



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

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## **REPORT**

### **ON POWER FLOWS IN THE TRANSMISSION SYSTEM OF BOSNIA AND HERZEGOVINA IN 2023**

Sarajevo, February 2024

This Report presents power flows in the transmission system in BiH in 2023. 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 18 790 GWh of electricity was available in the transmission network of BiH in 2023. Total of 14 873 GWh was produced in the transmission system and another 263 GWh of electricity was injected from the distribution system. From the neighbouring systems 3 655 GWh of electricity was received.

Out of totally available electricity in the transmission network, distribution companies took over 9 864 GWh, customers directly connected to the transmission system took over 567 GWh, neighbouring systems were delivered 7 886 GWh, while transmission losses amounted to 335 GWh, which makes 1,79 % of totally available electricity in the transmission network. In 2023, PSHPP Čapljina in pumping regime took over 15 GWh.

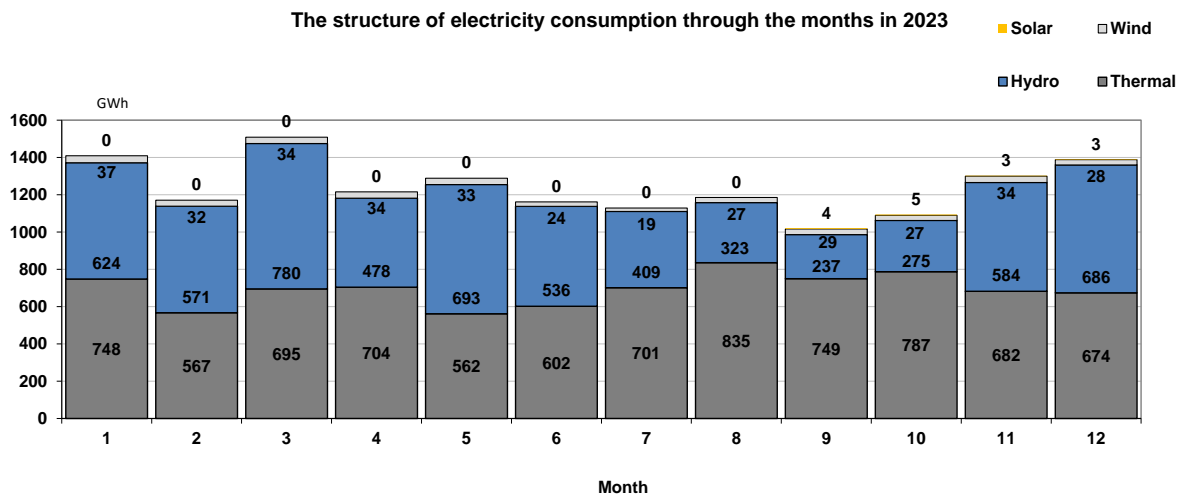
Takeover of electricity from the transmission system in BiH in 2023 was 5% less as in 2022.

**Electricity generation in the transmission system**

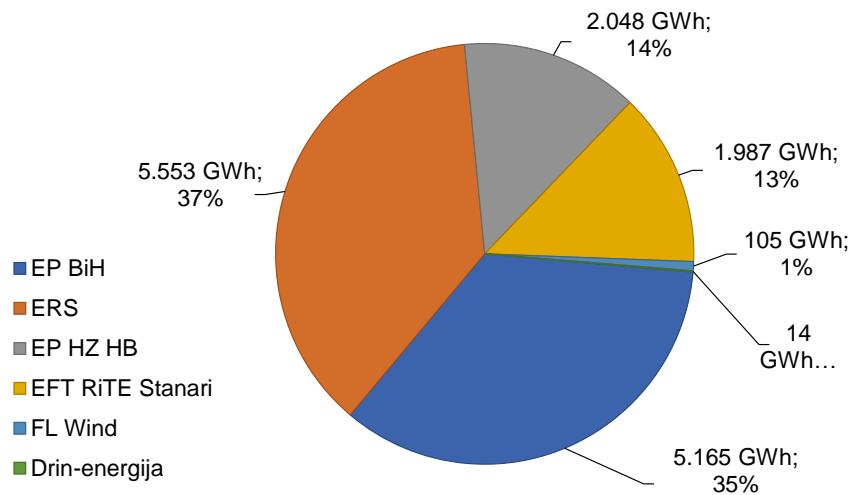
Out of totally produced 14 873 GWh of electricity in the transmission system in 2023, Hydro Power Plants produced 6 195 GWh, i.e. 42% of electricity, and Thermal Power Plants produced 8 306 GWh, i.e. 56% of electricity. Wind Power Plants generated 357 GWh i.e. 2% of electricity. In 2022 Thermal Power Plants generation is 13% lower and Hydro Power Plants generation is 41% more, while Wind Power Plants generated 9% lower electricity than in 2022.

First Solar Power Plant (SPP) was connected to the transmission grid in September. SPP Petnjik produced 14 GWh electricity in 2023.

The following diagrams show the structure of electricity generation over 12 months in 2023 and generation companies' share in total amount of electricity generation in BiH.



**Companies' shares in the electricity generation**

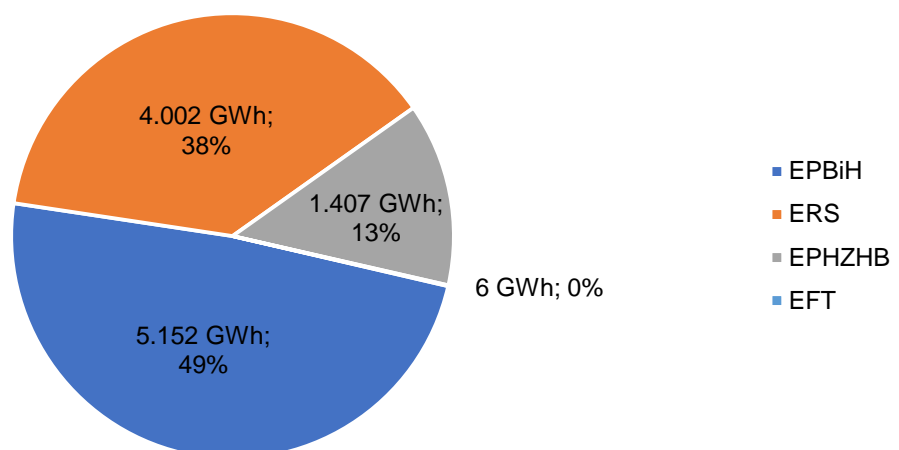


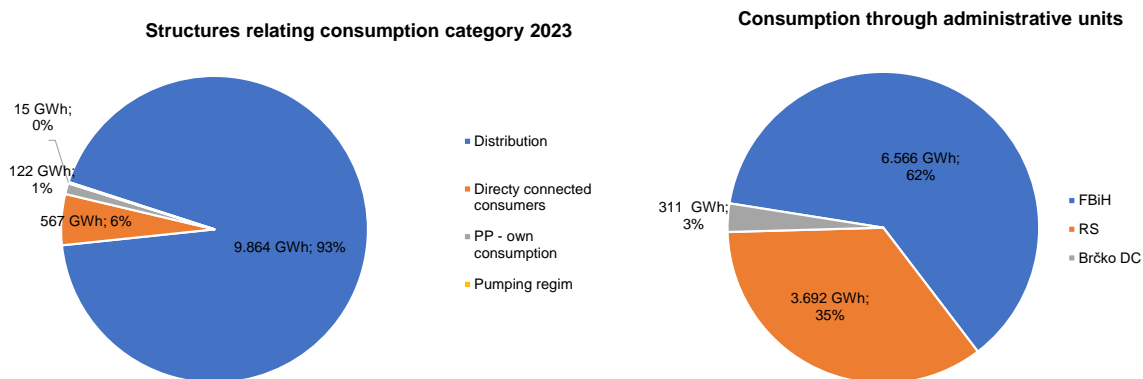
**Electricity consumption in the transmission system**

Electricity consumption in the transmission system of BiH in 2023 amounted to 10 568 GWh and was 5% lower than in 2022. Consumption of PSHHP Čapljina in pumping regime amounted to 15 GWh. Distribution companies took over 9 864 GWh from the transmission system, and users directly connected to the transmission system took over 567 GWh of electricity. The power plants' own consumption in 2023 amounted to 122 GWh.

