48	36	50	38	17	22	33	30	35	21	35	28	392	102%
(4) Generation TOTAL (1+2+3)	1.553	1.278	1.314	1.336	1.148	1.038	1.103	1.074	877	1.000	1.217	1.391	14.330	89%
(5) Energy received from the distrib. system	19	12	12	38	24	10	6	6	7	7	12	24	178	90%
Electricity import from the neighbouring power systems														
(6) from EES Croatia	159	141	133	103	132	95	94	87	175	236	133	184	1.672	94%
(7) from EES Serbia	26	37	112	77	51	139	176	160	162	133	89	88	1.249	142%
(8) from EES Montenegro	40	26	74	43	28	89	121	148	73	30	92	144	907	151%
(9) Import TOTAL (6+7+8)	225	204	318	222	210	323	392	395	411	398	314	416	3.828	117%
(10) AVAILABLE ENERGY (3+4+8)	1.796,4	1.493,6	1.644,5	1.596,8	1.383,0	1.371,0	1.501,4	1.475,3	1.294,6	1.404,6	1.543,7	1.831,5	18.336,5	93%
Takeover of electricity from the transmission system														
(11) Distribution companies	987	849	924	800	727	734	792	784	753	807	868	972	9.997	100%
(12) Directly connected consumers *	89	82	86	84	84	68	81	81	78	82	78	83	975	96%
(13) Power plants own consumption	9	11	13	11	9	11	13	11	14	12	12	11	139	127%
(14) Takeover TOTAL (11+12+13)	1.085	943	1.023	894	820	813	886	877	844	902	958	1.067	11.112	100%
Electricity Export to the neighbouring power systems														
(15) for EES Croatia	282	200	356	339	168	328	449	433	257	222	366	498	3.898	88%
(16) for EES Serbia	113	88	48	76	94	32	13	22	29	40	38	50	643	79%
(17) for EES Montenegro	275	236	184	260	277	173	124	118	137	212	149	168	2.315	83%
(18) Export TOTAL (15+16+17)	670	524	587	675	540	533	587	573	423	474	554	716	6.856	86%
(19) Pumping	9	1	3	0	0	0	0	0	2	4	4	11	35	24%
(20) REQUIRED POWER (14+18+19)	1.763,7	1.467,6	1.613,8	1.569,6	1.359,8	1.345,8	1.473,7	1.449,6	1.269,9	1.379,9	1.515,7	1.794,3	18.003,5	94%
Transmission losses														
(21) Transmission losses (10-20)	33	26	31	27	23	25	28	26	25	25	28	37	333	90%
(22) In relation to available power (21)/(10)	1,82%	1,74%	1,87%	1,70%	1,67%	1,84%	1,85%	1,74%	1,91%	1,75%	1,82%	2,03%	1,82%	97%

ELECTRICITY INJECTED IN THE TRANSMISSION SYSTEM

OBJECT	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	2022	2022/21
	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	%
HPP Jablanica	100	63	44	62	51	34	36	36	31	43	38	60	597	69,44%
HPP Grabovica	34	24	17	23	18	12	12	12	11	16	16	26	223	67,34%
HPP Salakovac	47	29	20	42	26	14	10	10	11	17	30	51	310	64,66%
HPP Višegrad	88	74	79	126	100	57	33	29	32	28	72	137	854	72,73%
HPP Trebinje 1	42	30	36	12	10	29	44	25	8	34	10	19	300	68,29%
HPP Trebinje 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0,00%
HPP Dubrovnik (GZ)	68	51	57	36	18	45	69	41	16	68	46	59	576	153,98%
HPP Bočac	27	20	17	27	22	16	9	7	9	10	17	28	209	80,15%
HPP Dub	9	8	7	9	6	3	2	2	2	1	2	7	58	73,88%
HPP Rama	78	73	75	12	41	54	44	40	37	33	20	26	533	77,29%
HPP Mostar	26	17	14	26	17	10	8	8	9	12	20	28	195	74,89%
HPP Jajce 1	31	20	18	28	25	15	9	7	8	10	18	29	219	85,24%
HPP Jajce 2	9	7	6	8	8	6	5	4	4	5	6	8	77	93,67%
PSHPP Čapljina	8	5	5	18	1	1	19	1	12	15	16	50	150	26,97%
HPP Peć-Mlinski	9	3	2	8	3	0	0	0	0	0	3	11	38	51,35%
HPP Mostarsko Blato	11	3	1	16	3	0	0	0	0	0	5	22	61	44,31%
HYDRO POWER PLANTS	587,5	427,8	396,2	453,3	348,4	296,5	300,9	222,2	190,6	293,0	320,2	561,6	4.398,1	72,69%
TPP Tuzla	244	248	204	205	189	175	215	229	181	191	194	199	2.474	91,34%
TPP Kakanj	186	165	198	188	110	152	196	138	183	153	195	118	1.981	97,33%
TPP Ugljevik	146	128	156	118	147	124	140	114	111	0	132	133	1.449	91,33%
TPP Gacko	138	119	146	139	138	77	24	145	143	142	146	151	1.508	99,15%
TPP Stanari	204	155	165	194	199	191	195	196	33	200	194	201	2.128	113,66%
THERMAL POWER PLANTS	917,7	813,9	868,7	844,9	782,4	719,5	769,1	822,4	651,4	686,0	862,1	802,1	9.540,3	98,11%
WPP Meshovina	20	16	19	16	7	9	12	11	13	8	13	11	155	94,88%
WPP Jelovača	14	11	14	11	5	6	9	9	10	6	11	8	115	102,63%
WPP Podveležje	13	9	16	11	5	7	12	10	12	7	12	9	122	113,05%
WIND POWER PLANT GENERATION	47,7	35,8	49,6	38,0	17,5	21,7	33,0	29,9	34,7	21,1	35,1	27,5	391,6	102,28%
	1.552,9	1.277,6	1.314,4	1.336,3	1.148,3	1.037,7	1.103,0	1.074,4	876,7	1.000,0	1.217,4	1.391,3	14.330,1	88,69%

