



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 2021**

Sarajevo, February 2022

This Report presents power flows in the transmission system in BiH in 2021. 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 19 615 GWh of electricity was available on the transmission network of BiH in 2021. Total of 16 158 GWh was produced in the transmission system and another 199 GWh of electricity was injected from the distribution system. From the neighbouring systems it was received 3 259 GWh of electricity.

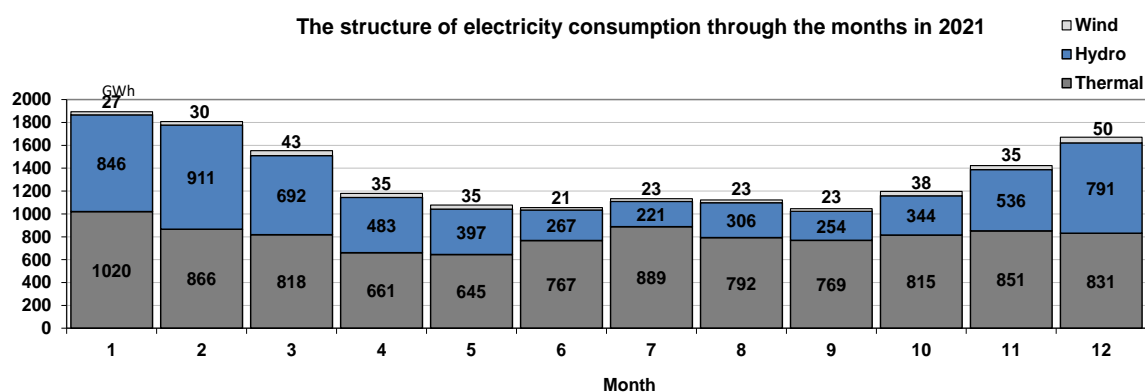
Out of totally available electricity on transmission network, distribution companies took over 9 964 GWh, customers directly connected to the transmission system took over 1 014 GWh, neighbouring systems were delivered 8 014 GWh, while transmission losses amounted to 369 GWh, which makes 1,88 % of totally available electricity on transmission network. In 2021, PSHP Čapljina in pumping regime took over 144 GWh.

In 2021 takeover of electricity from the transmission system in BiH was increased by 6% compared to 2020.

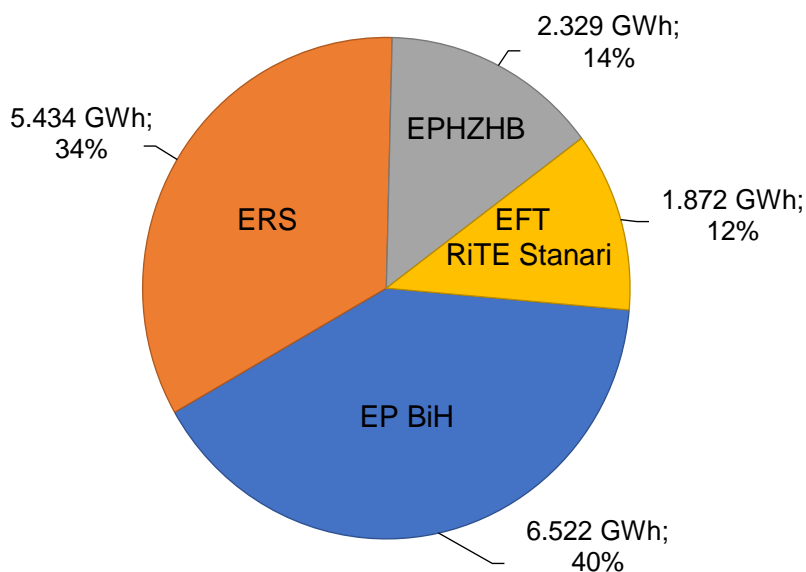
### Electricity generation in the transmission system

Out of totally produced 16 158 GWh of electricity in the transmission system in 2021, Hydro Power Plants produced 6 051 GWh, i.e. 38% of electricity, and Thermal Power Plants produced 9 724 GWh, i.e. 60% of electricity. Wind Power Plants generated 383 GWh i.e. 2% of electricity. In 2021 Thermal Power Plants generation is 6.2% lower and Hydro Power Plants generation is 43.8% higher, while Wind Power Plants generated 46% more electricity than in 2020.

The following diagrams show the structure of electricity generation over 12 months in 2021 and generation companies' share in total amount of electricity generation in BiH.



### Companies' shares in the electricity generation

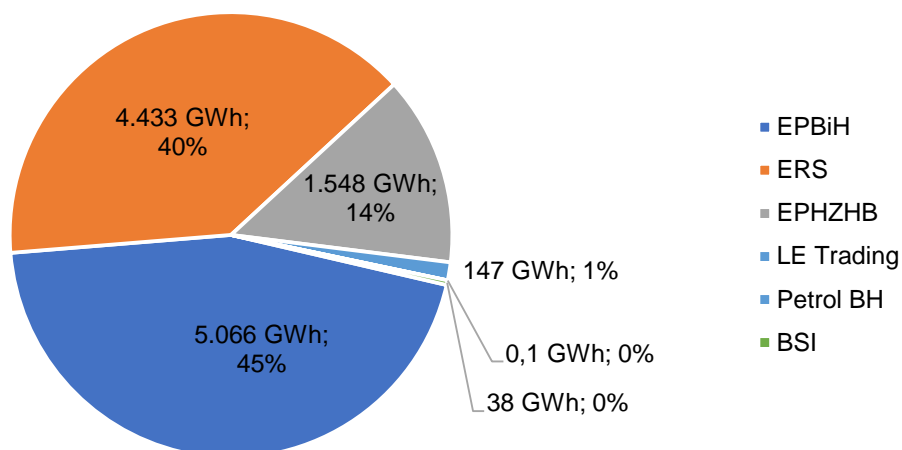


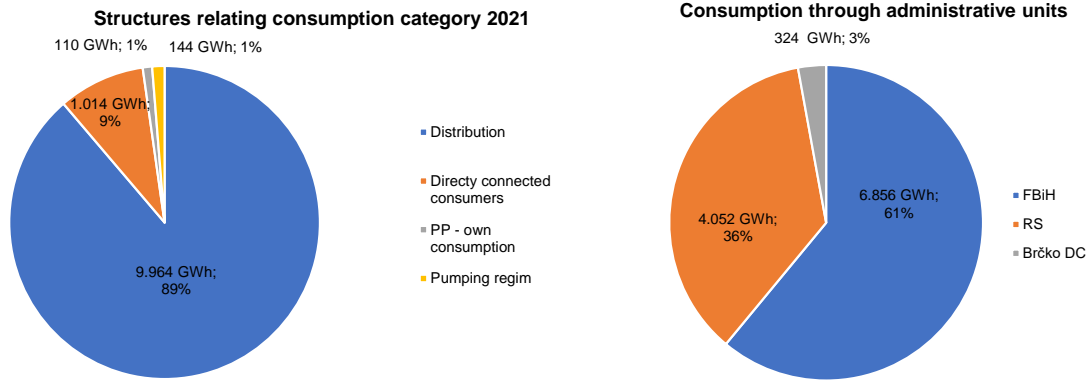
### Electricity consumption in the transmission system

Electricity consumption in the transmission system of BiH in 2021 amounted to 11 232 GWh and was 5.83% higher than in 2020. Consumption of PSHHP Čapljina in pumping regime amounted to 144 GWh in 2021. Distribution companies took over 9 964 GWh from the transmission system, and users directly connected to the transmission system took over 1 014 GWh of electricity. The power plants' own consumption in 2021 amounted to 110 GWh.

