



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 2019

Sarajevo, February 2020

This Report presents power flows in the transmission system in BiH in 2019. 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 18 327 GWh of electricity was available on the transmission network of BiH in 2019. Total of 15 322 GWh was produced in the transmission system and another 180 GWh of electricity was injected from the distribution system. From the neighbouring systems it was received 2 825 GWh of electricity.

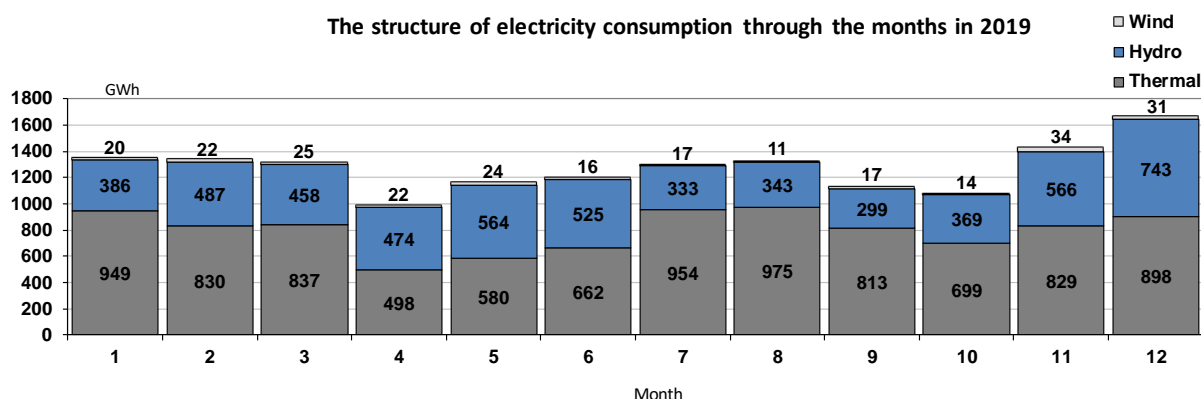
Out of totally available electricity on transmission network, distribution companies took over 9 666 GWh, customers directly connected to the transmission system took over 1 582 GWh, neighbouring systems were delivered 6 565 GWh, while transmission losses amounted to 324 GWh, which makes 1,77 % of totally available electricity on transmission network. In 2019, PSHPP Čapljina in pumping regime took over 96 GWh.

In 2019 takeover of electricity from the transmission system in BiH was reduced by 10% compared to 2018. In July 2019 the biggest electricity consumer Aluminij d.d. Mostar was disconnected from the transmission system.

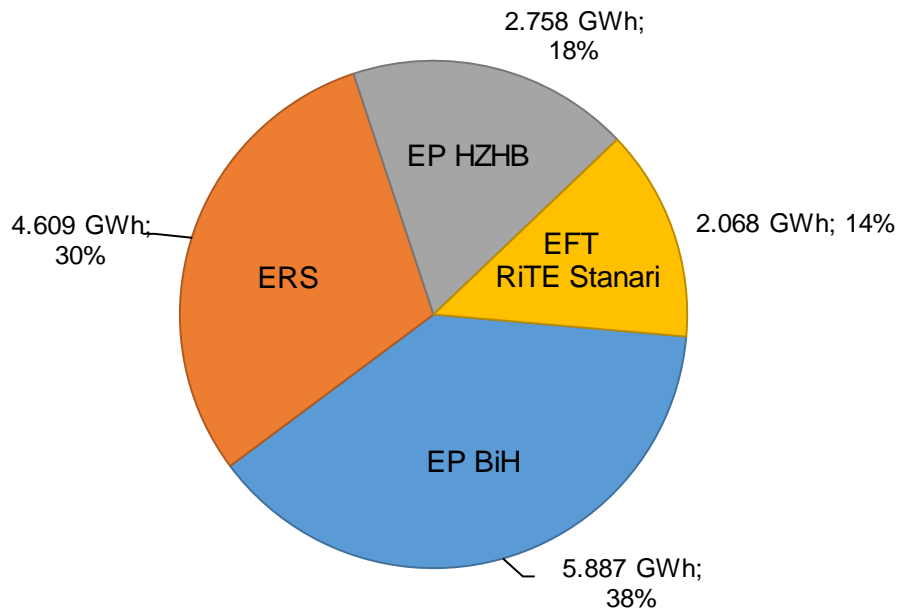
Electricity generation in the transmission system

Out of totally produced 15 322 GWh of electricity in the transmission system in 2019, Hydro Power Plants produced 5 544 GWh, i.e. 36% of electricity, and Thermal Power Plants produced 9 524 GWh, i.e. 62% of electricity. At the beginning of 2019 Wind Power Plant Jelovača entered its trial operation and produced 87.7 GWh of electricity. Wind Power Plants produced 254 GWh, i.e. 2% of electricity. In 2019 Thermal Power Plants generation is 12.2% lower and Hydro Power Plants generation is 11.4% lower.