TAKE OVER FROM THE TRANSMISSION SYSTEM

CATEGORY	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XI	2022	2022/21
	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	%
Take over from the transmission sy	1,093,4	944,1	1,026,4	894,2	820,3	812,7	886,4	876,7	846,8	906,1	962,0	1,076,2	11,147,2	99,25%
Distribution	438	375	409	362	330	328	354	351	346	369	391	437	4,491	101,05%
Direct consumers	48	45	46	44	43	29	40	42	39	43	44	49	512	93,28%
Power Plants - their own consumpti	7	8	10	9	7	8	9	7	11	8	10	9	104	141,38%
EPBiH	493,8	429,1	464,7	414,8	380,5	364,6	403,1	399,8	396,1	419,8	444,7	495,2	5,106,2	100,79%
Distribution	413	356	388	330	299	301	321	316	304	333	362	404	4,129	99,57%
Direct consumers	37	34	37	36	37	36	37	37	36	37	31	31	425	158,45%
Power Plants - their own consumpti	1	1	0	1	1	2	2	1	1	2	1	1	14	76,00%
ERS	450,9	390,4	425,9	367,1	336,8	338,8	360,4	354,5	341,0	371,5	394,5	436,1	4,567,9	103,03%
Distribution	135	118	127	108	98	104	117	117	102	106	115	131	1,378	100,31%
Direct consumers	4	3	4	3	4	3	4	3	3	2	2	4	39	301,05%
Power Plants - their own consumpti	1	1	2	1	1	2	3	3	2	2	1	1	20	112,65%
Pumping regime - PHE Čapljina	9	1	3	0	0	0	0	0	2	4	4	11	35	24,35%
EPHZHB	148,7	123,9	135,0	112,4	103,0	109,3	122,9	122,4	109,7	114,8	122,8	146,9	1,471,5	95,07%
Distribution	0	0	0	0	0	0	0	0	0	0	0	0	0	
Direct consumers	0	0	0	0	0	0	0	0	0	0	0	0	0	0,00%
Power Plants - their own consumpti	0	1	1	0	0	0	0	0	0	0	0	0	0	
EFT	0,0	0,7	0,9	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	1,6	1,06%

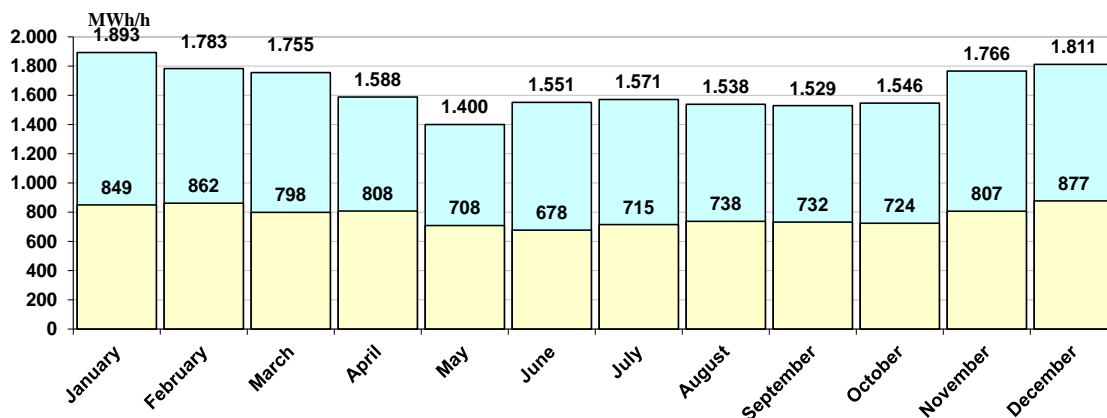
Data on specific hourly and daily consumption in 2022