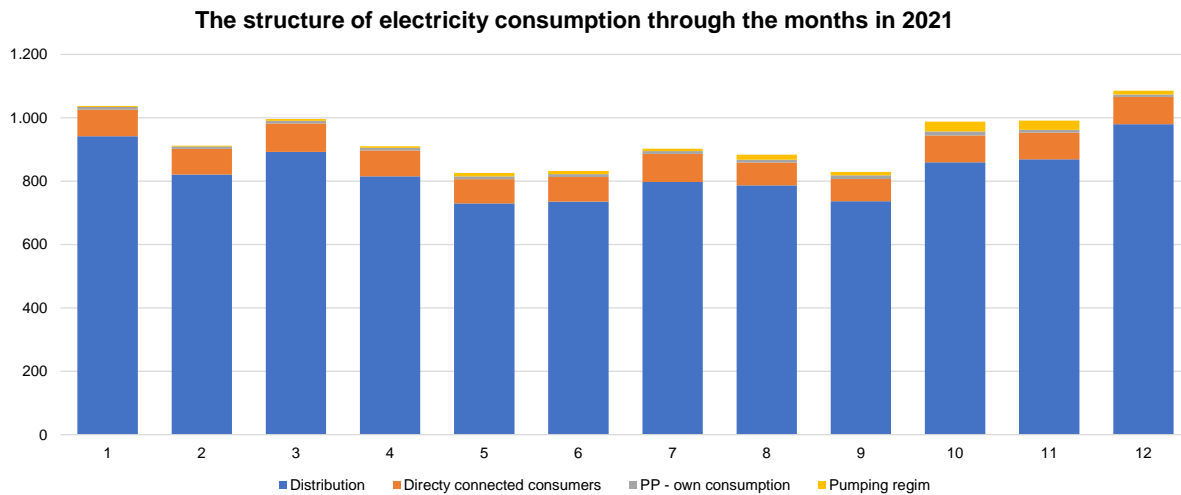
The following diagrams show the consumption of balance responsible parties and the consumption structure in terms of consumption categories and administrative units in BiH.

### BRP's electricity takeover from the BiH transmission system in 2021





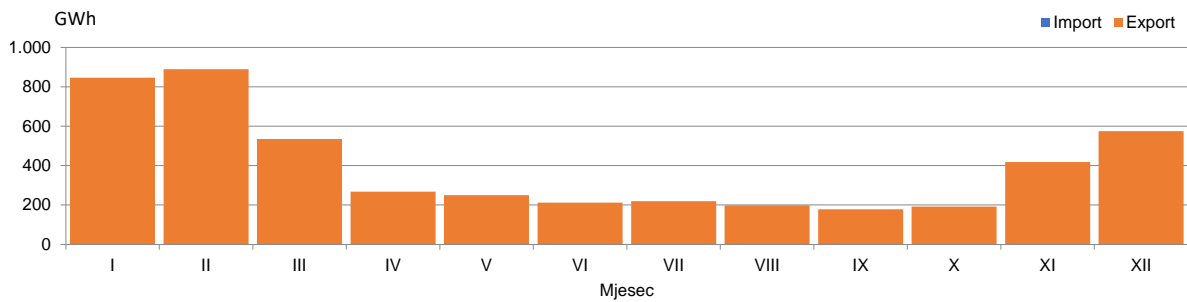
The highest monthly consumption in amount of 1 085 GWh in the transmission system in BiH was recorded in December. The lowest monthly consumption was in May amounting to 826 GWh of electricity. The following diagram shows monthly consumption in the transmission system in BiH.



### Nominated power exchange with neighbouring systems

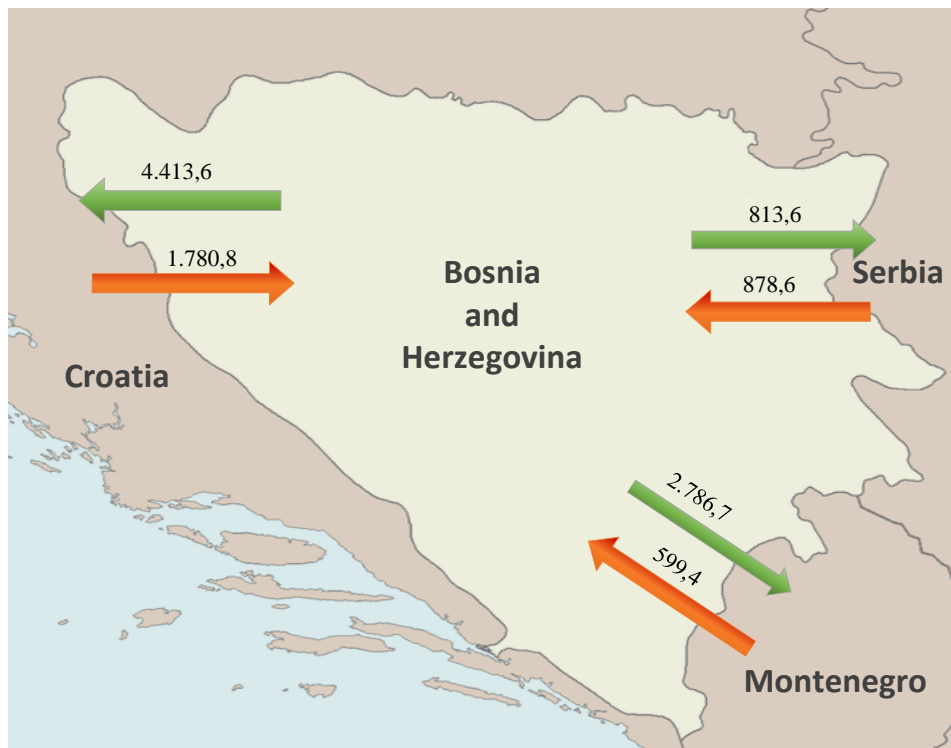
According to nominated exchange programmes, in the year 2021, 5 032 GWh of electricity was imported in BiH power system, and 9 814 GWh of electricity was exported from BiH power system. In 2021, out of the above given amount 3 640 GWh of electricity was transited over BiH transmission network. The balance amount of 4 782 GWh of exported energy indicates that electricity export was 18% higher than in 2020.

Balance of nominated exchange in BiH in 2021



### Crossborder power flows

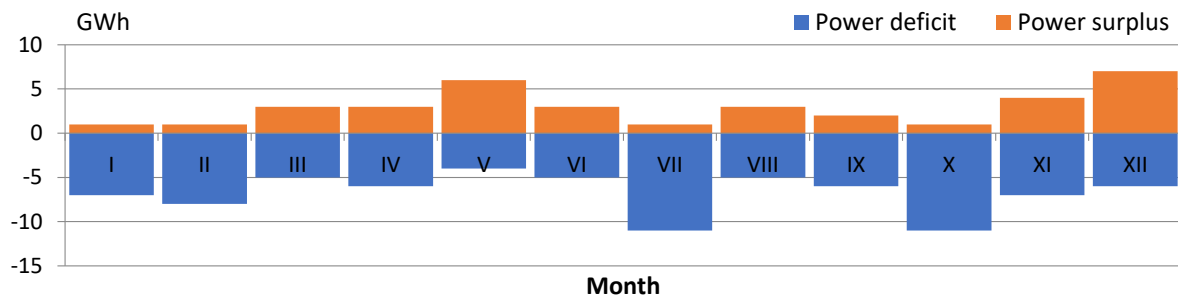
Actual physical power flows on interconnection lines in 2021 resulted with the balance of exchanged electricity of BiH Control Area in amount of 4 755 GWh in direction of export. From neighbouring systems 3 259 GWh was injected in BiH transmission system and in other systems 8 013 GWh of electricity was delivered. Power flows on the borders with neighbouring systems were such that in 2021 on the border with Serbia 65 GWh was injected in BiH transmission system, while on the border with Croatia 2 633 GWh of electricity was delivered, and on the border with Montenegro 2 187 GWh of electricity was delivered.