The following diagrams show the structure of electricity generation over 12 months in 2019 and generation companies' share in total amount of electricity generation in BiH.



Companies' shares in the electricity generation

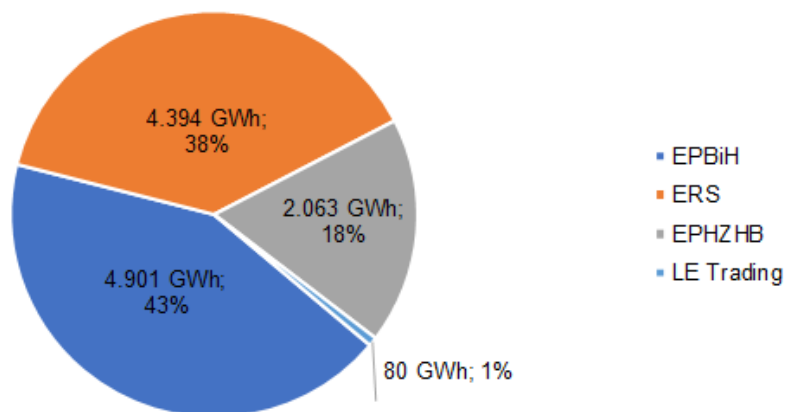


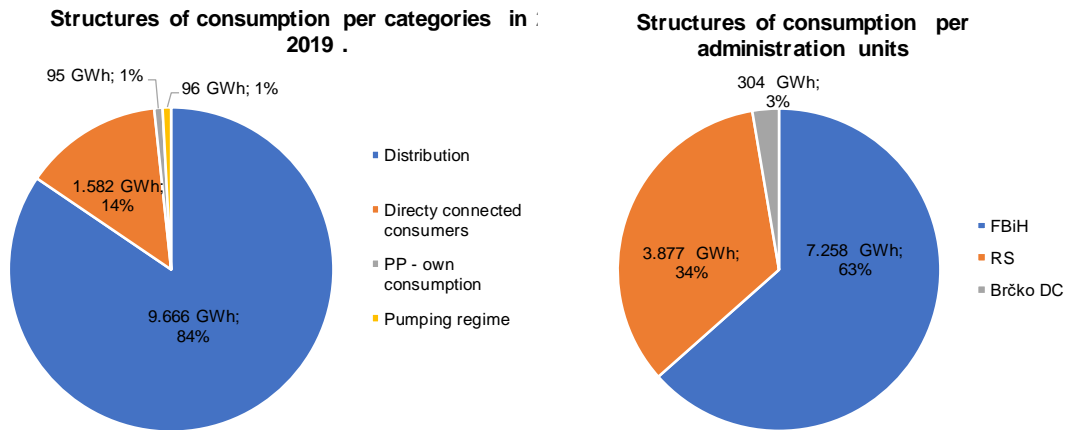
Electricity consumption in the transmission system

Electricity consumption in the transmission system of BiH in 2019 amounted to 11 439 GWh and was 7.24% lower than in 2018. Consumption of PSHHP Čapljina in pumping regime amounted to 96 GWh in 2019. Distribution companies took over 9 666 GWh from the transmission system, and customers directly connected to the transmission system took over 1 582 GWh of electricity. The power plants' own consumption in 2019 amounted to 95 GWh.

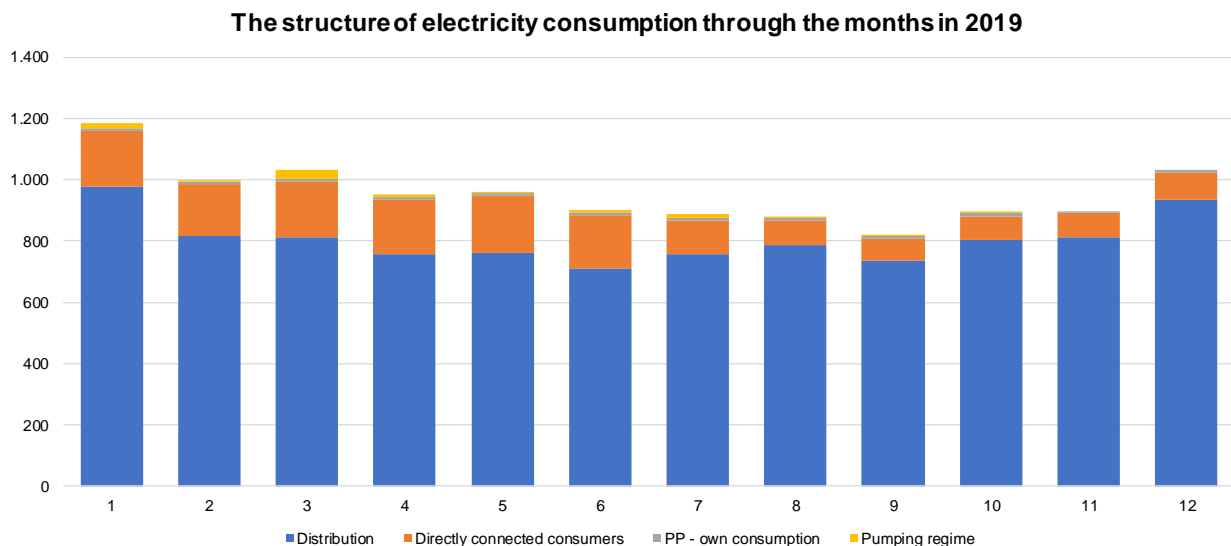
The following diagrams show the consumption of balance responsible parties and the consumption structure in terms of consumption categories and administrative units in BiH.