Month	Max.hourly consumption			Min.hourly consumption			Max.daily consumption		Min.daily consumption	
	MWh/h	Dan	Sat	MWh/h	Dan	Sat	MWh	Dan	MWh	Dan
January	1.893	25.1.2022	18	849	2.1.2022	5	38.667	25.1.2022	28.822	1.1.2022
February	1.783	1.2.2022	18	862	21.2.2022	4	36.345	2.2.2022	30.062	20.2.2022
March	1.755	7.3.2022	10	798	28.3.2022	4	35.713	9.3.2022	26.608	27.3.2022
April	1.588	20.4.2022	10	808	17.4.2022	6	32.528	21.4.2022	26.279	24.4.2022
May	1.400	5.5.2022	21	708	16.5.2022	4	27.747	5.5.2022	23.757	29.5.2022
June	1.551	29.6.2022	15	678	12.6.2022	6	30.425	30.6.2022	22.842	12.6.2022
July	1.571	25.7.2022	15	715	10.7.2022	6	30.546	25.7.2022	23.290	10.7.2022
August	1.538	5.8.2022	15	738	22.8.2022	4	30.242	5.8.2022	24.747	21.8.2022
September	1.529	22.9.2022	20	732	19.9.2022	4	29.665	22.9.2022	24.740	11.9.2022
October	1.546	21.10.2022	19	724	3.10.2022	4	30.430	21.10.2022	24.223	2.10.2022
November	1.766	29.11.2022	17	807	7.11.2022	4	35.318	30.11.2022	28.747	6.11.2022
December	1.811	13.12.2022	18	877	11.12.2022	4	36.491	13.12.2022	30.871	11.12.2022
2022	1.893	25.1.2022	18	678	12.6.2022	6	38.667	25.1.2022	22.842	12.6.2022

Specific values of electricity consumption in 2022

Max hourly consumption			Min hourly consumption			Max daily consumption		Min daily consumption	
MWh	Day	Hour	MWh	Day	Hour	MWh	Day	MWh	Day
1.893	25.01.2022.	18:00	678	12.06.2022.	6:00	38.667	25.01.2022.	22.842	12.06.2022.