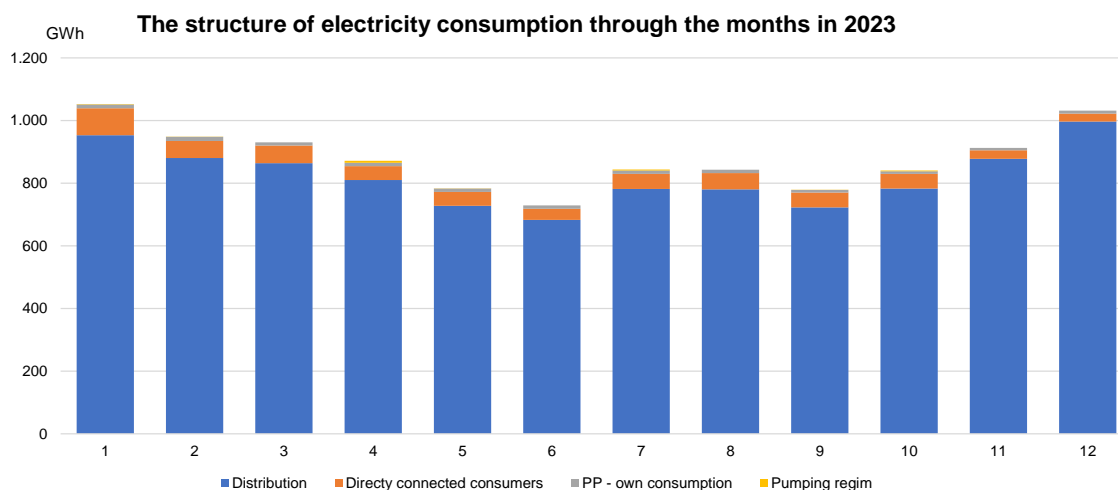
The following diagrams show the consumption of balance responsible parties and the consumption structure in terms of consumption categories and administrative units in BiH.

**BRP's electricity takeover from the BiH transmission system in 2023**





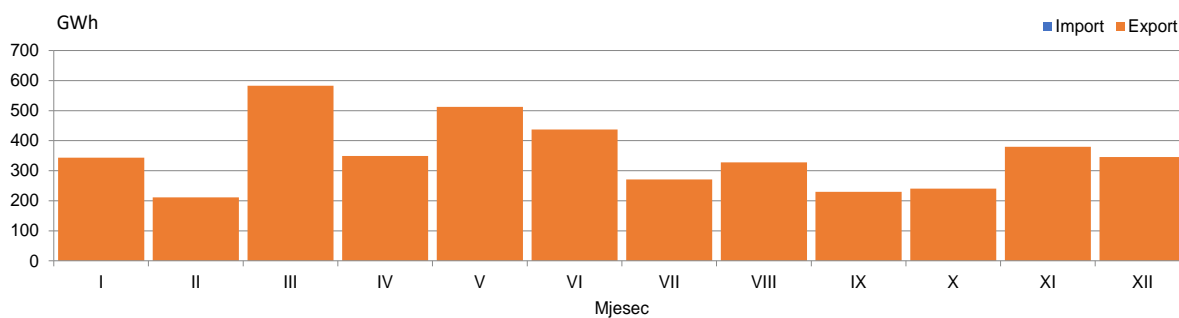
The highest monthly consumption of 1 053 GWh in the transmission system in BiH was recorded in January. The lowest monthly consumption was in June amounting to 729 GWh of electricity. The following diagram shows monthly consumption in the transmission system in BiH.



### Nominated power exchange with neighbouring systems

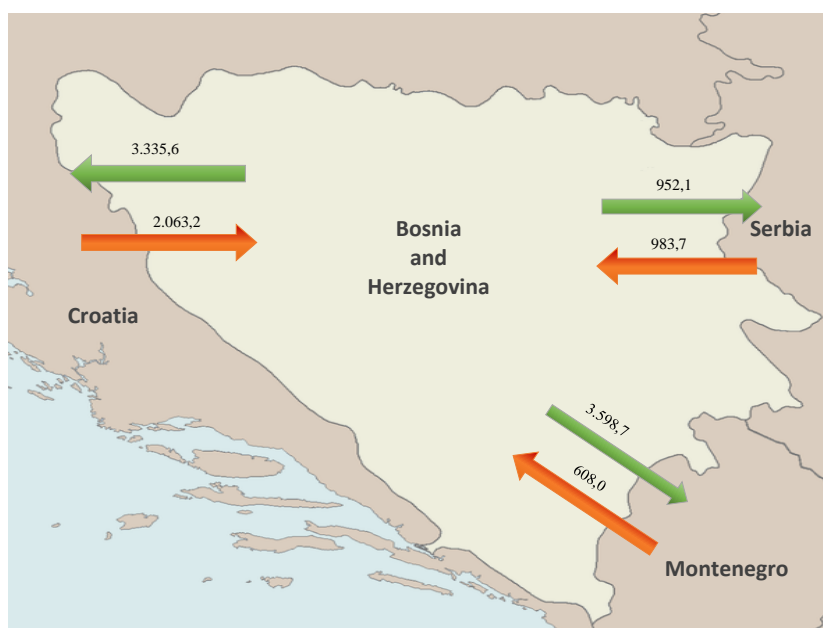
According to nominated exchange programmes, in the year 2023, 4 153 GWh of electricity was imported in BiH power system, and 8 384 GWh of electricity was exported from BiH power system. In 2023, out of the above given amount 3 235 GWh of electricity was transited over BiH transmission network. The balance amount of 4 231 GWh of exported energy indicates that electricity export was 37% higher than in 2022.

Balance of nominated exchange in BiH in 2023



### Crossborder power flows

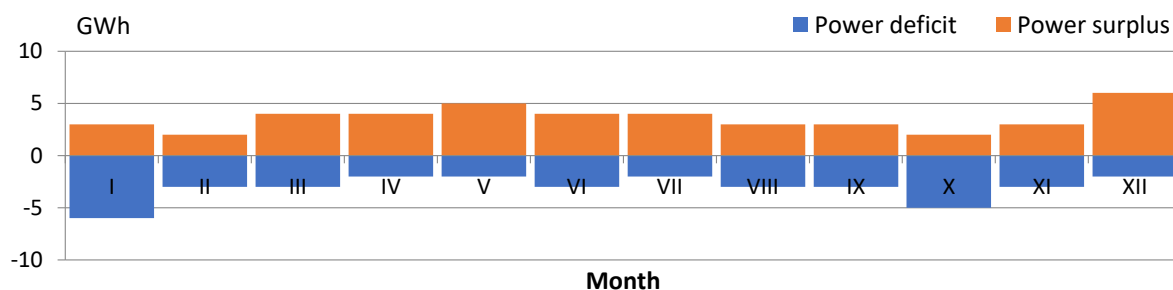
Actual physical power flows on interconnection lines in 2023 resulted with the balance of exchanged electricity of BiH Control Area in amount of 4 231 GWh in direction of export. From neighbouring systems 3 655 GWh was injected in BiH transmission system and in other systems 7 886 GWh of electricity was delivered. Power flows on the borders with neighbouring systems were such that in 2023 on the border with Serbia 32 GWh was injected in BiH transmission system, while on the border with Croatia 1 272 GWh of electricity was delivered, and on the border with Montenegro 2 991 GWh of electricity was delivered.