BRP's electricity takeover from the BiH transmission system in 2019.





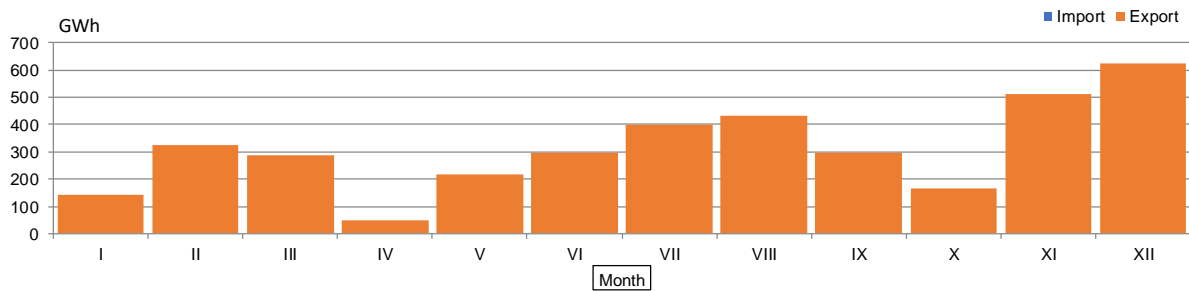
The highest monthly consumption in amount of 1 184 GWh in the transmission system in BiH was measured in January. The lowest monthly consumption was in September amounting to 817 GWh of electricity. The following diagram shows monthly consumption in the transmission system in BiH.



Nominated power exchange with neighbouring systems

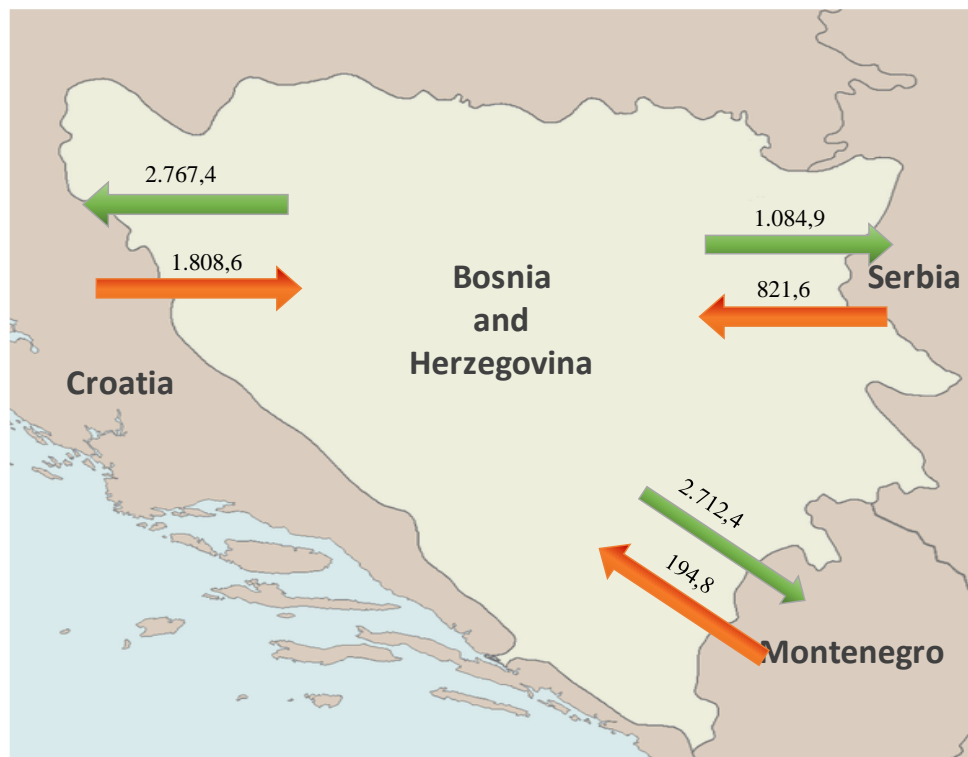
According to nominated exchange programmes, in the year 2019, 4 880 GWh of electricity was imported in BiH power system, and 8 626 GWh of electricity was exported from BiH power system. In 2019, out of the above given amount 2 747 GWh of electricity was transited over BiH transmission network. The balance amount of 3 746 GWh of exported energy indicates that electricity export was 19% lower than in 2018.