Minimum and maximum hourly consumption through the months in 2022



Diagrams of consumption for the days of the months with max. hourly consumption

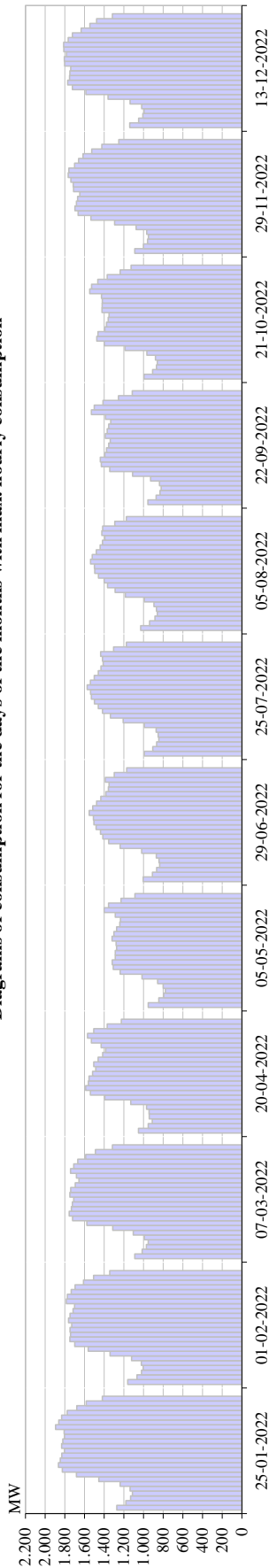


Diagram of consumption for a day in a month with max hourly consumption

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Σ
January	1.271	1.179	1.131	1.112	1.137	1.237	1.453	1.681	1.824	1.864	1.845	1.830	1.803	1.832	1.819	1.803	1.806	1.893	1.861	1.832	1.775	1.678	1.583	1.419	38,667
February	1.161	1.067	1.021	1.003	1.022	1.121	1.340	1.561	1.698	1.748	1.742	1.747	1.729	1.763	1.747	1.716	1.700	1.783	1.774	1.734	1.695	1.610	1.508	1.344	36,331
March	1.088	1.013	970	952	991	1.104	1.313	1.576	1.721	1.755	1.733	1.722	1.709	1.749	1.739	1.693	1.655	1.681	1.742	1.709	1.668	1.587	1.489	1.315	35,675
April	1.051	952	911	942	943	970	1.129	1.393	1.540	1.588	1.560	1.554	1.518	1.484	1.505	1.461	1.414	1.384	1.431	1.530	1.568	1.506	1.369	1.225	31,927
May	952	844	794	778	800	856	1.015	1.237	1.308	1.318	1.287	1.286	1.274	1.278	1.318	1.301	1.273	1.240	1.234	1.288	1.400	1.354	1.229	1.086	27,747
June	1.003	909	867	835	842	869	1.018	1.237	1.354	1.413	1.436	1.481	1.504	1.509	1.551	1.516	1.477	1.433	1.383	1.357	1.349	1.387	1.298	1.170	30,198
July	992	906	867	844	851	871	991	1.206	1.335	1.417	1.460	1.498	1.529	1.538	1.571	1.540	1.501	1.459	1.433	1.410	1.416	1.435	1.304	1.173	30,546
August	1.028	937	883	860	867	893	990	1.185	1.289	1.366	1.399	1.458	1.496	1.499	1.538	1.521	1.480	1.440	1.416	1.392	1.424	1.415	1.291	1.173	30,242
September	956	871	831	820	838	928	1.111	1.343	1.429	1.438	1.392	1.376	1.354	1.338	1.388	1.369	1.354	1.332	1.386	1.529	1.500	1.411	1.255	1.115	29,665
October	995	908	869	859	879	966	1.188	1.398	1.474	1.463	1.392	1.375	1.359	1.350	1.421	1.420	1.418	1.427	1.546	1.527	1.464	1.369	1.236	1.127	30,430
November	1.088	999	958	950	966	1.075	1.294	1.534	1.664	1.696	1.682	1.669	1.648	1.711	1.714	1.737	1.766	1.758	1.700	1.659	1.615	1.527	1.423	1.251	35,083
December	1.140	1.050	1.006	994	1.018	1.137	1.360	1.585	1.722	1.770	1.752	1.748	1.740	1.801	1.805	1.783	1.810	1.811	1.765	1.722	1.633	1.546	1.476	1.316	36,491

Diagrams of consumption for the days of the months with min. hourly consumption

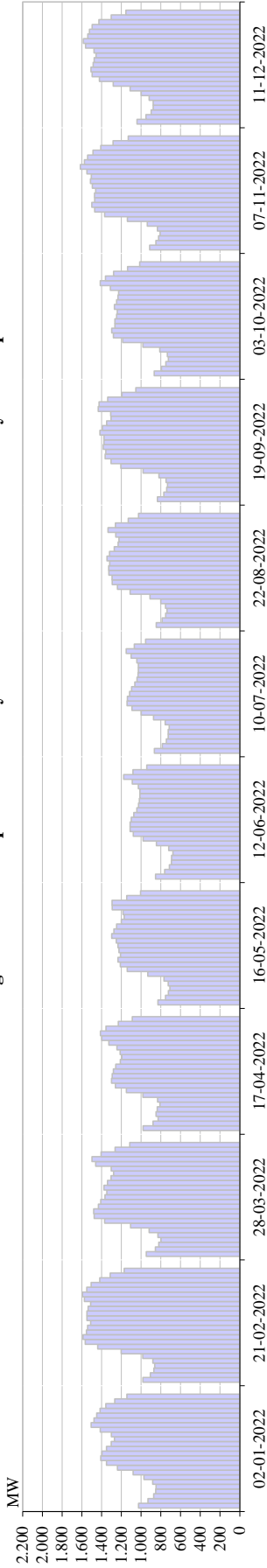


Diagram of consumption for a day in a month with min hourly consumption

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Σ
January	1.026	930	872	852	849	883	971	1.081	1.240	1.351	1.409	1.396	1.350	1.302	1.271	1.301	1.414	1.506	1.476	1.449	1.415	1.358	1.267	1.145	29.114
February	982	906	870	862	881	984	1.202	1.439	1.565	1.588	1.554	1.541	1.511	1.549	1.549	1.537	1.512	1.575	1.593	1.550	1.506	1.419	1.314	1.171	32.159
March	948	856	821	798	829	919	1.107	1.369	1.475	1.481	1.433	1.409	1.366	1.347	1.377	1.341	1.305	1.279	1.304	1.460	1.498	1.406	1.263	1.115	29.505
April	980	879	829	849	837	808	833	982	1.150	1.260	1.299	1.292	1.280	1.256	1.211	1.195	1.213	1.245	1.326	1.398	1.412	1.357	1.232	1.090	27.212
May	829	753	724	708	726	768	931	1.141	1.211	1.235	1.209	1.225	1.235	1.251	1.298	1.275	1.247	1.201	1.172	1.183	1.293	1.294	1.145	1.006	26.061
June	854	761	714	692	692	678	719	845	980	1.079	1.112	1.111	1.099	1.074	1.044	1.027	1.018	1.012	1.013	1.028	1.089	1.177	1.082	942	22.842
July	866	785	744	726	725	715	757	874	998	1.093	1.143	1.140	1.116	1.096	1.064	1.042	1.031	1.028	1.028	1.043	1.101	1.152	1.068	954	23.290
August	848	787	751	738	753	801	910	1.112	1.240	1.294	1.294	1.326	1.328	1.319	1.346	1.321	1.272	1.232	1.224	1.256	1.336	1.260	1.130	1.026	26.904
September	835	770	740	732	748	820	980	1.205	1.305	1.365	1.357	1.384	1.376	1.417	1.391	1.349	1.305	1.308	1.434	1.425	1.339	1.194	1.054	28.206	
October	868	793	749	724	734	812	982	1.187	1.281	1.298	1.265	1.248	1.248	1.242	1.271	1.249	1.234	1.228	1.312	1.414	1.362	1.279	1.137	1.014	26.946
November	913	849	822	807	834	938	1.139	1.369	1.470	1.499	1.471	1.472	1.460	1.495	1.514	1.504	1.550	1.616	1.575	1.542	1.488	1.409	1.284	1.131	31.152
December	1.042	951	897	877	878	919	999	1.112	1.283	1.423	1.495	1.507	1.486	1.476	1.456	1.477	1.563	1.585	1.541	1.523	1.497	1.428	1.302	1.154	30.871