### Deviations from nominated exchange programmes

Unintentional deviations from nominated exchange programmes in 2023 were 40 GWh in total for the hours with deficit registered, i.e. the total of 42 GWh for the hours with energy surplus registered in BiH Control Area. Maximum hourly electricity deficit in amount of 163 MWh/h was registered in May, and electricity surplus of 138 MWh/h was registered in February 2023.

### Monthly deviations of ees BiH toward the interconnection 2023



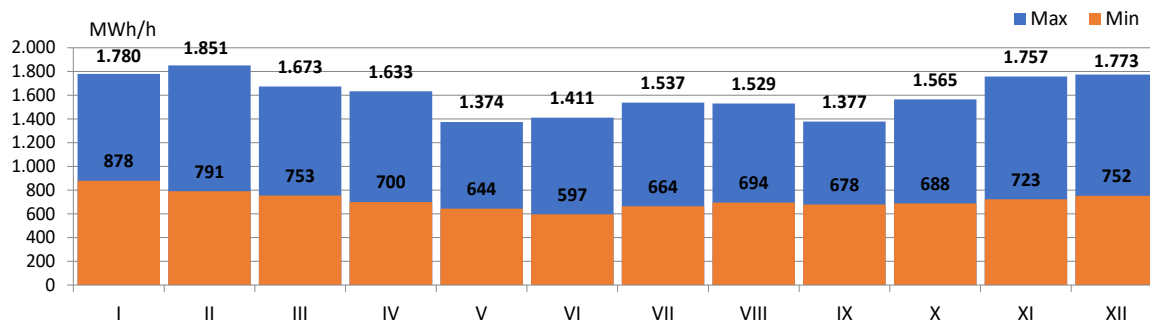
### Specific values of hourly and daily consumption

Maximum hourly load in 2023 in amount of 1 851 MWh/h was realized on 9<sup>th</sup> February 2023 in the 19<sup>th</sup> hour. Maximum daily consumption in amount of 37 952 MWh of electricity was realized on 8<sup>th</sup> February. Minimum hourly consumption in amount of 597 MWh was registered on 12<sup>th</sup> June 2023 in the 4<sup>th</sup> hour, and minimum daily consumption of electricity in amount of 20 885 MWh was registered on 18<sup>th</sup> June.

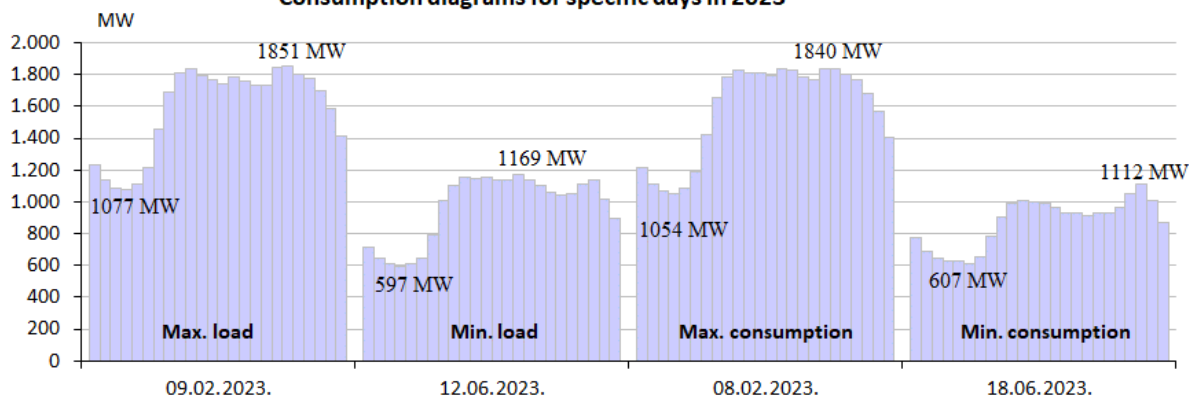
#### Specific values of electricity consumption in 2023

Max hourly consumption			Min hourly consumption			Max daily consumption		Min daily consumption	
MWh	Day	Hour	MWh	Day	Hour	MWh	Day	MWh	Day
1.851	09.02.2023.	19:00	597	12.06.2023.	4:00	37.952	08.02.2023.	20.885	18.06.2023.

#### Minimum and maximum hourly consumption through the months in 2023



#### Consumption diagrams for specific days in 2023



## BALANCE OF ELECTRICITY IN THE TRANSMISSION SYSTEM

	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	2023	2023/2022
	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	%
<b>Electricity generation in the transmission system</b>														
(1) HPP	624	571	780	478	693	536	409	323	237	275	584	686	6.195	141%
(2) TPP	748	567	695	704	562	602	701	835	749	787	682	674	8.306	87%
(3) WPP	37	32	34	34	33	24	19	27	29	27	34	28	357	91%
(4) SPP	0	0	0	0	0	0	0	0	4	5	3	3	14	0%
(5) Generation TOTAL (1+2+3+4)	1.409	1.170	1.508	1.216	1.288	1.161	1.129	1.185	1.020	1.094	1.302	1.390	14.873	104%
(6) Energy received from the distrib. system	21	16	37	34	41	33	14	10	9	7	19	22	263	148%
<b>Electricity import from the neighbouring power systems</b>														
(7) from EES Croatia	195	120	113	125	241	125	196	183	95	200	196	275	2.063	123%
(8) from EES Serbia	79	154	83	114	30	78	83	76	100	95	48	44	984	79%
(9) from EES Montenegro	70	80	66	52	23	63	25	25	73	24	60	49	608	67%
(10) Import TOTAL (7-9)	344	354	263	290	293	265	304	284	267	319	303	369	3.655	95%
(11) AVAILABLE ENERGY (3+4+8)	1.773,2	1.540,5	1.807,8	1.539,5	1.622,4	1.459,5	1.446,2	1.478,5	1.296,6	1.420,0	1.624,9	1.781,1	18.790,0	102%
<b>Takeover of electricity from the transmission system</b>														
(12) Distribution companies	954	881	864	810	728	683	782	781	723	783	878	997	9.864	99%
(13) Directly connected consumers *	86	55	56	44	44	35	48	52	48	47	27	25	567	58%
(14) Power plants own consumption	12	13	10	11	10	10	11	11	8	8	8	9	122	87%
(15) Takeover TOTAL (12+13+14)	1.051	948	931	866	783	729	841	843	779	838	913	1.032	10.553	95%
<b>Electricity Export to the neighbouring power systems</b>														
(16) for EES Croatia	357	318	469	283	209	369	193	181	291	190	268	207	3.336	86%
(17) for EES Serbia	53	31	90	80	191	91	65	62	37	42	91	120	952	148%
(18) for EES Montenegro	275	215	287	277	408	243	318	368	169	323	324	391	3.599	155%
(19) Export TOTAL (16-19)	684	564	846	641	809	703	576	611	497	556	683	717	7.886	115%
(20) Pumping	1	0	0	6	1	0	3	0	0	3	0	0	15	43%
(21) REQUIRED POWER (15+19+20)	1.736,8	1.512,2	1.776,6	1.512,7	1.592,9	1.432,2	1.420,3	1.454,0	1.275,5	1.396,5	1.595,7	1.749,2	18.454,6	103%
<b>Transmission losses</b>														
(22) Transmission losses (11-21)	36	28	31	27	29	27	26	24	21	23	29	32	335	101%
(23) In relation to available power (22)/(11)	2,05%	1,83%	1,73%	1,74%	1,82%	1,87%	1,79%	1,66%	1,63%	1,65%	1,80%	1,79%	1,79%	98%