### Deviations from nominated exchange programmes

Unintentional deviations from nominated exchange programmes in 2021 were 80 GWh in total for the hours with deficit registered, i.e. the total of 35 GWh for the hours with energy surplus registered in BiH Control Area. Maximum hourly electricity deficit in amount of 742 MWh/h was registered in January, and electricity surplus of 118 MWh/h was registered in February 2021.

### Monthly deviations of ees BiH toward the interconnection 2021



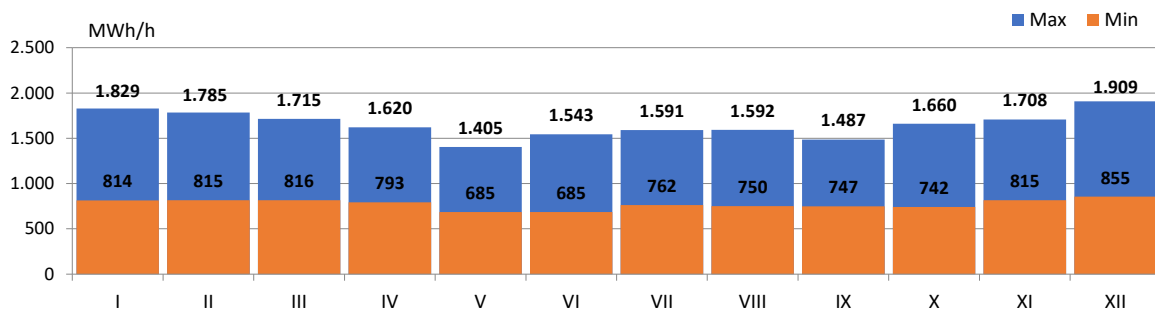
### Specific values of hourly and daily consumption

Maximum hourly load in 2021 in amount of 1 909 MWh/h was realized on 23<sup>rd</sup> December 2021 in the 18<sup>th</sup> hour. Maximum daily consumption in amount of 38 444 MWh of electricity was realized on 23<sup>rd</sup> December. Minimum hourly consumption in amount of 685 MWh was registered on 7<sup>th</sup> June 2021 in the 4<sup>th</sup> hour, and minimum daily consumption of electricity in amount of 22 781 MWh was registered on 2<sup>nd</sup> May.

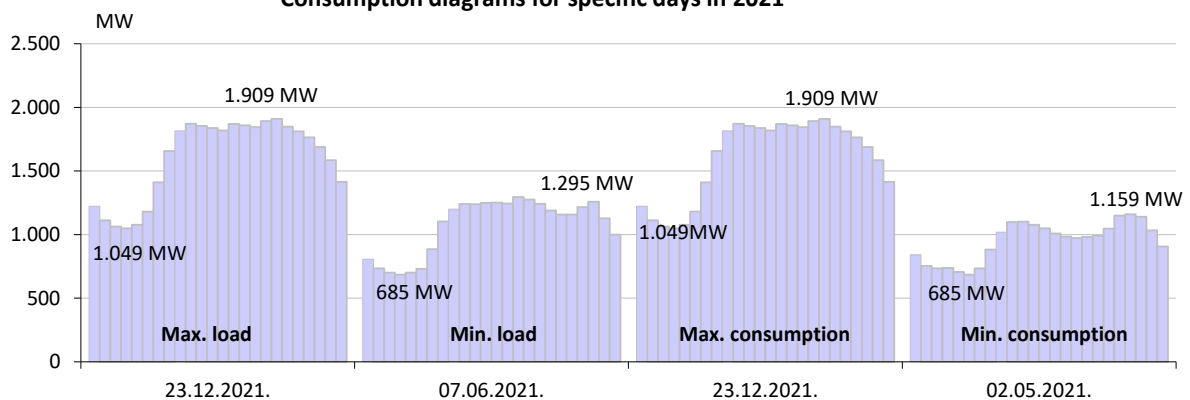
Specific values of electricity consumption in 2021

Max hourly consumption			Min hourly consumption			Max daily consumption		Min daily consumption	
MWh	Day	Hour	MWh	Day	Hour	MWh	Day	MWh	Day
1.909	23.12.2021.	18:00	685	07.06.2021.	4:00	38.444	23.12.2021.	22.781	02.05.2021.

Minimum and maximum hourly consumption through the months in 2021



Consumption diagrams for specific days in 2021



## BALANCE OF ELECTRICITY IN THE TRANSMISSION SYSTEM

	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	2021	2021/2020
	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	%
<b>Electricity generation in the transmission system</b>														
(1) HPP	846	911	692	483	397	267	221	306	254	344	536	791	6,051	144%
(2) TPP	1,020	866	818	661	645	767	889	792	769	815	851	831	9,724	94%
(3) WPP	27	30	43	35	35	21	23	23	23	38	35	50	383	146%
(4) Generation TOTAL (1+2+3)	1,893	1,807	1,553	1,180	1,077	1,055	1,133	1,121	1,046	1,197	1,423	1,671	16,158	109%
(5) Energy received from the distrib. system	25	28	15	26	28	9	5	4	3	6	18	32	199	173%
<b>Electricity import from the neighbouring power systems</b>														
(6) from EES Croatia	97	87	120	138	159	132	186	245	120	198	152	147	1,781	69%
(7) from EES Serbia	37	34	85	108	105	55	69	59	148	96	31	50	879	167%
(8) from EES Montenegro	70	52	55	74	75	51	51	20	47	25	23	57	599	418%
(9) Import TOTAL (6..8)	204	173	260	320	339	238	307	324	315	319	206	254	3,259	100%
(10) AVAILABLE ENERGY (3+4+8)	2,122.7	2,007.9	1,827.7	1,525.5	1,444.6	1,301.7	1,444.9	1,449.0	1,364.6	1,521.8	1,647.2	1,957.3	19,614.9	108%
<b>Takeover of electricity from the transmission system</b>														
(11) Distribution companies	942	821	892	815	730	735	797	787	736	859	869	980	9,964	104%
(12) Directly connected consumers *	84	81	90	81	76	78	89	91	89	85	84	86	1,014	136%
(13) Power plants own consumption	8	7	9	8	9	9	9	9	12	13	9	8	110	97%
(14) Takeover TOTAL (11+12+13)	1,034	909	991	905	815	822	895	887	837	957	962	1,073	11,088	106%
<b>Electricity Export to the neighbouring power systems</b>														
(15) for EES Croatia	688	657	445	370	359	226	253	145	341	216	245	468	4,414	235%
(16) for EES Serbia	116	107	41	35	62	62	52	81	19	44	87	107	814	59%
(17) for EES Montenegro	241	297	314	183	173	158	211	294	130	244	289	253	2,787	69%
(18) Export TOTAL (15..18)	1,045	1,060	800	588	594	446	516	520	490	504	622	829	8,014	110%
(19) Pumping	3	3	6	5	10	10	8	16	11	31	29	12	144	128%
(20) REQUIRED POWER (14+18+19)	2,082.3	1,972.4	1,795.9	1,497.7	1,419.8	1,278.2	1,418.0	1,423.1	1,338.4	1,492.6	1,612.8	1,914.3	19,245.7	108%
<b>Transmission losses</b>														
(21) Transmission losses (10-20)	40	35	32	28	25	23	27	26	26	29	34	43	369	116%
(22) In relation to available power (21)/(10)	1,90%	1,77%	1,74%	1,82%	1,71%	1,80%	1,86%	1,79%	1,93%	1,92%	2,09%	2,20%	1,88%	108%