Balance of nominated exchange in BiH in 2019



Crossborder power flows

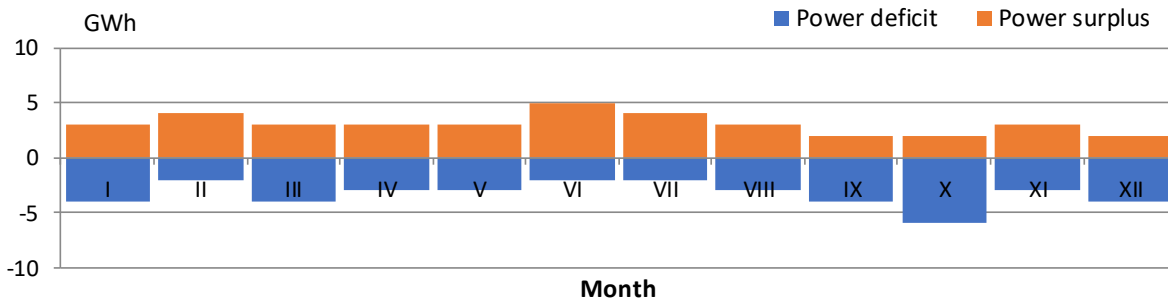
Actual physical power flows on interconnection lines in 2019 resulted with the balance of exchanged electricity of BiH Control Area in amount of 3 740 GWh in direction of export. From neighbouring systems 2 825 GWh was injected in BiH transmission system and in other systems 6 565 GWh of electricity was delivered. Power flows on the borders with neighbouring systems were such that in 2019 on the border with Serbia 263 GWh was injected in BiH transmission system, while on the border with Croatia 959 GWh of electricity was delivered, and on the border with Montenegro 2 518 GWh of electricity was delivered.



Deviations from nominated exchange programmes

Unintentional deviations from nominated exchange programmes in 2019 were 42 GWh in total for the hours with deficit registered, i.e. the total of 39 GWh for the hours with energy surplus registered in BiH Control Area. Maximum hourly electricity deficit in amount of 186 MWh/h was registered in April, and electricity surplus of 171 MWh/h was registered in September 2019.

Monthly deviations of EES BiH toward the interconnection in 2019



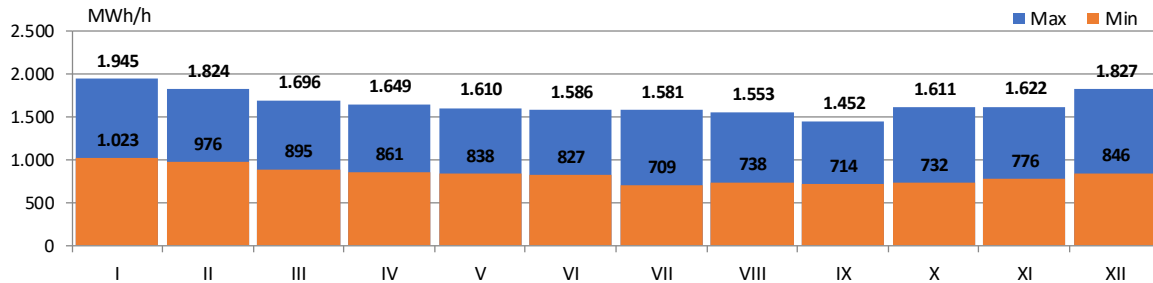
Specific values of hourly and daily consumption

Maximum hourly load in 2019 in amount of 1 945 MWh/h was realized on 5th January 2019 in the 18th hour. Maximum daily consumption in amount of 38 951 MWh of electricity was realized on 5th January. Minimum hourly consumption in amount of 709 MWh was registered on 14th July 2019 in the 6th hour, and minimum daily consumption of electricity in amount of 23 721 MWh was registered on 14th July.