ELECTRICITY INJECTED IN THE TRANSMISSION SYSTEM

OBJEKAT	I		II		III		IV		V		VI		VII		VIII		IX		X		XI		XII		2023/2022		
	GWh	%	GWh	%	GWh	%	GWh	%	GWh	%	GWh	%	GWh	%	GWh	%	GWh	%	GWh	%	GWh	%	GWh	%	GWh	%	
HPP Jablanica	88		80		108		74		79		62		38		41		40		43		77		102		832		139,27%
HPP Grabovica	32		28		37		26		33		21		13		13		13		15		30		36		298		133,65%
HPP Salakovac	53		37		56		37		59		26		13		13		13		19		59		55		440		142,14%
HPP Višegrad	130		96		159		125		151		136		66		41		33		20		116		151		1,224		143,36%
HPP Trebinje 1	28		56		66		17		53		48		62		41		17		29		18		38		472		157,25%
HPP Trebinje 2	0		0		0		0		0		0		0		0		0		0		0		0		0		0,00%
HPP Dubrovnik (G2)	52		57		69		34		66		57		61		66		6		50		61		75		654		113,61%
HPP Bošac	31		20		37		33		40		34		16		10		8		8		22		27		286		136,92%
HPP Dub	8		9		12		11		11		11		6		4		2		2		7		10		93		161,06%
HPP Rama	36		78		75		37		44		65		54		69		56		50		84		93		740		138,91%
HPP Mostar	28		21		31		22		29		15		9		9		9		13		34		30		253		129,65%
HPP Jajce 1	30		21		35		33		37		33		20		12		9		9		25		32		295		134,40%
HPP Jajce 2	8		7		9		9		10		9		5		3		2		2		7		9		79		103,55%
PSHPP Čapljina	64		45		56		12		46		6		44		2		27		15		21		7		345		230,32%
HPP Peš-Mlini	13		10		13		5		12		7		1		1		0		0		7		9		78		204,15%
HPP Mostarsko Blato	24		6		17		4		22		5		0		0		0		0		0		16		107		176,87%
<b>HYDRO POWER PLANTS</b>	<b>623,6</b>		<b>571,4</b>		<b>779,9</b>		<b>477,6</b>		<b>692,9</b>		<b>535,8</b>		<b>409,0</b>		<b>323,0</b>		<b>237,3</b>		<b>275,0</b>		<b>584,0</b>		<b>685,8</b>		<b>6.195,3</b>		<b>140,86%</b>
TPP Tuzla	136		208		202		179		116		140		147		176		181		184		77		79		1.825		73,79%
TPP Kakanj	150		105		70		121		109		133		198		181		137		154		163		148		1.669		84,23%
TPP Ugljevik	131		122		131		118		33		45		154		154		143		163		146		158		1.499		103,43%
TPP Gacko	130		122		137		134		105		94		99		131		135		136		103		89		1.325		87,87%
TPP Stanari	201		10		155		151		198		190		193		193		153		150		193		200		1.987		93,38%
<b>THERMAL POWER PLANTS</b>	<b>747,9</b>		<b>567,1</b>		<b>694,5</b>		<b>704,3</b>		<b>561,7</b>		<b>601,9</b>		<b>701,2</b>		<b>835,1</b>		<b>749,3</b>		<b>787,1</b>		<b>681,8</b>		<b>673,7</b>		<b>8.305,6</b>		<b>87,06%</b>
WPP Meshovina	16		13		14		14		12		9		8		9		12		13		16		14		151		97,72%
WPP Jelašica	7		8		9		8		10		7		6		8		9		10		10		12		105		91,42%
WPP Podveležje	14		10		10		11		11		7		5		9		8		5		6		5		101		82,75%
<b>WIND POWER PLANTS</b>	<b>37,3</b>		<b>31,6</b>		<b>33,7</b>		<b>33,8</b>		<b>33,2</b>		<b>23,8</b>		<b>18,5</b>		<b>26,7</b>		<b>29,5</b>		<b>27,1</b>		<b>33,6</b>		<b>28,4</b>		<b>357,1</b>		<b>91,20%</b>
SPP Penjik	0		0		0		0		0		0		0		0		4		5		3		3		14		
<b>SOLAR POWER PLANTS</b>	<b>0,0</b>		<b>0,0</b>		<b>0,0</b>		<b>0,0</b>		<b>0,0</b>		<b>0,0</b>		<b>0,0</b>		<b>0,0</b>		<b>4,4</b>		<b>4,9</b>		<b>2,5</b>		<b>2,6</b>		<b>14,4</b>		
<b>GENERATION</b>	<b>1.408,8</b>		<b>1.170,1</b>		<b>1.508,1</b>		<b>1.215,7</b>		<b>1.287,9</b>		<b>1.161,5</b>		<b>1.128,7</b>		<b>1.184,8</b>		<b>1.020,4</b>		<b>1.094,1</b>		<b>1.302,0</b>		<b>1.390,4</b>		<b>14.872,5</b>		<b>103,79%</b>



TAKE OVER FROM THE TRANSMISSION SYSTEM

CATEGORY	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	2023	2023/2022
	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	%
<b>Take over from the transmission sy</b>	<b>1.052,6</b>	<b>948,3</b>	<b>930,5</b>	<b>872,0</b>	<b>784,1</b>	<b>729,1</b>	<b>844,2</b>	<b>843,0</b>	<b>778,8</b>	<b>840,8</b>	<b>912,8</b>	<b>1.031,8</b>	<b>10.568,2</b>	<b>94,81%</b>
Distribution	438	403	397	377	339	318	359	355	334	364	407	462	4.554	101,41%
Direct consumers	56	51	54	43	41	32	44	48	46	46	26	17	504	98,50%
Power Plants - their own consumpti	10	8	8	8	8	8	9	9	6	6	6	8	94	90,60%
<b>EPBH</b>	<b>504,0</b>	<b>462,7</b>	<b>459,3</b>	<b>428,4</b>	<b>387,9</b>	<b>357,9</b>	<b>412,3</b>	<b>412,2</b>	<b>385,9</b>	<b>415,8</b>	<b>439,0</b>	<b>486,7</b>	<b>5.152,0</b>	<b>100,90%</b>
Distribution	383	355	349	324	293	272	310	313	291	314	349	398	3.951	95,69%
Direct consumers	28	2	0	0	0	0	0	0	0	0	0	7	38	8,99%
Power Plants - their own consumpti	1	1	1	1	2	2	1	1	1	0	1	1	13	94,02%
<b>ERS</b>	<b>412,2</b>	<b>357,6</b>	<b>349,9</b>	<b>325,8</b>	<b>294,6</b>	<b>274,2</b>	<b>311,6</b>	<b>314,0</b>	<b>291,5</b>	<b>315,1</b>	<b>350,1</b>	<b>405,8</b>	<b>4.002,3</b>	<b>87,62%</b>
Distribution	132	123	118	109	97	93	113	113	98	105	122	137	1.360	98,67%
Direct consumers	2	1	2	1	3	3	4	3	2	1	1	1	25	64,07%
Power Plants - their own consumpti	1	1	1	1	1	1	1	1	1	1	1	1	8	39,92%
Pumping regime - PHE Čaplina	1	0	0	6	1	0	3	0	0	3	0	0	15	42,84%
<b>EPHZHB</b>	<b>136,5</b>	<b>124,8</b>	<b>120,2</b>	<b>116,9</b>	<b>101,6</b>	<b>97,1</b>	<b>120,3</b>	<b>116,7</b>	<b>101,0</b>	<b>109,2</b>	<b>123,7</b>	<b>139,3</b>	<b>1.407,4</b>	<b>95,64%</b>
Distribution	0	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
Power Plants - their own consumpti	0	3	1	1	1	1	1	1	1	1	1	1	6	418,46%
<b>EFT</b>	<b>0,0</b>	<b>3,3</b>	<b>1,0</b>	<b>1,0</b>	<b>0,0</b>	<b>0,0</b>	<b>0,0</b>	<b>0,0</b>	<b>0,5</b>	<b>0,8</b>	<b>0,0</b>	<b>0,0</b>	<b>6,5</b>	<b>418,46%</b>