## ELECTRICITY INJECTED IN THE TRANSMISSION SYSTEM

OBJECT	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	2021	2021/2020
	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	%
HPP Jablanica	110	103	93	65	59	40	32	42	39	61	98	118	860	154,18%
HPP Grabovica	42	47	31	24	22	14	11	14	14	23	39	50	331	161,54%
HPP Salakovac	66	71	39	32	35	18	10	13	12	30	69	83	479	180,43%
HPP Višegrad	175	163	120	137	152	81	51	39	27	29	67	132	1.174	165,62%
HPP Trebinje 1	32	83	74	32	24	19	26	42	32	24	18	33	439	134,57%
HPP Trebinje 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0,00%
HPP Dubrovnik (GZ)	72	71	70	2	0	0	0	0	2	52	35	71	374	91,27%
HPP Bočac	40	36	22	23	24	13	10	7	6	10	24	47	260	140,47%
HPP Dub	10	10	10	11	7	4	2	2	1	2	8	11	78	192,54%
HPP Rama	79	76	108	64	2	38	48	68	62	55	50	39	689	118,19%
HPP Mostar	35	33	22	20	22	12	8	9	9	18	33	37	261	150,27%
HPP Jajce 1	37	34	24	25	25	14	10	7	5	11	26	41	257	142,42%
HPP Jajce 2	10	9	8	8	8	6	5	4	3	5	7	10	82	129,29%
PSHPP Čapljina	84	128	59	34	12	8	7	60	41	24	38	61	555	134,42%
HPP Peć-Mlinci	19	18	8	4	3	1	0	0	0	0	5	16	74	183,62%
HPP Mostarsko Blato	35	30	4	3	3	0	0	0	0	1	19	41	137	251,58%
<b>HYDRO POWER PLANTS</b>	<b>846,3</b>	<b>911,4</b>	<b>692,0</b>	<b>483,1</b>	<b>397,0</b>	<b>267,1</b>	<b>221,3</b>	<b>306,4</b>	<b>254,1</b>	<b>344,1</b>	<b>536,4</b>	<b>791,3</b>	<b>6.050,5</b>	<b>143,81%</b>
TPP Tuzla	331	209	239	206	115	211	282	242	238	286	202	148	2.708	91,04%
TPP Kakanj	198	204	173	111	170	164	110	79	250	211	170	194	2.036	96,99%
TPP Ugljevik	143	140	147	10	66	165	156	160	147	153	159	142	1.587	96,33%
TPP Gacko	147	129	143	137	92	33	145	145	134	143	127	143	1.521	92,84%
TPP Stanari	201	184	116	197	202	193	196	166	0	21	194	204	1.872	93,55%
<b>THERMAL POWER PLANTS</b>	<b>1.019,7</b>	<b>866,1</b>	<b>818,2</b>	<b>661,5</b>	<b>645,1</b>	<b>767,0</b>	<b>888,7</b>	<b>792,2</b>	<b>769,1</b>	<b>814,8</b>	<b>851,2</b>	<b>830,5</b>	<b>9.724,1</b>	<b>93,85%</b>
WPP Meshovina	15	11	18	15	15	8	10	9	9	16	15	22	163	110,50%
WPP Jelovaca	10	10	13	11	11	7	7	7	6	9	10	9	112	97,67%
WPP Podveležje	2	8	12	9	9	6	6	7	7	13	11	18	108	42,66%
<b>WIND POWER PLANT</b>	<b>27,1</b>	<b>29,8</b>	<b>43,1</b>	<b>35,1</b>	<b>35,3</b>	<b>21,0</b>	<b>23,1</b>	<b>22,9</b>	<b>22,7</b>	<b>37,9</b>	<b>35,3</b>	<b>49,6</b>	<b>382,9</b>	<b>146,23%</b>
<b>GENERATION</b>	<b>1.893,1</b>	<b>1.807,2</b>	<b>1.553,3</b>	<b>1.179,7</b>	<b>1.077,4</b>	<b>1.055,2</b>	<b>1.133,1</b>	<b>1.121,5</b>	<b>1.045,9</b>	<b>1.196,8</b>	<b>1.422,9</b>	<b>1.671,4</b>	<b>16.157,5</b>	<b>108,95%</b>



Take over from the transmission system

CATEGORY	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	2021	2021/2020
	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	%
<b>Take over from the transmission sy</b>	<b>1.037,4</b>	<b>912,0</b>	<b>996,3</b>	<b>910,1</b>	<b>825,7</b>	<b>832,4</b>	<b>902,5</b>	<b>902,8</b>	<b>847,9</b>	<b>988,1</b>	<b>991,2</b>	<b>1.085,4</b>	<b>1.123,7</b>	<b>106,18%</b>
Distribution	417	362	398	370	333	331	353	352	333	385	382	428	4.444	103,72%
Direct consumers	50	46	51	43	36	40	48	50	49	44	45	45	549	97,77%
Power Plants - their own consumpti	7	6	6	6	6	6	5	5	7	7	7	6	73	89,60%
<b>EPBHH</b>	<b>474,0</b>	<b>414,0</b>	<b>454,7</b>	<b>418,8</b>	<b>374,6</b>	<b>376,2</b>	<b>406,5</b>	<b>408,3</b>	<b>389,3</b>	<b>435,7</b>	<b>433,9</b>	<b>480,1</b>	<b>5.066,0</b>	<b>102,81%</b>
Distribution	391	345	373	337	301	304	329	318	303	360	370	416	4.146	104,09%
Direct consumers	18	16	18	17	18	16	18	18	17	37	36	36	268	361,02%
Power Plants - their own consumpti	1	1	2	1	2	1	1	1	3	4	1	1	19	114,64%
<b>ERS</b>	<b>410,1</b>	<b>361,9</b>	<b>392,8</b>	<b>356,3</b>	<b>321,8</b>	<b>321,0</b>	<b>347,4</b>	<b>336,8</b>	<b>323,4</b>	<b>401,3</b>	<b>407,3</b>	<b>453,5</b>	<b>4.433,4</b>	<b>108,82%</b>
Distribution	134	114	122	108	96	101	116	117	100	114	116	136	1.374	102,79%
Direct consumers	0	0	0	0	0	0	0	0	0	3	3	4	13	75,26%
Power Plants - their own consumpti	1	1	1	1	1	2	3	3	2	2	1	1	17	125,47%
Pumping regime - PHE Čaplina	3	3	6	5	10	10	8	16	11	31	29	12	144	127,82%
<b>EPHZHB</b>	<b>138,0</b>	<b>117,6</b>	<b>128,5</b>	<b>114,6</b>	<b>107,8</b>	<b>113,6</b>	<b>126,2</b>	<b>135,6</b>	<b>113,7</b>	<b>150,4</b>	<b>149,9</b>	<b>151,9</b>	<b>1.547,9</b>	<b>104,59%</b>
Distribution	0	0	0	0	0	0	0	0	0	0	0	0	0	
Direct consumers	15	18	20	20	22	22	22	3	3	1	0	0	147	153,67%
Power Plants - their own consumpti	0	0	0	0	0	0	0	0	0	0	0	0	0	
<b>LE Trading</b>	<b>15,3</b>	<b>18,5</b>	<b>20,4</b>	<b>20,3</b>	<b>21,6</b>	<b>21,6</b>	<b>22,3</b>	<b>3,1</b>	<b>3,0</b>	<b>0,7</b>	<b>0,0</b>	<b>0,0</b>	<b>146,8</b>	<b>153,67%</b>
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	
Power Plants - their own consumpti	0	0	0	0	0	0	0	0	0	0	0	0	0	
<b>Petrol BH</b>	<b>0,1</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>0,0</b>	<b>0,0</b>	<b>0,0</b>	<b>0,1</b>	<b>0,00%</b>
Distribution	0	0	0	0	0	0	0	0	0	0	0	0	0	
Direct consumers	0	0	0	0	0	0	0	19	19	0	0	0	38	
Power Plants - their own consumpti	0	0	0	0	0	0	0	0	0	0	0	0	0	
<b>BSI</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>19,0</b>	<b>18,5</b>	<b>0,0</b>	<b>0,0</b>	<b>0,0</b>	<b>37,6</b>	<b>0,00%</b>