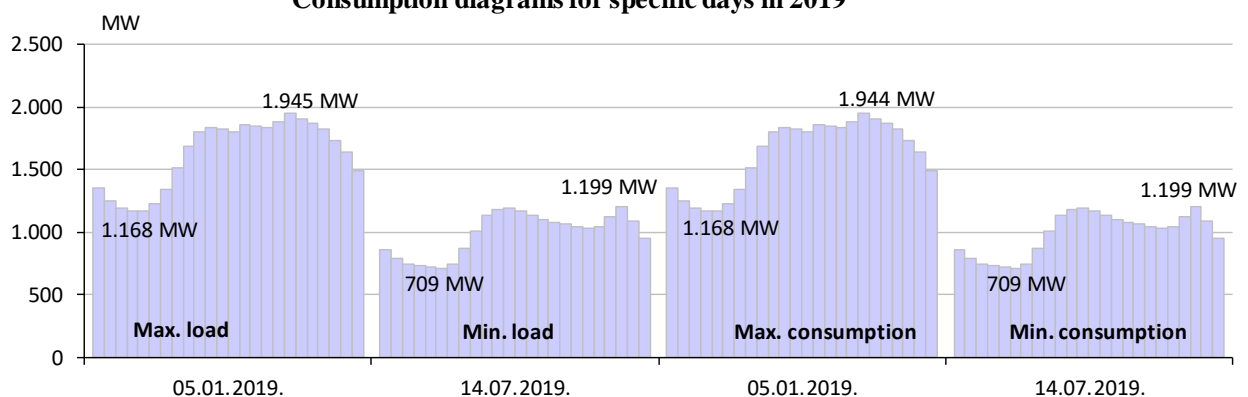
Specific values of electricity consumption in 2019

Max hourly consumption			Min hourly consumption			Max daily consumption		Min daily consumption	
MWh	Day	Hour	MWh	Day	Hour	MWh	Day	MWh	Day
1.945	05.01.2019.	18:00	709	14.07.2019.	6:00	38.951	05.01.2019.	23.721	14.07.2019.

Max. and min. hourly consumption over months in 2019



Consumption diagrams for specific days in 2019



BALANCE OF ELECTRICITY IN THE TRANSMISSION SYSTEM

	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	2019	2019/2018
	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	%
Electricity generation in the transmission system														
(1) HPP	386	487	458	474	564	525	333	343	299	369	566	743	5,544	88,62%
(2) TPP	949	830	837	498	580	662	954	975	813	699	829	898	9,524	87,78%
(3) WPP	20	22	25	22	24	16	17	11	17	14	34	31	254	245,10%
(4) Generation TOTAL (1+2+3)	1.355	1.339	1.320	994	1.168	1.203	1.303	1.329	1.129	1.081	1.429	1.672	15.322	89,03%
(5) Energy received from the distrib. system	5	16	26	30	34	18	6	8	4	4	13	16	180	142,96%
Electricity import from the neighbouring power systems														
(6) From EES Croatia	223	66	75	172	147	97	128	169	212	200	159	161	1,809	183,40%
(7) From EES Serbia	68	73	262	113	51	57	34	27	26	88	15	8	822	81,94%
(8) From EES Montenegro	30	27	26	7	13	25	15	18	14	8	8	4	195	17,66%
(9) Import TOTAL (6, 7, 8)	321	166	363	293	211	179	176	214	251	296	181	173	2,925	91,37%
(10) AVAILABLE ENERGY (3+4+8)	1.680,7	1.521,0	1.709,8	1.317,0	1.413,3	1.399,5	1.485,9	1.550,5	1.384,2	1.380,5	1.623,3	1.861,6	18.327,3	89,72%
Takeover of electricity from the transmission system														
(11) Distribution companies	976	818	812	755	762	710	756	788	735	805	814	935	9,666	100,01%
(12) Directly connected consumers *	182	169	184	179	187	174	111	79	74	76	79	88	1,582	65,79%
(13) Power plants own consumption	9	8	8	8	6	8	8	9	7	9	6	8	95	76,06%
(14) Takeover TOTAL (11+12+13)	1.168	995	1.004	942	954	892	874	877	817	890	898	1.032	11.342	93,02%
Electricity Export to the neighbouring power systems														
(15) for EES Croatia	168	333	483	134	156	246	248	260	169	164	215	192	2,767	46,41%
(16) for EES Serbia	65	38	26	55	104	74	88	94	114	57	163	207	1,085	22,196%
(17) for EES Montenegro	229	121	138	154	170	155	238	291	263	238	320	398	2,712	217,65%
(18) Export TOTAL (15+16+17)	462	492	646	343	430	475	574	644	545	459	698	797	6,565	85,28%
(19) Pumping	16	4	30	7	5	10	14	5	0	6	0	0	96	70,06%
(20) REQUIRED POWER (14+18+19)	1.645,4	1.490,1	1.679,8	1.292,5	1.389,0	1.377,0	1.462,1	1.525,4	1.362,4	1.355,5	1.596,1	1.828,2	18.003,4	89,89%
Transmission losses														
(21) Transmission losses (10-20)	35	31	30	25	24	23	24	25	22	25	27	33	324	81,24%
(22) In relation to available power (21)/(10)	2,10%	2,03%	1,76%	1,86%	1,72%	1,61%	1,60%	1,62%	1,57%	1,81%	1,67%	1,79%	1,77%	