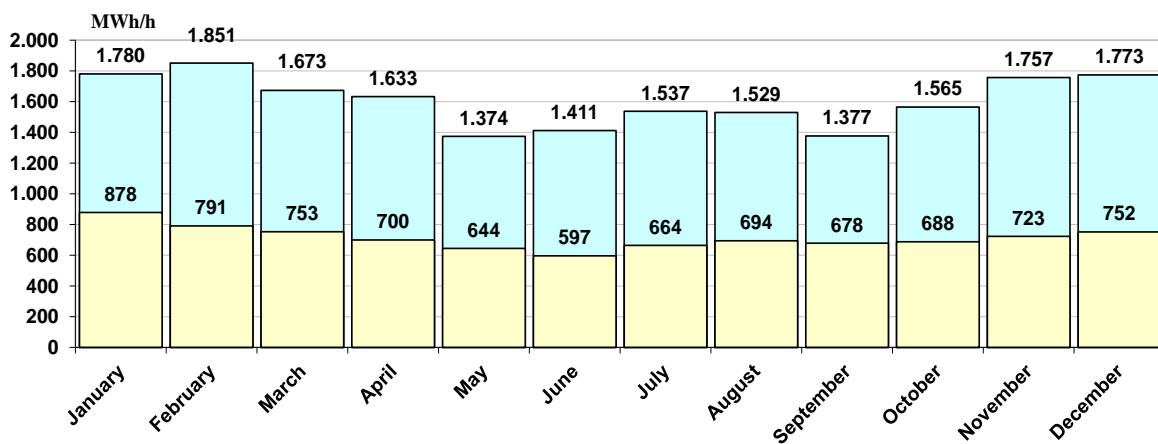
Data on specific hourly and daily consumption in 2023

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	1.780	28.1.2023	14	878	2.1.2023	4	35.876	26.1.2023	29.143	1.1.2023
February	1.851	9.2.2023	19	791	26.2.2023	5	37.952	8.2.2023	28.578	26.2.2023
March	1.673	3.3.2023	10	753	27.3.2023	4	33.698	3.3.2023	24.689	26.3.2023
April	1.633	6.4.2023	21	700	24.4.2023	4	33.172	5.4.2023	23.482	23.4.2023
May	1.374	4.5.2023	21	644	22.5.2023	4	27.501	18.5.2023	21.515	1.5.2023
June	1.411	23.6.2023	15	597	12.6.2023	4	27.167	27.6.2023	20.885	18.6.2023
July	1.537	18.7.2023	15	664	2.7.2023	6	30.113	18.7.2023	22.619	2.7.2023
August	1.529	23.8.2023	15	694	7.8.2023	4	29.654	25.8.2023	23.542	6.8.2023
September	1.377	26.9.2023	20	678	25.9.2023	4	26.765	14.9.2023	23.443	24.9.2023
October	1.565	18.10.2023	20	688	2.10.2023	4	29.954	18.10.2023	23.697	1.10.2023
November	1.757	27.11.2023	18	723	6.11.2023	4	34.582	27.11.2023	26.083	5.11.2023
December	1.773	21.12.2023	18	752	2.12.2023	4	35.194	20.12.2023	27.826	2.12.2023
<b>2023</b>	<b>1.851</b>	<b>9.2.2023</b>	<b>19</b>	<b>597</b>	<b>12.6.2023</b>	<b>4</b>	<b>37.952</b>	<b>8.2.2023</b>	<b>20.885</b>	<b>18.6.2023</b>

Specific values of electricity consumption in 2023

Max hourly consumption			Min hourly consumption			Max daily consumption		Min daily consumption	
MWh	Day	Hour	MWh	Day	Hour	MWh	Day	MWh	Day
1.851	09.02.2023.	19:00	597	12.06.2023.	4:00	37.952	08.02.2023.	20.885	18.06.2023.

Minimum and maximum hourly consumption through the months in 2023



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

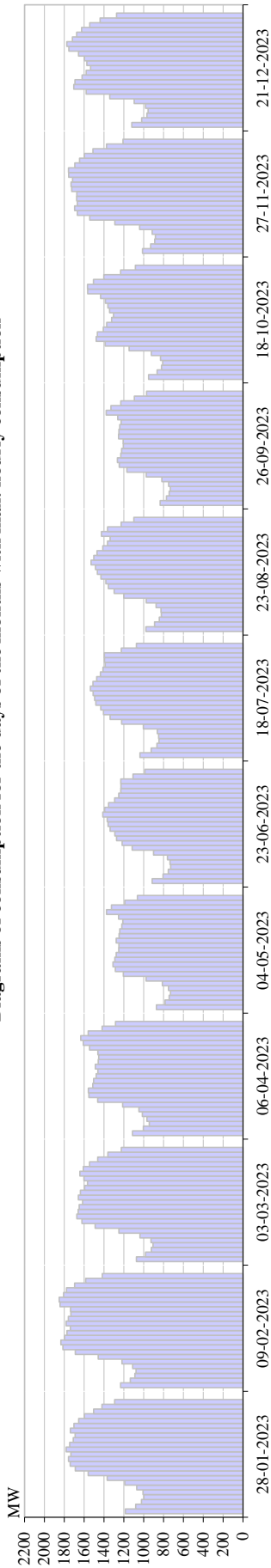


Diagram of consumption for a day in a month with max hourly consumption

	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	1184	1080	1022	998	1006	1069	1190	1367	1558	1688	1739	1756	1733	1780	1745	1708	1690	1738	1702	1654	1596	1503	1420	1293	35,221
February	1232	1134	1089	1077	1111	1219	1458	1688	1814	1833	1796	1771	1738	1781	1758	1733	1736	1842	1851	1806	1778	1694	1583	1416	37,938
March	1073	980	923	906	925	1037	1249	1489	1622	1673	1660	1650	1614	1657	1637	1594	1566	1601	1642	1608	1544	1463	1360	1225	33,698
April	1113	1003	943	967	1014	1048	1211	1463	1552	1556	1512	1503	1478	1461	1487	1458	1452	1460	1545	1609	1633	1558	1419	1284	32,729
May	872	784	743	729	751	812	976	1205	1286	1308	1290	1276	1250	1248	1276	1247	1241	1221	1210	1252	1374	1324	1189	1062	26,926
June	914	806	752	727	735	760	901	1116	1217	1273	1291	1337	1359	1366	1411	1393	1353	1292	1251	1230	1229	1230	1108	987	27,038
July	1037	924	867	846	848	863	1003	1222	1338	1405	1432	1481	1494	1508	1537	1511	1473	1436	1410	1387	1394	1397	1225	1073	30,113
August	977	890	843	823	825	875	974	1199	1298	1354	1380	1430	1466	1485	1529	1502	1469	1411	1364	1338	1425	1364	1227	1099	29,545
September	835	770	743	731	748	817	974	1168	1246	1264	1231	1222	1204	1206	1252	1249	1241	1226	1261	1377	1329	1230	1093	970	26,390
October	949	865	820	809	830	922	1147	1387	1477	1467	1407	1372	1323	1304	1342	1361	1386	1433	1564	1565	1505	1401	1231	1084	29,954
November	1012	930	888	881	914	1041	1290	1543	1668	1695	1667	1675	1672	1724	1730	1715	1755	1757	1693	1645	1596	1510	1375	1208	34,582
December	1120	1020	967	955	980	1095	1341	1579	1703	1692	1620	1579	1535	1573	1596	1656	1752	1773	1717	1675	1626	1542	1438	1273	34,809