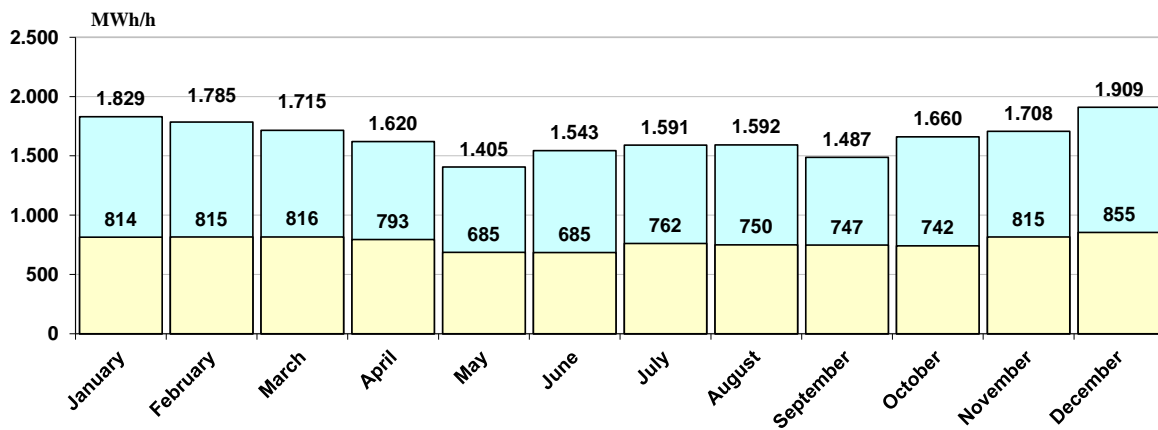
Data on specific hourly and daily consumption in 2021

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	1.829	18.1.2021	18	814	2.1.2021	4	36.485	18.1.2021	28.319	1.1.2021
February	1.785	16.2.2021	10	815	8.2.2021	4	35.932	16.2.2021	28.223	28.2.2021
March	1.715	22.3.2021	14	816	29.3.2021	4	33.929	22.3.2021	26.976	28.3.2021
April	1.620	6.4.2021	15	793	3.4.2021	4	32.475	8.4.2021	25.845	30.4.2021
May	1.405	20.5.2021	15	685	2.5.2021	6	28.096	20.5.2021	22.781	2.5.2021
June	1.543	24.6.2021	15	685	7.6.2021	4	30.057	24.6.2021	23.763	6.6.2021
July	1.591	29.7.2021	15	762	5.7.2021	4	31.069	29.7.2021	24.784	4.7.2021
August	1.592	16.8.2021	15	750	30.8.2021	4	30.558	16.8.2021	25.443	22.8.2021
September	1.487	23.9.2021	20	747	13.9.2021	4	29.267	22.9.2021	25.206	12.9.2021
October	1.660	29.10.2021	10	742	4.10.2021	4	33.937	28.10.2021	25.795	3.10.2021
November	1.708	30.11.2021	18	815	8.11.2021	4	33.688	30.11.2021	28.727	7.11.2021
December	1.909	23.12.2021	18	855	6.12.2021	4	38.444	23.12.2021	31.239	5.12.2021
<b>2021</b>	<b>1.909</b>	<b>23.12.2021</b>	<b>18</b>	<b>685</b>	<b>7.6.2021</b>	<b>4</b>	<b>38.444</b>	<b>23.12.2021</b>	<b>22.781</b>	<b>2.5.2021</b>

Specific values of electricity consumption in 2021

Max hourly consumption			Min hourly consumption			Max daily consumption		Min daily consumption	
MWh	Day	Hour	MWh	Day	Hour	MWh	Day	MWh	Day
1.909	23.12.2021.	18:00	685	07.06.2021.	4:00	38.444	23.12.2021.	22.781	02.05.2021.

Minimum and maximum hourly consumption through the months in 2021



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

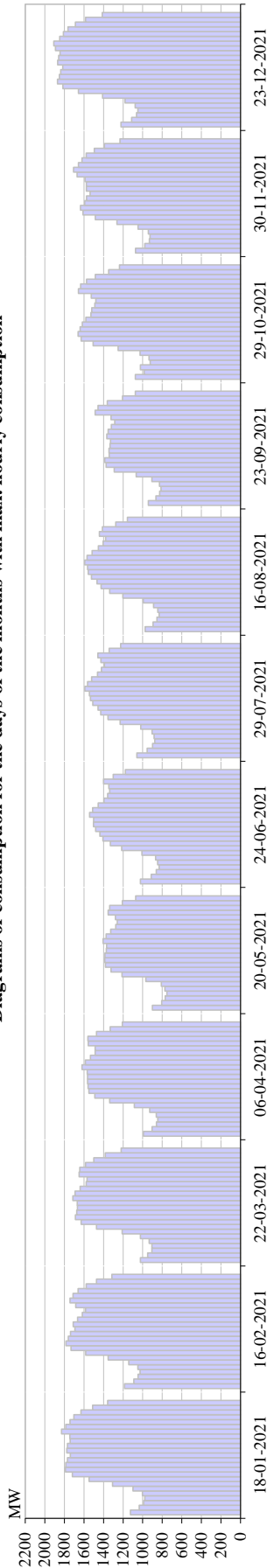


Diagram of consumption for a day in a month with max hourly consumption

	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
<b>January</b>	1125	1036	991	978	1003	1098	1308	1548	1719	1790	1786	1769	1740	1776	1769	1741	1745	1829	1786	1743	1704	1630	1511	1358	36485
<b>February</b>	1186	1091	1048	1026	1050	1142	1353	1583	1733	1785	1761	1737	1694	1710	1666	1617	1584	1685	1744	1713	1660	1577	1473	1314	35932
<b>March</b>	1024	949	906	906	933	1024	1210	1472	1630	1688	1674	1667	1670	1715	1692	1640	1577	1570	1651	1644	1585	1500	1383	1221	33929
<b>April</b>	992	904	860	846	860	928	1085	1338	1490	1550	1559	1563	1563	1568	1620	1587	1535	1486	1487	1557	1560	1472	1333	1208	31951
<b>Maj</b>	900	805	769	753	772	809	969	1211	1324	1381	1387	1386	1372	1368	1405	1373	1327	1276	1260	1278	1353	1338	1208	1071	28096
<b>Juni</b>	1024	913	861	832	847	867	1009	1216	1330	1407	1438	1480	1503	1502	1543	1512	1455	1397	1359	1338	1347	1400	1301	1176	30057
<b>Juli</b>	1059	955	898	877	883	905	1019	1231	1355	1430	1457	1511	1535	1545	1591	1564	1523	1462	1422	1392	1428	1458	1343	1226	31069
<b>August</b>	974	894	853	832	845	889	994	1202	1338	1426	1466	1524	1558	1563	1592	1569	1516	1453	1404	1379	1442	1411	1275	1156	30558
<b>September</b>	943	864	826	813	829	906	1066	1291	1374	1388	1343	1334	1328	1368	1353	1321	1285	1323	1323	1487	1456	1361	1206	1074	28885
<b>Oktober</b>	1076	985	1024	922	935	1027	1251	1508	1628	1660	1639	1617	1581	1528	1520	1490	1480	1526	1656	1634	1574	1484	1349	1237	33331
<b>November</b>	1073	978	932	924	942	1047	1264	1484	1611	1636	1593	1574	1539	1576	1576	1590	1670	1708	1657	1620	1578	1494	1391	1232	33688
<b>December</b>	1223	1112	1062	1049	1076	1180	1410	1657	1815	1870	1853	1838	1818	1869	1858	1845	1892	1909	1849	1811	1764	1688	1584	1413	38444