ELECTRICITY GENERATION IN THE TRANSMISSION SYSTEM

GENERATION	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	2019	2019/2018
	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	%
HPP Jablanica	56	68	65	73	90	67	37	40	47	55	53	94	746	93,51%
HPP Grabovica	23	27	24	28	33	24	13	14	16	20	26	35	282	92,33%
HPP Salakovac	29	43	32	45	57	32	13	14	15	19	60	61	421	96,67%
HPP Višegrad	64	96	93	94	103	95	47	41	37	18	76	95	858	74,42%
HPP Trebinje 1	13	11	19	13	18	36	34	52	31	45	30	57	359	68,13%
HPP Trebinje 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0,00%
HPP Dubrovnik (G2)	22	0	0	0	0	0	0	0	0	0	0	0	22	2,88%
HPP Bočac	16	35	33	30	47	39	17	11	9	8	16	27	289	103,71%
HPP Dub	3	8	10	9	11	8	4	3	1	1	2	3	64	120,83%
HPP Rama	79	44	44	39	41	69	60	60	67	90	60	84	739	101,22%
HPP Mostar	18	24	19	26	32	19	10	10	11	13	28	31	242	96,81%
HPP Lajce 1	17	29	33	30	39	33	18	11	8	6	20	30	275	103,68%
HPP Lajce 2	5	7	9	9	9	8	6	4	4	3	7	10	82	107,46%
PSHPP Čapljina	23	58	68	58	55	77	72	82	51	88	150	164	945	215,91%
HPP Pece-Mlini	10	14	5	8	11	7	2	1	0	0	10	17	85	101,75%
HPP Mostarsko Blato	8	22	4	12	17	8	0	0	0	0	28	37	136	126,16%
HYDRO POWER PLANTS	385,6	487,2	457,9	474,3	563,7	524,5	332,7	342,6	298,6	368,6	565,5	743,2	5.544,3	88,62%
TPP Tuzla	256	167	235	173	175	171	260	255	225	215	240	241	2.612	86,25%
TPP Kakanj	225	217	162	135	54	136	180	229	127	149	72	139	1.826	72,60%
TPP Ugljevik	135	127	146	162	148	133	155	130	131	55	173	151	1.647	93,33%
TPP Gacko	154	134	138	0	0	27	158	163	151	135	148	162	1.370	92,29%
TPP Stanari	179	185	155	27	203	195	200	198	179	145	197	204	2.068	100,60%
THERMAL POWER PLANTS	949,1	829,7	837,3	498,3	580,2	662,2	953,5	974,7	813,5	698,5	829,2	897,9	9.524,2	87,78%
WPP Meshovina	19	19	19	13	15	9	10	6	10	7	19	19	166	160,37%
WPP Jelevača	1	3	6	8	10	7	7	5	8	6	15	12	88	
WIND POWER PLANT	20,2	22,2	25,2	21,7	24,3	15,9	16,9	11,3	17,3	13,7	34,0	31,0	253,7	245,10%
GENERATION	1.355,0	1.339,1	1.320,4	994,2	1.168,1	1.202,7	1.303,1	1.328,6	1.129,4	1.080,8	1.428,7	1.672,1	15.322,2	89,03%

ELECTRICITY CONSUMPTION IN THE TRANSMISSION SYSTEM

CONSUMPTION	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	2019	2019/2018
	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	%
Take over from the transmission sy	1.183,6	998,6	1.033,8	949,5	958,9	902,0	888,0	881,3	817,0	896,2	898,2	1.031,5	11.438,7	92,76%
Distribution	429	359	362	341	345	320	338	351	334	365	363	414	4.320	101,63%
Directly connected consumers	47	45	46	41	44	36	43	42	38	38	42	50	512	104,17%
PP - own consumption	7	6	6	5	4	6	6	7	5	6	4	6	70	69,72%
EPBiH	482,5	410,5	414,5	387,5	392,5	362,4	386,9	399,6	376,7	409,1	408,9	470,4	4.901,4	101,23%
Distribution	403	343	335	309	310	285	303	317	298	328	338	392	3.960	99,08%
Directly connected consumers	29	28	33	36	37	36	37	37	35	37	36	37	418	99,11%
PP - own consumption	2	1	1	3	1	2	1	1	1	3	1	1	16	97,16%
ERS	434,1	371,5	369,0	347,6	348,5	322,1	340,6	354,6	334,0	367,3	374,9	429,6	4.393,8	99,08%
Distribution	144	117	115	105	107	105	115	121	104	112	112	130	1.387	97,79%
Directly connected consumers	107	96	105	102	106	54	0	0	0	0	0	0	571	13597,40%
PP - own consumption	1	1	0	0	1	1	1	1	1	1	1	1	9	112,33%
Pumping regime - PHE Čapljina	16	4	30	7	5	10	14	5	0	6	0	0	96	70,06%
EPHZHB	267,0	216,6	250,3	214,4	217,9	170,3	130,2	126,6	105,7	119,2	113,8	131,0	2.063,0	131,62%
Distribution	0	0	0	0	0	0	0	0	0	0	0	0	0	
Directly connected consumers	0	0	0	0	0	47	30	1	1	1	1	1	80	5,41%
PP - own consumption	0	0	0	0	0	0	0	0	0	0	0	0	0	
LE Trading	0,0	0,0	0,0	0,0	0,0	47,2	30,4	0,5	0,6	0,6	0,5	0,5	80,4	5,41%