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

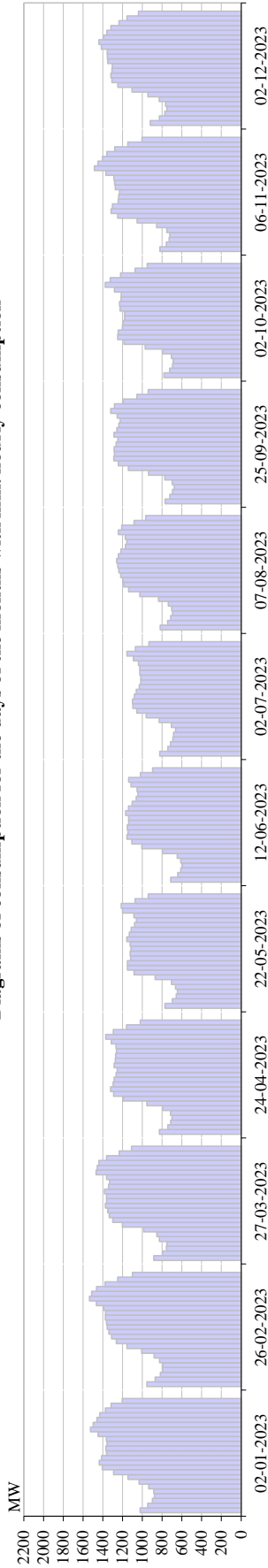


Diagram of consumption for a day in a month with min hourly consumption

	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
<b>January</b>	1023	945	898	878	884	935	1033	1145	1290	1405	1435	1413	1363	1370	1357	1364	1449	1526	1497	1460	1431	1374	1317	1203	29,996
<b>February</b>	955	870	818	795	791	825	880	1007	1156	1264	1312	1339	1357	1363	1375	1373	1393	1465	1535	1513	1463	1378	1250	1102	28,578
<b>March</b>	884	794	755	753	827	854	986	1202	1299	1356	1350	1375	1362	1362	1383	1342	1333	1363	1469	1457	1440	1363	1235	1109	28,634
<b>April</b>	828	742	713	700	714	793	954	1191	1291	1321	1296	1286	1266	1255	1286	1274	1271	1262	1266	1315	1372	1295	1161	1021	26,872
<b>May</b>	772	697	657	644	664	705	870	1083	1152	1151	1118	1123	1115	1124	1157	1132	1113	1079	1061	1086	1200	1215	1074	940	23,934
<b>June</b>	714	642	611	597	612	646	794	1006	1106	1156	1146	1152	1139	1138	1169	1141	1104	1062	1045	1054	1114	1139	1019	896	23,203
<b>July</b>	829	742	715	691	684	664	707	829	961	1057	1096	1100	1081	1061	1031	1016	1015	1026	1026	1041	1091	1156	1071	934	22,619
<b>August</b>	814	745	713	694	703	737	837	1026	1139	1188	1196	1219	1237	1249	1261	1243	1218	1171	1158	1172	1244	1210	1083	966	25,227
<b>September</b>	770	721	695	678	698	773	937	1143	1243	1289	1282	1286	1265	1248	1287	1259	1239	1224	1256	1320	1282	1193	1056	941	26,084
<b>October</b>	782	723	695	688	707	795	972	1188	1250	1245	1202	1194	1180	1180	1225	1231	1215	1214	1283	1377	1326	1221	1075	951	25,919
<b>November</b>	822	758	728	723	753	855	1053	1249	1317	1303	1245	1240	1231	1275	1281	1287	1370	1486	1450	1404	1360	1279	1147	1004	27,621
<b>December</b>	920	829	773	752	765	830	945	1105	1248	1308	1319	1309	1304	1350	1354	1356	1416	1440	1394	1360	1319	1256	1156	1040	27,826

Diagrams of consumption on a 3rd Wednesday in each month

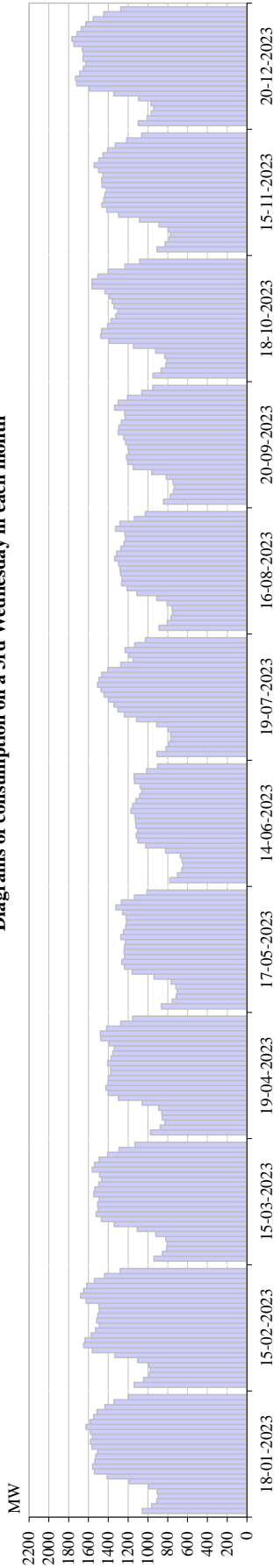


Diagram of consumption on the third Wednesday in a month

	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		
<b>January</b>	1056	962	910	896	906	993	1190	1412	1540	1558	1536	1526	1507	1565	1579	1560	1581	1625	1584	1548	1513	1434	1438	1438	1438	32,521	
<b>February</b>	1139	1045	987	974	988	1102	1331	1562	1649	1635	1574	1530	1490	1516	1505	1490	1495	1623	1680	1651	1618	1540	1438	1438	1438	33,841	
<b>March</b>	939	854	813	805	820	921	1108	1341	1469	1523	1504	1508	1494	1546	1536	1495	1468	1488	1561	1537	1491	1406	1291	1131	1131	31,050	
<b>April</b>	974	876	828	855	858	892	1057	1298	1400	1424	1401	1398	1376	1374	1407	1371	1354	1339	1391	1475	1481	1417	1274	1153	1153	29,674	
<b>May</b>	864	754	715	702	718	766	939	1158	1237	1263	1236	1239	1236	1227	1274	1247	1225	1215	1220	1256	1323	1267	1137	1008	1008	26,226	
<b>June</b>	780	701	658	645	654	674	821	1022	1101	1118	1102	1122	1125	1132	1171	1154	1122	1082	1061	1077	1134	1139	1015	903	903	23,516	
<b>July</b>	911	817	791	769	771	794	910	1114	1237	1303	1342	1398	1443	1473	1509	1493	1466	1404	1275	1150	1193	1230	1134	1026	1026	27,955	
<b>August</b>	888	804	768	751	757	807	911	1111	1209	1265	1261	1276	1283	1296	1334	1315	1274	1241	1224	1232	1327	1282	1136	1026	1026	26,780	
<b>September</b>	842	774	744	734	747	815	961	1149	1205	1217	1187	1201	1225	1243	1300	1293	1267	1230	1235	1337	1299	1206	1062	952	952	26,227	
<b>October</b>	949	865	820	809	830	922	1147	1387	1477	1467	1407	1372	1323	1304	1342	1361	1386	1433	1564	1565	1505	1401	1231	1084	1084	29,954	
<b>November</b>	908	827	786	773	792	888	1085	1296	1415	1463	1446	1434	1419	1462	1466	1452	1497	1542	1495	1495	1453	1407	1329	1215	1063	1063	29,915
<b>December</b>	1098	1007	966	940	969	1095	1344	1591	1718	1729	1688	1654	1628	1656	1650	1661	1748	1767	1715	1673	1626	1552	1445	1274	1274	35,194	