Diagrams of consumption on a 3rd Wednesday in each month

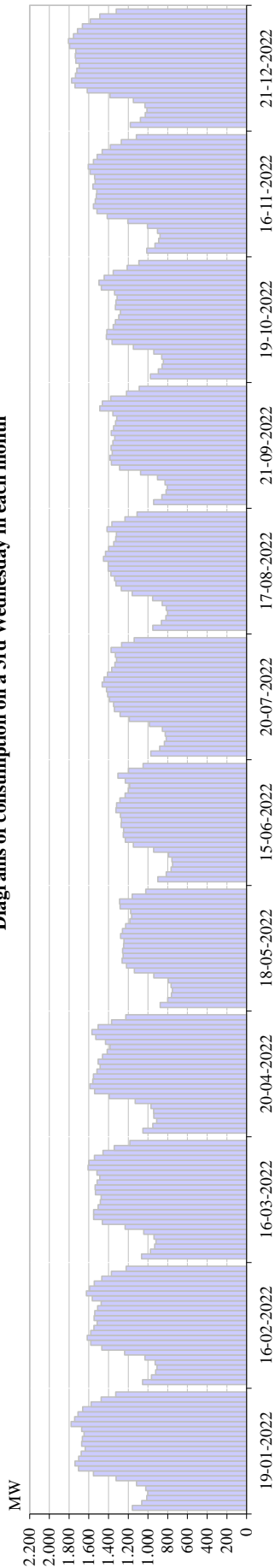


Diagram of consumption on the third Wednesday in a month

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Σ	
January	19-01-2022	1158	1063	1013	1002	1023	1117	1324	1553	1705	1741	1703	1677	1636	1672	1665	1648	1672	1779	1744	1710	1661	1577	1475	1327	35.644
February	16-02-2022	1054	965	922	908	927	1030	1237	1468	1580	1616	1581	1548	1515	1546	1539	1511	1476	1566	1624	1593	1545	1468	1371	1221	32.809
March	16-03-2022	1065	975	932	919	939	1043	1232	1463	1551	1551	1505	1484	1476	1532	1535	1516	1488	1518	1607	1599	1543	1457	1342	1183	32.454
April	20-04-2022	1051	952	911	942	943	970	1129	1393	1540	1588	1560	1554	1518	1484	1505	1461	1414	1384	1431	1530	1568	1506	1369	1225	31.927
May	18-05-2022	876	800	763	752	766	795	941	1137	1219	1262	1253	1257	1248	1243	1278	1259	1227	1184	1165	1175	1283	1288	1161	1023	26.354
June	15-06-2022	900	815	766	750	758	792	942	1149	1229	1251	1247	1272	1269	1279	1325	1318	1284	1232	1199	1186	1230	1304	1197	1050	26.742
July	20-07-2022	972	881	835	815	825	855	985	1189	1282	1341	1348	1390	1408	1420	1464	1446	1410	1368	1335	1318	1329	1375	1267	1140	29.000
August	17-08-2022	952	864	818	801	816	855	952	1161	1271	1325	1339	1376	1404	1404	1430	1398	1348	1327	1320	1320	1415	1366	1233	1112	28.734
September	21-09-2022	943	859	817	804	826	903	1075	1288	1371	1386	1362	1374	1356	1338	1372	1348	1328	1316	1356	1488	1463	1379	1218	1089	29.061
October	19-10-2022	975	895	858	844	860	940	1149	1363	1422	1417	1352	1331	1296	1279	1330	1326	1313	1338	1474	1496	1444	1352	1211	1093	29.357
November	16-11-2022	1012	930	891	878	904	1005	1204	1414	1518	1554	1535	1525	1520	1557	1535	1541	1588	1605	1554	1516	1464	1381	1271	1118	32.019
December	21-12-2022	1179	1077	1027	1011	1030	1148	1385	1616	1740	1775	1735	1722	1698	1732	1737	1732	1794	1806	1756	1715	1665	1585	1489	1321	36.473