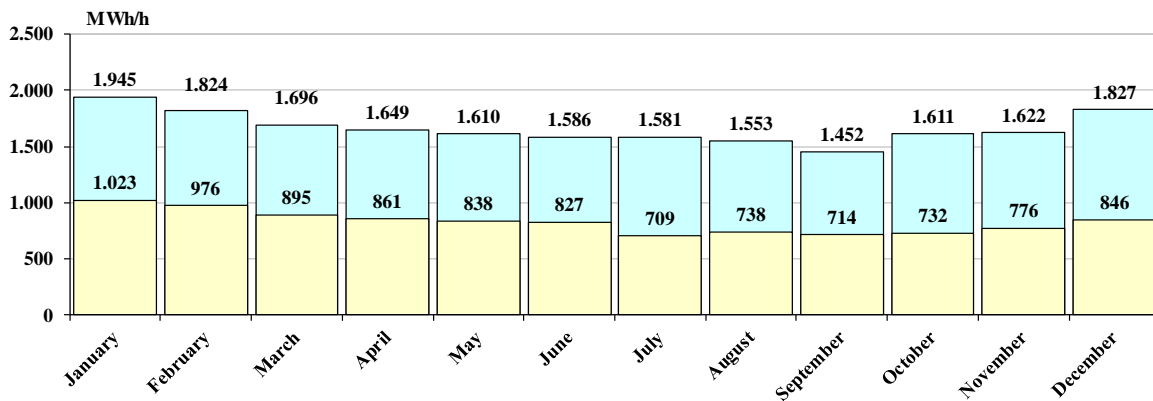
Data on specific hourly and daily consumption in 2019

Month	Max.hourly consumption			Min.hourly consumption			Max.daily consumption		Min.daily consumption	
	MWh/h	Day	Hour	MWh/h	Day	Hour	MWh	Day	MWh	Day
January	1.945	05.01.2019	18	1.023	02.01.2019	4	38.951	05.01.2019	32.478	01.01.2019
February	1.824	13.02.2019	19	976	03.02.2019	5	36.920	13.02.2019	33.108	03.02.2019
March	1.696	14.03.2019	20	895	11.03.2019	4	34.430	26.03.2019	28.793	31.03.2019
April	1.649	16.04.2019	21	861	29.04.2019	4	33.360	13.04.2019	27.854	28.04.2019
May	1.610	07.05.2019	21	838	26.05.2019	6	33.189	15.05.2019	27.693	01.05.2019
June	1.586	27.06.2019	15	827	17.06.2019	4	31.533	27.06.2019	27.113	30.06.2019
July	1.581	02.07.2019	15	709	14.07.2019	6	31.682	03.07.2019	23.721	14.07.2019
August	1.553	10.08.2019	15	738	05.08.2019	4	30.602	10.08.2019	24.579	04.08.2019
September	1.452	20.09.2019	20	714	30.09.2019	4	28.079	20.09.2019	24.795	29.09.2019
October	1.611	31.10.2019	18	732	03.10.2019	4	31.407	31.10.2019	26.196	13.10.2019
November	1.622	27.11.2019	18	776	04.11.2019	4	31.705	27.11.2019	27.605	10.11.2019
December	1.827	31.12.2019	18	846	02.12.2019	4	35.281	30.12.2019	29.644	22.12.2019
2019	1.945	05.01.2019	18	709	14.07.2019	6	38.951	05.01.2019	23.721	14.07.2019

Specific values of electricity consumption in 2019

Max hourly consumption			Min hourly consumption			Max daily consumption		Min daily consumption	
MWh	Day	Hour	MWh	Day	Hour	MWh	Day	MWh	Day
1.945	05.01.2019.	18:00	709	14.07.2019.	6:00	38.951	05.01.2019.	23.721	14.07.2019.