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

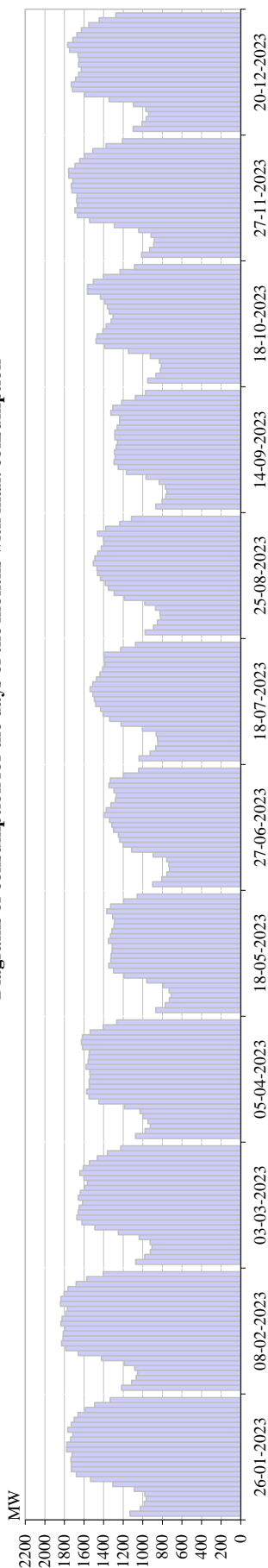


Diagram of consumption for a day in a month with max. consumption

	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
<b>January</b>	1131	1025	985	964	980	1086	1306	1533	1679	1730	1729	1734	1721	1777	1777	1736	1714	1766	1730	1701	1661	1585	1492	1332	35.876
<b>February</b>	1216	1114	1068	1054	1082	1188	1423	1657	1787	1830	1814	1813	1794	1836	1824	1787	1769	1840	1835	1803	1764	1680	1572	1403	37.952
<b>March</b>	1073	980	923	906	925	1037	1249	1489	1622	1673	1660	1650	1614	1657	1637	1594	1566	1601	1642	1608	1544	1463	1360	1225	33.698
<b>April</b>	1074	976	924	946	996	1028	1187	1446	1550	1573	1547	1549	1537	1541	1578	1558	1550	1545	1615	1627	1617	1538	1403	1266	33.172
<b>May</b>	866	770	729	711	731	793	959	1192	1297	1348	1326	1324	1312	1310	1351	1331	1315	1294	1288	1307	1368	1328	1193	1058	27.501
<b>June</b>	899	804	753	727	733	755	895	1113	1201	1235	1250	1299	1314	1340	1398	1372	1324	1280	1269	1294	1345	1331	1195	1041	27.167
<b>July</b>	1037	924	867	846	848	863	1003	1222	1338	1405	1432	1481	1494	1508	1537	1511	1473	1436	1410	1387	1394	1397	1225	1073	30.113
<b>August</b>	976	890	850	818	824	870	980	1188	1293	1350	1383	1433	1462	1467	1506	1489	1460	1425	1396	1403	1462	1379	1236	1116	29.654
<b>September</b>	866	802	765	752	769	833	967	1167	1251	1294	1282	1289	1272	1257	1286	1286	1261	1236	1236	1326	1306	1214	1076	971	26.765
<b>October</b>	949	865	820	809	830	922	1147	1387	1477	1467	1407	1372	1323	1304	1342	1361	1386	1433	1564	1565	1505	1401	1231	1084	29.954
<b>November</b>	1012	930	888	881	914	1041	1290	1543	1668	1695	1667	1675	1672	1724	1730	1715	1755	1757	1693	1645	1596	1510	1375	1208	34.582
<b>December</b>	1098	1007	966	940	969	1095	1344	1591	1718	1729	1688	1654	1628	1656	1650	1661	1748	1767	1715	1673	1626	1552	1445	1274	35.194

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

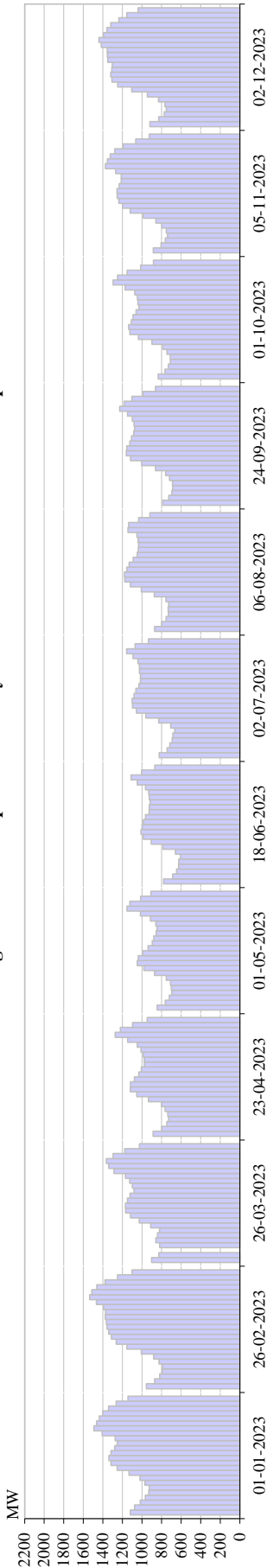


Diagram of consumption for a day in a month with min. consumption

	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
<b>January</b>	1120	1076	1017	966	930	926	971	1021	1133	1253	1318	1338	1318	1279	1253	1275	1407	1491	1464	1437	1402	1341	1263	1144	29,143
<b>February</b>	955	870	818	795	791	825	880	1007	1156	1264	1312	1339	1357	1363	1375	1373	1393	1465	1535	1513	1463	1378	1250	1102	28,578
<b>March</b>	901	828	747	727	735	763	802	934	1053	1120	1117	1168	1149	1122	1082	1098	1126	1169	1287	1339	1364	1294	1177	1025	24,689
<b>April</b>	886	799	747	727	735	763	802	934	1053	1120	1117	1168	1149	1122	1082	1098	1126	1169	1287	1339	1364	1294	1177	1025	24,689
<b>May</b>	845	762	720	695	700	709	752	872	982	1048	1037	991	938	895	879	855	847	859	913	1015	1153	1125	1014	908	21,515
<b>June</b>	778	686	647	626	624	607	658	786	905	986	1010	999	986	963	927	926	917	926	932	964	1048	1112	1004	868	20,885
<b>July</b>	824	742	715	691	684	664	707	829	961	1057	1096	1100	1081	1061	1031	1016	1015	1026	1026	1041	1091	1156	1071	934	22,619
<b>August</b>	870	797	753	731	732	728	755	874	1007	1118	1177	1179	1156	1131	1090	1048	1039	1035	1039	1053	1143	1136	1034	919	23,542
<b>September</b>	788	726	695	687	687	687	719	758	862	1003	1117	1154	1124	1107	1084	1075	1082	1099	1149	1227	1183	1103	989	862	23,443
<b>October</b>	835	766	731	710	711	744	788	898	1036	1125	1136	1108	1092	1060	1032	1041	1047	1073	1172	1295	1249	1151	1014	883	23,697
<b>November</b>	884	805	762	739	751	796	859	986	1122	1198	1236	1253	1255	1233	1212	1213	1269	1375	1353	1325	1277	1191	1064	926	26,083
<b>December</b>	920	829	773	752	765	830	945	1105	1248	1308	1319	1309	1304	1350	1354	1356	1416	1440	1394	1360	1319	1236	1156	1040	27,826