Diagrams of consumption for the days of the months with max. consumption

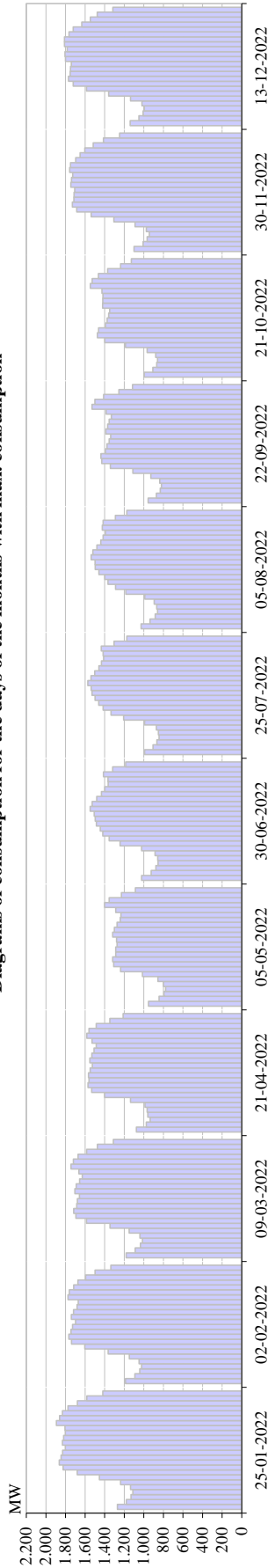


Diagram of consumption for a day in a month with max. consumption

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Σ
January	1.271	1.179	1.131	1.112	1.137	1.237	1.453	1.681	1.824	1.864	1.864	1.845	1.830	1.803	1.819	1.803	1.806	1.893	1.861	1.832	1.775	1.678	1.583	1.419	38.667
February	1.188	1.092	1.042	1.023	1.048	1.149	1.364	1.602	1.739	1.765	1.743	1.729	1.698	1.698	1.718	1.682	1.670	1.775	1.760	1.715	1.673	1.595	1.498	1.337	36.345
March	1.180	1.088	1.035	1.015	1.040	1.149	1.345	1.586	1.694	1.694	1.685	1.678	1.659	1.659	1.705	1.691	1.656	1.663	1.743	1.719	1.671	1.583	1.473	1.311	35.713
April	1.076	974	935	960	966	988	1.136	1.400	1.532	1.570	1.559	1.565	1.548	1.526	1.552	1.531	1.509	1.486	1.529	1.582	1.561	1.486	1.347	1.211	32.528
May	952	844	794	778	800	856	1.015	1.237	1.308	1.318	1.287	1.286	1.274	1.278	1.318	1.301	1.273	1.240	1.234	1.288	1.400	1.354	1.229	1.086	27.747
June	1.022	924	876	855	858	885	1.023	1.242	1.353	1.420	1.446	1.484	1.497	1.508	1.549	1.527	1.481	1.432	1.398	1.364	1.366	1.412	1.317	1.186	30.425
July	992	906	867	844	851	871	991	1.206	1.335	1.417	1.460	1.498	1.529	1.538	1.571	1.540	1.501	1.459	1.433	1.410	1.416	1.435	1.304	1.173	30.546
August	1.028	937	883	860	867	893	990	1.185	1.289	1.366	1.399	1.458	1.496	1.499	1.538	1.521	1.480	1.440	1.416	1.392	1.424	1.415	1.291	1.173	30.242
September	956	871	831	820	838	928	1.111	1.343	1.429	1.438	1.392	1.376	1.354	1.338	1.388	1.369	1.354	1.332	1.386	1.329	1.500	1.411	1.255	1.115	29.665
October	995	908	869	859	879	966	1.188	1.398	1.474	1.463	1.392	1.375	1.359	1.350	1.421	1.420	1.418	1.427	1.546	1.527	1.464	1.369	1.236	1.127	30.430
November	1.100	1.007	965	943	975	1.089	1.305	1.538	1.685	1.730	1.715	1.712	1.706	1.746	1.738	1.727	1.758	1.749	1.695	1.652	1.652	1.517	1.413	1.247	35.318
December	1.140	1.050	1.006	994	1.018	1.137	1.360	1.585	1.722	1.770	1.752	1.748	1.740	1.801	1.805	1.783	1.810	1.811	1.765	1.722	1.633	1.546	1.476	1.316	36.491