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

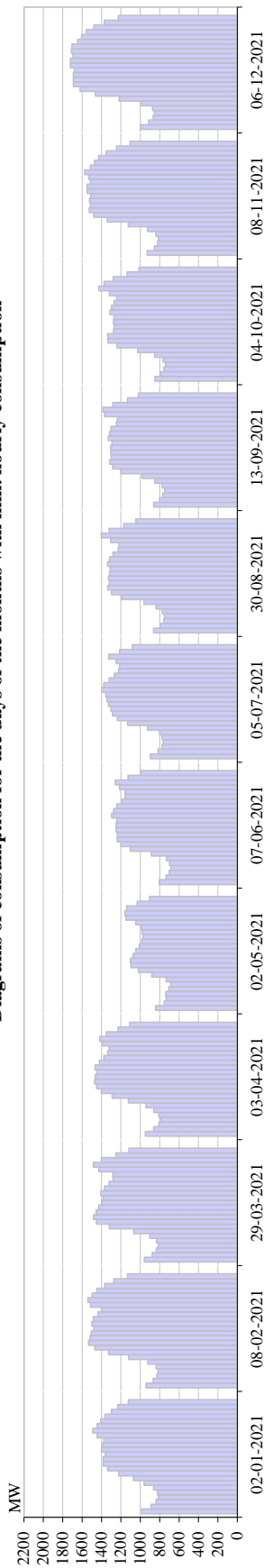


Diagram of consumption for a day in a month with min hourly consumption

	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>Januar</b>	987	889	837	814	823	864	961	1.071	1.224	1.338	1.382	1.383	1.362	1.401	1.391	1.375	1.446	1.489	1.446	1.408	1.363	1.298	1.231	1.122	28.905
<b>Februar</b>	942	868	828	815	835	922	1.121	1.328	1.469	1.535	1.521	1.507	1.480	1.500	1.484	1.435	1.401	1.513	1.541	1.496	1.447	1.367	1.273	1.133	30.760
<b>Mart</b>	959	877	834	816	832	903	1.067	1.320	1.453	1.482	1.454	1.429	1.397	1.383	1.407	1.368	1.322	1.281	1.283	1.428	1.484	1.401	1.251	1.118	29.550
<b>April</b>	947	863	809	793	810	861	942	1.124	1.291	1.403	1.451	1.471	1.463	1.450	1.466	1.423	1.375	1.337	1.322	1.388	1.419	1.351	1.230	1.111	29.101
<b>Maj</b>	841	753	734	737	706	685	734	881	1.019	1.098	1.102	1.076	1.048	1.008	984	972	981	990	1.047	1.149	1.159	1.140	1.032	905	22.781
<b>Juni</b>	806	733	701	685	700	730	885	1.104	1.199	1.239	1.238	1.249	1.250	1.243	1.295	1.274	1.241	1.188	1.157	1.158	1.215	1.258	1.127	999	25.675
<b>Juli</b>	896	817	775	762	776	800	927	1.131	1.237	1.286	1.303	1.327	1.345	1.356	1.393	1.376	1.328	1.268	1.225	1.213	1.249	1.326	1.213	1.082	27.404
<b>August</b>	863	794	758	750	773	839	964	1.196	1.286	1.315	1.299	1.305	1.306	1.309	1.338	1.318	1.281	1.229	1.219	1.305	1.402	1.321	1.171	1.045	27.470
<b>September</b>	861	802	767	747	773	849	984	1.201	1.286	1.315	1.299	1.305	1.306	1.293	1.329	1.317	1.303	1.246	1.237	1.367	1.385	1.284	1.131	1.018	27.406
<b>Oktober</b>	849	793	756	742	765	851	1.028	1.240	1.334	1.337	1.277	1.268	1.277	1.271	1.313	1.298	1.269	1.244	1.320	1.428	1.373	1.280	1.137	1.013	27.466
<b>November</b>	929	855	822	815	839	925	1.124	1.343	1.480	1.528	1.513	1.523	1.509	1.547	1.549	1.514	1.532	1.574	1.516	1.473	1.431	1.351	1.245	1.106	31.044
<b>December</b>	995	913	868	855	874	988	1.219	1.464	1.620	1.689	1.690	1.689	1.679	1.721	1.719	1.694	1.711	1.706	1.646	1.606	1.558	1.479	1.372	1.227	33.980

Diagrams of consumption on a 3rd Wednesday in each month

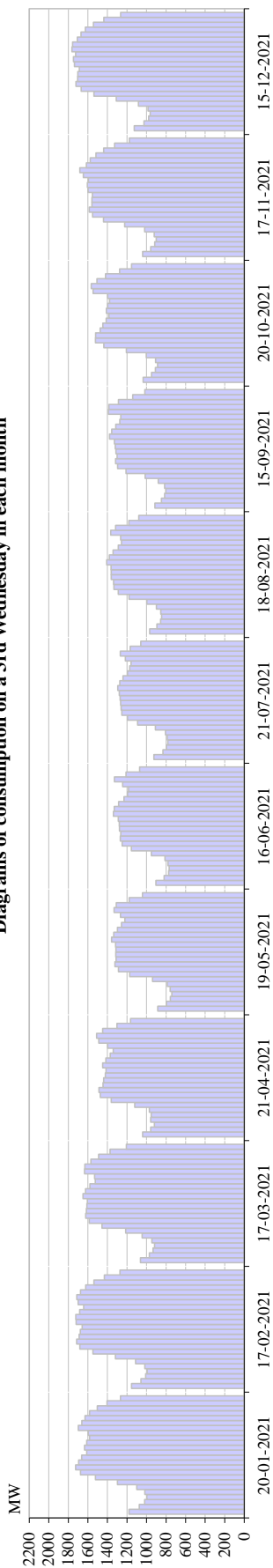


Diagram of consumption on the third Wednesday in a month

	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	1179	1075	1020	997	1017	1101	1298	1523	1675	1726	1695	1664	1613	1635	1613	1583	1596	1698	1662	1630	1583	1503	1405	1266	34,756
February	1154	1058	1009	994	1017	1112	1318	1548	1683	1714	1689	1677	1658	1719	1723	1684	1643	1699	1714	1675	1623	1539	1432	1272	35,354
Mart	1062	971	933	918	945	1044	1214	1455	1586	1623	1616	1610	1605	1650	1624	1579	1524	1531	1635	1632	1570	1489	1373	1207	33,395
April	1041	957	920	958	951	971	1120	1361	1472	1486	1446	1438	1421	1414	1449	1416	1371	1341	1397	1488	1510	1448	1302	1163	30,843
Maj	884	796	756	742	759	788	938	1172	1288	1323	1312	1315	1313	1316	1358	1336	1298	1256	1221	1266	1332	1309	1177	1041	27,297
Junj	904	820	773	768	780	811	951	1155	1249	1268	1263	1278	1279	1289	1339	1330	1286	1231	1194	1185	1244	1329	1210	1071	27,007
Juli	925	831	797	782	788	806	910	1092	1194	1252	1259	1265	1270	1278	1294	1274	1241	1195	1171	1158	1217	1268	1167	1059	26,494
August	968	894	856	846	855	899	997	1180	1289	1334	1337	1361	1361	1363	1408	1380	1343	1289	1256	1266	1366	1316	1181	1079	28,423
September	914	848	816	802	814	880	1015	1210	1297	1317	1302	1312	1321	1329	1378	1356	1315	1273	1263	1390	1385	1288	1141	1018	27,985
Oktoobar	1034	950	910	886	908	1002	1206	1436	1523	1521	1475	1447	1413	1385	1411	1397	1378	1397	1547	1565	1507	1420	1275	1154	31,146
November	1039	958	917	901	921	1019	1225	1439	1551	1586	1559	1558	1554	1598	1605	1594	1646	1682	1616	1576	1517	1438	1327	1175	33,002
December	1125	1026	977	962	984	1083	1309	1538	1670	1721	1704	1703	1688	1737	1747	1725	1763	1757	1708	1671	1625	1543	1437	1266	35,470