## NOMINATED EXCHANGE PROGRAMME WITH NEIGHBOURING EES

NOMINATED EXCHANGE	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	2023
	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh
BiH ↔ CRO (HEP-OPS)	188,8	158,2	59,5	147,7	134,3	86,2	206,7	202,7	138,8	235,5	195,3	254,7	2.008,4
BiH ↔ SR (EMS)	112,9	166,0	144,0	154,0	74,0	94,0	176,5	156,4	131,4	139,4	103,7	81,9	1.534,1
BiH ↔ MG (EPCG)	69,7	73,8	70,5	35,7	37,8	54,4	37,4	34,9	60,2	25,7	65,7	44,1	610,0
<b>(1) Received BiH</b>	<b>371,3</b>	<b>398,1</b>	<b>274,0</b>	<b>337,4</b>	<b>246,1</b>	<b>234,7</b>	<b>420,6</b>	<b>394,0</b>	<b>330,4</b>	<b>400,6</b>	<b>364,6</b>	<b>380,7</b>	<b>4.152,5</b>
BiH → CRO (HEP-OPS)	215,1	217,9	313,2	205,8	259,9	238,3	147,1	194,1	170,2	140,4	210,6	176,7	2.489,4
BiH → SR (EMS)	289,3	207,2	277,4	185,7	214,0	254,9	223,7	213,3	179,8	201,7	294,5	268,5	2.810,1
BiH → MG (EPCG)	210,2	184,4	266,2	295,2	285,0	178,4	320,6	314,5	210,4	298,9	239,1	281,1	3.084,1
<b>(2) Delivered BiH</b>	<b>714,7</b>	<b>609,5</b>	<b>856,8</b>	<b>686,8</b>	<b>758,9</b>	<b>671,6</b>	<b>691,4</b>	<b>722,0</b>	<b>560,4</b>	<b>641,1</b>	<b>744,2</b>	<b>726,4</b>	<b>8.383,6</b>
<b>(3) Balance BiH (2) - (1)</b>	<b>343,4</b>	<b>211,4</b>	<b>582,7</b>	<b>349,4</b>	<b>512,8</b>	<b>437,0</b>	<b>270,8</b>	<b>328,0</b>	<b>230,0</b>	<b>240,5</b>	<b>379,6</b>	<b>345,6</b>	<b>4.231,1</b>
<b>Balance CRO (HEP-OPS)</b>	<b>26,3</b>	<b>59,7</b>	<b>253,7</b>	<b>58,2</b>	<b>125,6</b>	<b>152,1</b>	<b>-59,6</b>	<b>-8,6</b>	<b>31,3</b>	<b>-95,1</b>	<b>15,3</b>	<b>-78,0</b>	<b>481,1</b>
<b>Balance SR (EMS)</b>	<b>176,5</b>	<b>41,1</b>	<b>133,4</b>	<b>31,8</b>	<b>140,0</b>	<b>160,9</b>	<b>47,2</b>	<b>56,9</b>	<b>48,4</b>	<b>62,4</b>	<b>190,8</b>	<b>186,6</b>	<b>1.276,0</b>
<b>Balance MG (EPCG)</b>	<b>140,6</b>	<b>110,6</b>	<b>195,7</b>	<b>259,5</b>	<b>247,2</b>	<b>124,0</b>	<b>283,2</b>	<b>279,6</b>	<b>150,2</b>	<b>273,2</b>	<b>173,4</b>	<b>237,0</b>	<b>2.474,1</b>
<b>Transit</b>	<b>269,6</b>	<b>292,0</b>	<b>224,9</b>	<b>265,1</b>	<b>191,4</b>	<b>208,5</b>	<b>312,9</b>	<b>301,3</b>	<b>266,3</b>	<b>334,8</b>	<b>297,0</b>	<b>271,5</b>	<b>3.235,2</b>

## PHYSICAL EXCHANGE OF BiH WITH NEIGHBOURING EES IN THE TRANSMISSION SYSTEM

PHYSICAL FLOWS	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	2023
	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh
BiH ↔ CRO (HOPS)	194,6	120,3	113,4	124,6	240,9	125,2	195,9	183,2	94,6	199,6	196,3	274,9	2.063,2
BiH ↔ SR (EMS)	79,4	153,9	83,4	113,7	29,6	77,7	83,2	75,7	100,1	94,9	47,6	44,4	983,7
BiH ↔ MG (EPCG)	69,9	79,8	66,0	51,9	22,7	62,6	24,6	24,7	72,7	24,2	59,6	49,3	608,0
<b>(1) Received BiH</b>	<b>343,9</b>	<b>353,9</b>	<b>262,8</b>	<b>290,2</b>	<b>293,3</b>	<b>265,4</b>	<b>303,7</b>	<b>283,6</b>	<b>267,3</b>	<b>318,7</b>	<b>303,5</b>	<b>368,6</b>	<b>3.655,0</b>
BiH → CRO (HOPS)	356,5	318,1	469,4	283,4	209,4	369,0	193,2	180,7	290,7	190,3	268,3	206,6	3.335,6
BiH → SR (EMS)	53,0	31,0	89,7	80,1	191,0	90,6	65,0	62,0	37,4	42,2	90,6	119,5	952,1
BiH → MG (EPCG)	274,6	214,8	287,0	277,2	408,4	243,5	318,0	368,4	168,5	323,1	324,0	391,3	3.598,7
<b>(2) Delivered BiH</b>	<b>684,1</b>	<b>563,9</b>	<b>846,0</b>	<b>640,6</b>	<b>808,8</b>	<b>703,1</b>	<b>576,1</b>	<b>611,0</b>	<b>496,6</b>	<b>555,7</b>	<b>682,9</b>	<b>717,4</b>	<b>7.886,4</b>
<b>(3) Balance BiH (2) - (1)</b>	<b>340,3</b>	<b>210,0</b>	<b>583,2</b>	<b>350,4</b>	<b>515,5</b>	<b>437,7</b>	<b>272,4</b>	<b>327,5</b>	<b>229,3</b>	<b>237,0</b>	<b>379,4</b>	<b>348,8</b>	<b>4.231,4</b>
<b>Balance CRO (HOPS)</b>	<b>162,0</b>	<b>197,9</b>	<b>356,0</b>	<b>158,8</b>	<b>-31,5</b>	<b>243,9</b>	<b>-2,7</b>	<b>-2,5</b>	<b>196,1</b>	<b>-9,3</b>	<b>72,1</b>	<b>-68,3</b>	<b>1.272,4</b>
<b>BALANCE SR (EMS)</b>	<b>-26,4</b>	<b>-122,8</b>	<b>6,2</b>	<b>-33,6</b>	<b>161,4</b>	<b>12,9</b>	<b>-18,2</b>	<b>-13,7</b>	<b>-62,7</b>	<b>-52,6</b>	<b>42,9</b>	<b>75,1</b>	<b>-31,6</b>
<b>BALANCE MG (EPCG)</b>	<b>204,7</b>	<b>135,0</b>	<b>221,0</b>	<b>225,2</b>	<b>385,7</b>	<b>180,9</b>	<b>293,3</b>	<b>343,7</b>	<b>95,9</b>	<b>298,9</b>	<b>264,4</b>	<b>342,0</b>	<b>2.990,7</b>

## Deviations of EES BiH towards the Interconnection in 2023

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	-65	-13	-6.085	74	10	2.778	74	-4	-3.307
February	-54	-9	-3.466	138	7	1.988	138	-2	-1.479
March	-89	-9	-3.330	43	11	4.143	-89	1	812
April	-58	-7	-2.385	110	10	3.839	110	2	1.453
May	-163	-8	-2.244	86	11	5.302	-163	4	3.058
June	-101	-8	-2.817	58	11	3.734	-101	1	917
July	-31	-6	-1.911	59	9	3.767	59	2	1.856
August	-64	-8	-3.121	64	7	2.611	64	-1	-510
September	-85	-9	-3.342	76	8	2.882	-85	-1	-459
October	-92	-11	-5.355	48	7	1.755	-92	-5	-3.600
November	-90	-9	-3.461	50	10	3.284	-90	0	-176
December	-62	-8	-2.447	49	13	5.620	-62	4	3.173
<b>2023</b>	<b>-163</b>	<b>-9</b>	<b>-39.964</b>	<b>138</b>	<b>10</b>	<b>41.704</b>	<b>-163</b>	<b>0</b>	<b>1.738</b>