Diagrams of consumption for the days of the months with min. consumption

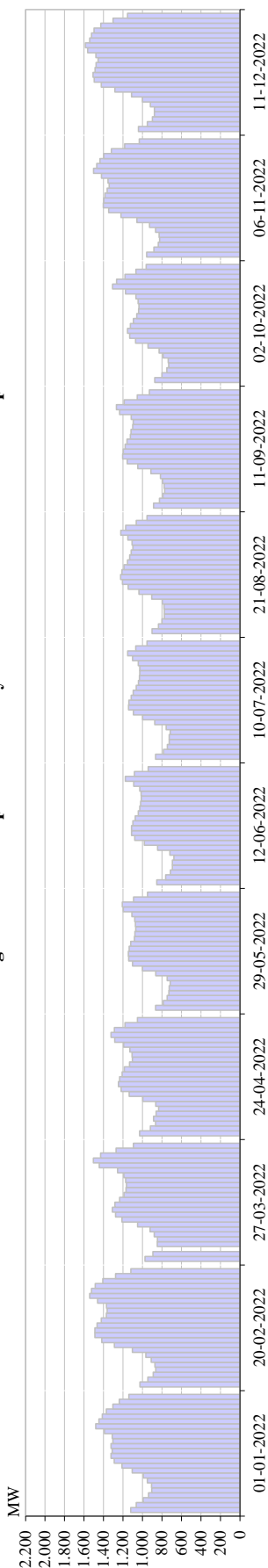


Diagram of consumption for a day in a month with min. consumption

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Σ
January	1.121	1.063	993	937	905	907	950	991	1.105	1.211	1.290	1.323	1.310	1.323	1.303	1.310	1.389	1.479	1.446	1.412	1.371	1.304	1.237	1.139	28.822
February	1.026	945	890	864	872	910	966	1.104	1.288	1.417	1.488	1.488	1.466	1.423	1.371	1.363	1.369	1.461	1.541	1.523	1.485	1.407	1.275	1.119	30.062
March	973	893	849	849	847	880	923	1.050	1.210	1.275	1.309	1.283	1.235	1.190	1.168	1.164	1.173	1.192	1.256	1.443	1.505	1.429	1.270	1.092	26.608
April	1.030	919	866	885	861	834	864	996	1.136	1.219	1.246	1.235	1.209	1.187	1.132	1.103	1.106	1.129	1.192	1.285	1.322	1.289	1.180	1.052	26.279
May	865	786	747	729	725	716	746	864	1.000	1.102	1.141	1.146	1.137	1.121	1.082	1.078	1.069	1.073	1.079	1.108	1.196	1.206	1.092	949	23.757
June	854	761	714	692	692	678	719	845	980	1.079	1.112	1.111	1.099	1.074	1.044	1.027	1.018	1.012	1.013	1.028	1.089	1.177	1.082	942	22.842
July	866	785	744	726	725	715	757	874	998	1.093	1.143	1.140	1.116	1.096	1.064	1.042	1.031	1.028	1.028	1.043	1.101	1.152	1.068	954	23.290
August	902	835	799	776	776	779	796	906	1.036	1.146	1.205	1.225	1.210	1.189	1.153	1.131	1.116	1.098	1.107	1.150	1.223	1.172	1.064	952	24.747
September	886	826	789	772	778	793	815	913	1.049	1.157	1.204	1.196	1.178	1.159	1.125	1.117	1.100	1.096	1.116	1.234	1.268	1.187	1.054	929	24.740
October	873	799	750	731	735	787	830	942	1.070	1.132	1.153	1.124	1.092	1.059	1.039	1.037	1.045	1.067	1.175	1.307	1.265	1.180	1.068	962	24.223
November	956	883	837	823	829	866	927	1.056	1.221	1.346	1.402	1.397	1.384	1.363	1.342	1.354	1.421	1.502	1.469	1.436	1.397	1.319	1.183	1.033	28.747
December	1.042	951	897	877	878	919	999	1.112	1.283	1.423	1.495	1.507	1.486	1.476	1.456	1.477	1.563	1.585	1.541	1.523	1.497	1.428	1.302	1.154	30.871