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

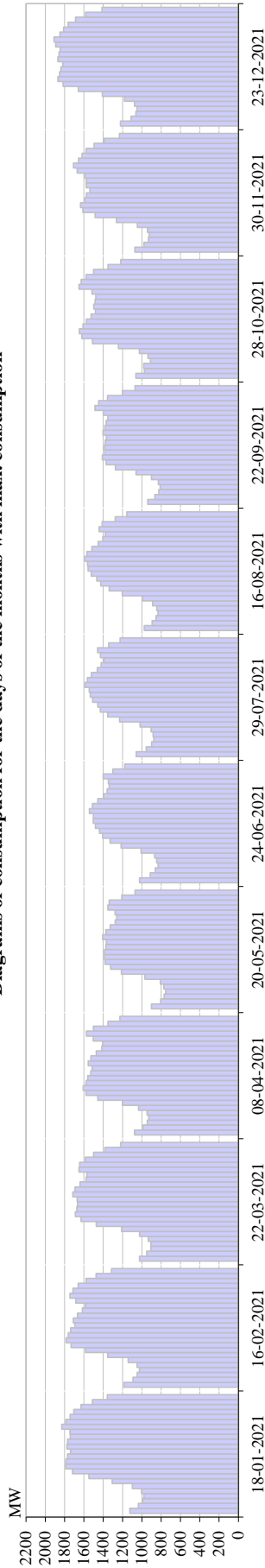


Diagram of consumption for a day in a month with max. consumption

	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>	1125	1036	991	978	1003	1098	1308	1548	1719	1790	1786	1769	1740	1776	1769	1741	1745	1829	1786	1743	1704	1630	1511	1358	36485
<b>February</b>	1186	1091	1048	1026	1050	1142	1353	1583	1733	1785	1761	1737	1694	1710	1666	1617	1584	1685	1744	1713	1660	1577	1473	1314	35932
<b>Mart</b>	1024	949	906	906	933	1024	1210	1472	1630	1688	1674	1667	1670	1715	1692	1640	1577	1570	1651	1644	1585	1500	1383	1221	33929
<b>April</b>	1077	989	944	928	946	1035	1201	1456	1578	1608	1578	1561	1529	1515	1555	1528	1471	1414	1406	1502	1575	1502	1350	1226	32475
<b>Maj</b>	900	805	769	753	772	809	969	1211	1324	1381	1387	1386	1372	1368	1405	1373	1327	1276	1260	1278	1353	1338	1208	1071	28096
<b>Juni</b>	1024	913	861	832	847	867	1009	1216	1330	1407	1438	1480	1503	1502	1543	1512	1455	1397	1359	1338	1347	1400	1301	1176	30057
<b>Juli</b>	1059	955	898	877	883	905	1019	1231	1355	1430	1457	1511	1535	1545	1591	1564	1523	1462	1422	1392	1428	1458	1343	1226	31069
<b>August</b>	974	894	853	832	845	889	994	1202	1338	1426	1466	1524	1558	1563	1592	1569	1516	1453	1404	1379	1442	1411	1275	1156	30558
<b>September</b>	938	865	825	810	829	901	1060	1274	1370	1409	1384	1386	1379	1368	1403	1384	1370	1351	1398	1487	1448	1356	1200	1071	29267
<b>Oktober</b>	1063	974	981	912	937	1026	1243	1511	1621	1647	1609	1575	1525	1481	1497	1483	1476	1517	1650	1629	1578	1500	1351	1219	33004
<b>November</b>	1073	978	932	924	942	1047	1264	1484	1611	1636	1593	1574	1539	1576	1576	1590	1670	1708	1657	1620	1578	1494	1391	1232	33688
<b>December</b>	1223	1112	1062	1049	1076	1180	1410	1657	1815	1870	1853	1838	1818	1869	1858	1845	1892	1909	1849	1811	1764	1688	1584	1413	38444

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

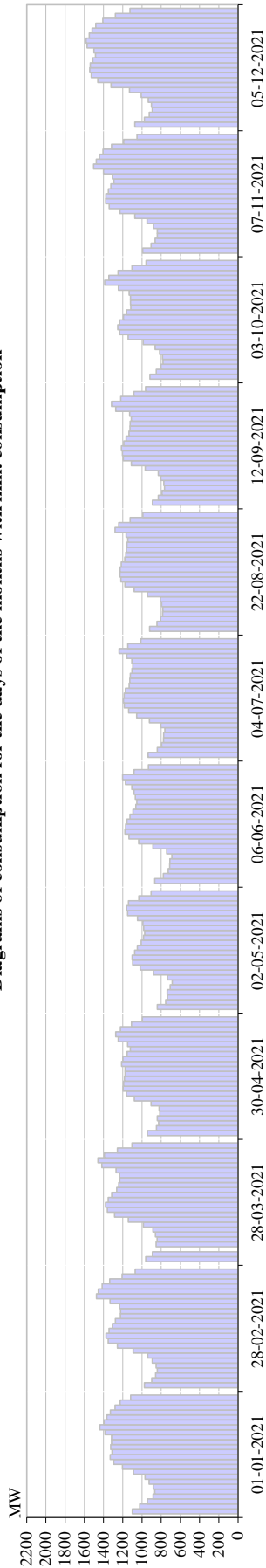


Diagram of consumption for a day in a month with min. consumption

	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>Januar</b>	1100	1023	944	885	866	882	926	967	1089	1204	1294	1331	1311	1326	1317	1316	1385	1439	1396	1365	1329	1280	1227	1118	28.319
<b>Februar</b>	974	899	858	841	852	892	940	1091	1256	1352	1374	1342	1308	1276	1224	1222	1233	1333	1474	1455	1415	1335	1207	1071	28.223
<b>Mart</b>	962	891	853	853	843	859	885	985	1142	1286	1361	1379	1351	1314	1263	1242	1232	1233	1270	1418	1458	1391	1255	1103	26.976
<b>April</b>	944	849	826	841	814	820	904	1080	1161	1196	1191	1183	1175	1175	1212	1197	1155	1122	1150	1247	1273	1225	1109	995	25.845
<b>Maj</b>	841	753	734	737	706	685	734	881	1019	1098	1102	1076	1048	1008	984	972	981	990	1047	1149	1159	1140	1032	905	22.781
<b>Juni</b>	867	777	728	711	709	689	743	885	1034	1135	1176	1170	1156	1126	1094	1064	1053	1069	1082	1105	1172	1202	1083	933	23.763
<b>Juli</b>	937	841	796	776	775	763	804	923	1054	1140	1184	1193	1186	1172	1134	1127	1121	1104	1095	1106	1158	1238	1147	1011	24.784
<b>August</b>	920	844	806	784	783	795	809	944	1080	1176	1219	1229	1227	1215	1179	1169	1161	1156	1147	1165	1280	1242	1123	990	25.443
<b>September</b>	892	830	791	766	773	803	830	965	1110	1194	1204	1213	1190	1164	1135	1125	1123	1110	1129	1273	1316	1221	1085	963	25.206
<b>Oktober</b>	917	852	802	782	786	817	863	987	1144	1233	1252	1233	1193	1159	1116	1120	1119	1133	1244	1388	1345	1249	1104	958	25.795
<b>November</b>	992	906	863	840	841	881	947	1074	1229	1340	1379	1375	1350	1324	1292	1308	1401	1503	1476	1442	1405	1316	1191	1051	28.727
<b>December</b>	1074	975	923	892	901	935	1008	1131	1323	1460	1528	1544	1539	1512	1485	1499	1571	1583	1549	1518	1480	1407	1277	1125	31.239