NOMINATED EXCHANGE PROGRAME WITH NEIGHBOURING POWER SYSTEMS

NOMINATED EXCHANGE	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	2022
	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh
BiH <-> CRO (HEP-OPS)	149,8	157,4	54,6	104,1	83,7	62,7	85,8	90,4	135,2	168,1	133,0	128,4	1.353,2
BiH <-> SR (EMS)	80,2	87,5	105,0	112,1	224,5	181,9	187,7	122,2	181,7	130,4	113,7	152,2	1.678,9
BiH <-> MG (EPCG)	105,0	104,5	146,4	33,7	26,2	88,9	119,4	122,7	61,0	128,1	148,8	148,0	1.232,8
(1) Received BiH	335,0	349,3	306,0	249,8	334,4	333,5	393,0	335,3	377,9	426,6	395,5	428,6	4.264,9
BiH -> CRO (HEP-OPS)	212,3	149,1	244,3	211,1	121,5	191,1	237,8	158,5	118,2	139,4	209,7	319,0	2.312,1
BiH -> SR (EMS)	280,0	234,1	125,3	194,1	189,5	113,6	136,4	149,4	49,9	102,7	233,7	256,6	2.065,2
BiH -> MG (EPCG)	289,9	284,5	208,2	297,4	351,5	242,4	219,6	211,2	233,9	270,1	195,8	162,6	2.967,0
(2) Delivered BiH	782,2	667,8	577,8	702,6	662,6	547,0	593,8	519,0	402,0	512,1	639,2	738,2	7.344,4
(3) Balance BiH (2) - (1)	447,2	318,4	271,8	452,8	328,2	213,5	200,8	183,7	24,1	85,6	243,7	309,6	3.079,4
Balance CRO (HEP-OPS)	62,5	-8,3	189,7	107,0	37,9	128,3	152,0	68,1	-17,0	-28,7	76,7	190,6	958,8
Balance SR (EMS)	199,8	146,6	20,3	82,0	-35,0	-68,3	-51,3	27,2	-131,8	-27,7	120,1	104,5	386,4
Balance MG (EPCG)	184,9	180,1	61,8	263,7	325,3	153,4	100,2	88,4	172,9	142,0	47,0	14,6	1.734,2
Transit	297,9	289,5	258,1	219,6	316,2	285,3	307,5	255,1	304,8	260,4	305,0	297,5	3.397,0

PHYSICAL EXCHANGE OF BIH WITH NEIGHBOURING POWER SYSTEMS

PHYSICAL FLOWS	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	2022
	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh
BiH <-> CRO (HOPS)	159,4	141,1	132,9	103,0	131,6	95,4	94,3	86,6	175,4	235,8	132,8	183,7	1.672,0
BiH<->SR (EMS)	25,6	37,0	111,8	76,6	50,9	138,6	176,4	160,5	162,0	132,7	89,4	87,7	1.249,2
BiH<->MG (EPCG)	39,6	25,5	73,5	42,6	27,9	89,3	121,3	148,3	73,3	29,6	92,0	144,4	907,3
(1) Received BiH	224,6	203,6	318,2	222,2	210,3	323,3	392,0	395,3	410,7	398,1	314,2	415,8	3.828,5
BiH -> CRO (HOPS)	282,2	200,0	356,0	338,9	168,3	328,1	449,4	432,5	256,7	221,5	366,5	498,0	3.898,2
BiH -> SR (EMS)	113,0	88,0	47,8	76,0	93,8	31,9	13,5	22,4	29,3	39,9	37,9	49,7	643,3
BiH -> MG (EPCG)	275,1	235,5	183,6	260,5	277,4	173,1	124,4	118,0	137,1	212,4	149,3	168,4	2.314,9
(2) Delivered BiH	670,3	523,5	587,4	675,4	539,6	533,1	587,3	572,9	423,1	473,9	553,7	716,2	6.856,3
(3) Balance BiH (2) - (1)	445,7	319,9	269,2	453,2	329,2	209,7	195,3	177,6	12,4	75,8	239,4	300,3	3.027,8
Balance CRO (HOPS)	122,7	58,9	223,1	235,9	36,7	232,7	355,1	346,0	81,3	-14,2	233,6	314,3	2.226,2
BALANCE SR (EMS)	87,4	51,0	-64,0	-0,6	42,9	-106,7	-162,9	-138,1	-132,7	-92,8	-51,4	-38,0	-605,9
BALANCE MG (EPCG)	235,6	210,0	110,0	217,8	249,6	83,7	3,1	-30,3	63,8	182,9	57,3	24,0	1.407,5

Deviations of EES BiH towards the Interconnection in 2022

Month	Deviation - Energy shortage			Deviation - Energy surplus			Deviation - Total		
	Max. hourly MWh/h	Average MWh/h	Total MWh	Max. hourly MWh/h	Average MWh/h	Total MWh	Max. Hourly MWh/h	Average MWh/h	Total MWh
January	-111	-9	-3.606	29	5	1.846	-111	-2	-1.759
February	-68	-6	-1.491	40	7	3.059	-68	2	1.568
March	-54	-9	-4.543	45	7	1.749	-54	-4	-2.795
April	-51	-6	-2.147	43	7	2.462	-51	0	314
May	-59	-6	-1.662	36	6	2.793	-59	2	1.131
June	-145	-13	-6.002	53	8	2.071	-145	-5	-3.931
July	-98	-14	-7.555	64	9	1.850	-98	-8	-5.705
August	-209	-15	-8.075	62	9	1.817	-209	-8	-6.258
September	-238	-24	-13.552	95	11	1.705	-238	-16	-11.847
October	-127	-17	-10.714	84	8	1.064	-127	-13	-9.650
November	-78	-16	-7.708	57	14	3.181	-78	-6	-4.527
December	-270	-21	-11.514	52	9	1.858	-270	-13	-9.657
2022	-270	-14	-78.571	95	8	25.409	-270	-6	-53.117