## NOMINATED EXCHANGE PROGRAMME WITH NEIGHBOURING EES

NOMINATED EXCHANGE	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	2021
	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh
BiH ↔ CRO (HEP-OPS)	54,9	36,8	117,2	108,5	129,9	124,2	167,4	297,7	171,6	192,9	188,7	83,9	1.673,7
BiH ↔ SR (EMS)	121,5	60,0	236,8	207,4	249,2	182,2	305,9	199,8	312,5	228,3	135,3	164,6	2.403,4
BiH ↔ MG (EPCG)	120,7	76,2	70,0	73,6	144,4	70,3	43,6	45,6	48,0	60,5	73,6	128,6	955,1
<b>(1) Received BiH</b>	<b>297,1</b>	<b>173,1</b>	<b>423,9</b>	<b>389,6</b>	<b>523,4</b>	<b>376,8</b>	<b>516,9</b>	<b>543,0</b>	<b>532,2</b>	<b>481,6</b>	<b>397,6</b>	<b>377,1</b>	<b>5.032,2</b>
BiH → CRO (HEP-OPS)	536,7	487,5	367,6	287,0	308,5	212,2	255,8	157,2	258,4	231,3	248,9	359,3	3.710,4
BiH → SR (EMS)	366,6	326,7	316,4	141,9	228,2	170,5	212,8	254,4	207,5	198,4	317,2	387,1	3.128,0
BiH → MG (EPCG)	240,3	248,1	274,8	228,5	236,6	206,2	267,8	329,4	244,8	244,5	249,3	205,1	2.975,3
<b>(2) Delivered BiH</b>	<b>1.143,6</b>	<b>1.062,4</b>	<b>958,8</b>	<b>657,4</b>	<b>773,3</b>	<b>589,0</b>	<b>736,4</b>	<b>741,0</b>	<b>710,8</b>	<b>674,2</b>	<b>815,4</b>	<b>951,5</b>	<b>9.813,7</b>
<b>(3) Balance BiH (2) - (1)</b>	<b>846,5</b>	<b>889,3</b>	<b>535,0</b>	<b>267,8</b>	<b>249,9</b>	<b>212,2</b>	<b>219,5</b>	<b>198,0</b>	<b>178,6</b>	<b>192,5</b>	<b>417,8</b>	<b>574,4</b>	<b>4.781,5</b>
Balance CRO (HEP-OPS)	481,7	450,7	250,4	178,5	178,6	88,0	88,4	-140,5	86,8	38,4	60,2	275,4	2.036,7
Balance SR (EMS)	245,2	266,7	79,7	-65,5	-20,9	-11,7	-93,1	54,6	-105,0	-29,9	181,9	222,6	724,6
Balance MG (EPCG)	119,5	171,9	204,9	154,8	92,2	135,8	224,2	283,9	196,8	184,0	175,7	76,4	2.020,2
Transit	261,9	150,1	324,9	274,0	317,1	233,7	318,2	318,7	408,8	360,8	320,0	351,7	3.640,0
Internal trade													

## 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	2021
	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh
BiH ↔ CRO (HOPS)	97,2	86,9	120,4	137,7	158,9	131,6	186,4	244,7	119,7	198,3	151,6	147,4	1.780,8
BiH ↔ SR (EMS)	37,5	34,0	84,6	108,0	105,3	54,9	69,4	58,8	148,5	96,2	31,3	50,0	878,6
BiH ↔ MG (EPCG)	69,5	51,9	54,8	74,1	75,0	51,0	50,9	20,3	47,1	24,7	23,5	56,6	599,4
<b>(1) Received BiH</b>	<b>204,2</b>	<b>172,9</b>	<b>259,8</b>	<b>319,7</b>	<b>339,3</b>	<b>237,5</b>	<b>306,7</b>	<b>323,8</b>	<b>315,3</b>	<b>319,2</b>	<b>206,4</b>	<b>254,0</b>	<b>3.258,7</b>
BiH → CRO (HOPS)	688,1	657,3	444,5	370,1	358,7	226,4	252,8	144,6	341,0	216,5	245,1	468,3	4.413,6
BiH → SR (EMS)	115,9	106,6	41,2	35,1	62,4	61,6	51,6	81,3	19,3	43,8	87,5	107,4	813,6
BiH → MG (EPCG)	240,9	296,5	313,8	182,5	173,0	157,8	211,1	294,4	130,1	244,3	289,0	253,2	2.786,7
<b>(2) Delivered BiH</b>	<b>1.044,9</b>	<b>1.060,5</b>	<b>799,6</b>	<b>587,6</b>	<b>594,1</b>	<b>445,9</b>	<b>515,5</b>	<b>520,3</b>	<b>490,4</b>	<b>504,5</b>	<b>621,7</b>	<b>828,9</b>	<b>8.013,9</b>
<b>(3) Balance BiH (2) - (1)</b>	<b>840,7</b>	<b>887,6</b>	<b>539,8</b>	<b>267,9</b>	<b>254,9</b>	<b>208,4</b>	<b>208,8</b>	<b>196,5</b>	<b>175,1</b>	<b>185,3</b>	<b>415,3</b>	<b>574,9</b>	<b>4.755,2</b>
Balance CRO (HOPS)	590,9	570,4	324,1	232,4	199,7	94,8	66,4	-100,1	221,3	18,2	93,6	321,0	2.632,8
BALANCE SR (EMS)	78,4	72,6	-43,4	-72,9	-43,0	6,7	-17,8	22,5	-129,2	-52,5	56,1	57,4	-64,9
BALANCE MG (EPCG)	171,4	244,6	259,1	108,5	98,1	106,8	160,2	274,1	83,0	219,5	265,6	196,6	2.187,3

## Deviations of EES BiH towards the Interconnection in 2021

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	-742	-12	-6.834	31	7	1.183	-742	-8	-5.651
February	-178	-15	-8.476	118	11	1.289	-178	-10	-7.187
March	-66	-11	-4.900	51	9	2.576	-66	-3	-2.324
April	-84	-12	-5.517	48	11	2.769	-84	-4	-2.748
May	-105	-12	-3.510	62	13	5.677	-105	3	2.166
June	-71	-12	-5.475	95	11	3.049	95	-3	-2.426
July	-109	-18	-11.148	96	11	1.240	-109	-13	-9.908
August	-101	-12	-4.720	52	10	3.206	-101	-2	-1.513
September	-57	-12	-5.614	69	8	2.117	69	-5	-3.497
October	-122	-19	-10.614	113	7	1.295	-122	-12	-9.319
November	-86	-17	-7.105	80	13	4.073	-86	-4	-3.032
December	-140	-19	-6.487	61	17	6.955	-140	1	468
<b>2021</b>	<b>-742</b>	<b>-14</b>	<b>-80.435</b>	<b>118</b>	<b>11</b>	<b>35.417</b>	<b>-742</b>	<b>-5</b>	<b>-44.971</b>