Monthly overview of maximum and minimum hourly consumption in 2019



Diagrams of consumption for days in a month with maximum hourly consumption

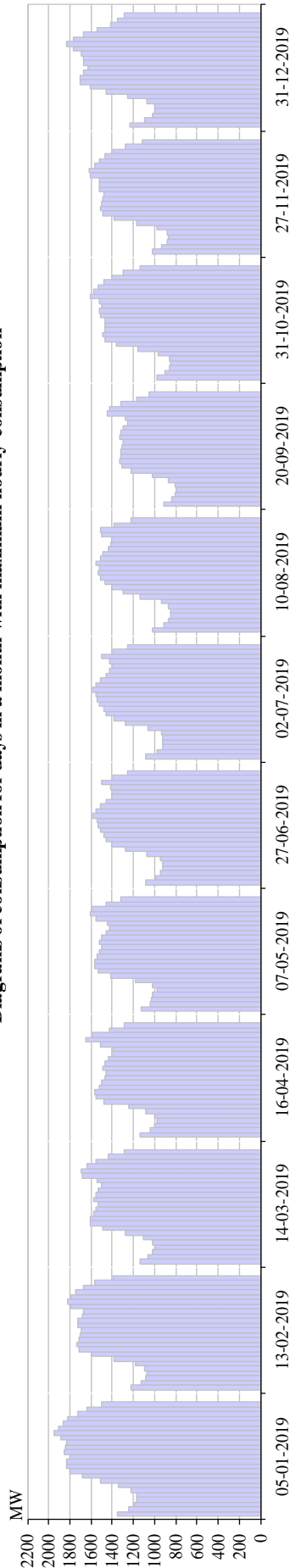


Diagram of consumption for days in a month with max hourly consumption

	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	1355	1.249	1.192	1.168	1.169	1.223	1.336	1.509	1.685	1.801	1.833	1.827	1.804	1.857	1.843	1.829	1.883	1.945	1.903	1.863	1.817	1.729	1.636	1.496	38.951
February	1.228	1.130	1.087	1.071	1.090	1.185	1.388	1.602	1.715	1.736	1.716	1.708	1.693	1.729	1.720	1.681	1.669	1.787	1.824	1.790	1.746	1.666	1.562	1.394	36.920
March	1.139	1.059	1.018	1.001	1.018	1.110	1.278	1.492	1.602	1.607	1.574	1.553	1.530	1.572	1.556	1.536	1.496	1.540	1.686	1.696	1.640	1.551	1.436	1.286	33.978
April	1.140	1.044	998	981	1.000	1.087	1.247	1.474	1.556	1.561	1.522	1.498	1.469	1.459	1.490	1.471	1.433	1.391	1.390	1.515	1.649	1.586	1.427	1.287	32.674
May	1.127	1.039	1.033	1.017	977	1.017	1.179	1.415	1.529	1.567	1.562	1.546	1.522	1.505	1.523	1.497	1.455	1.421	1.448	1.559	1.610	1.595	1.454	1.323	32.921
June	1.080	988	942	921	923	943	1.069	1.274	1.399	1.458	1.476	1.515	1.534	1.547	1.586	1.556	1.510	1.453	1.405	1.389	1.418	1.501	1.392	1.255	31.533
July	1.089	981	929	919	924	936	1.066	1.273	1.386	1.455	1.482	1.524	1.547	1.556	1.581	1.557	1.516	1.457	1.423	1.399	1.422	1.501	1.398	1.254	31.574
August	1.017	912	867	845	846	865	937	1.134	1.299	1.409	1.466	1.513	1.536	1.525	1.553	1.516	1.488	1.438	1.412	1.404	1.498	1.516	1.379	1.228	30.602
September	913	836	801	800	811	875	1.017	1.227	1.313	1.333	1.324	1.320	1.310	1.298	1.332	1.316	1.293	1.252	1.278	1.452	1.430	1.323	1.172	1.051	28.079
October	983	902	862	854	865	967	1.158	1.360	1.466	1.489	1.471	1.470	1.464	1.508	1.520	1.500	1.527	1.611	1.575	1.533	1.480	1.409	1.297	1.136	31.407
November	1.016	931	885	867	883	973	1.172	1.379	1.493	1.514	1.496	1.487	1.477	1.521	1.518	1.524	1.602	1.622	1.564	1.518	1.472	1.393	1.277	1.120	31.705
December	1.235	1.094	1.025	1.000	1.002	1.075	1.259	1.462	1.612	1.701	1.698	1.667	1.628	1.666	1.676	1.689	1.766	1.827	1.765	1.672	1.539	1.416	1.348	1.283	35.108

Diagrams of consumption for days in a month with minimum hourly consumption

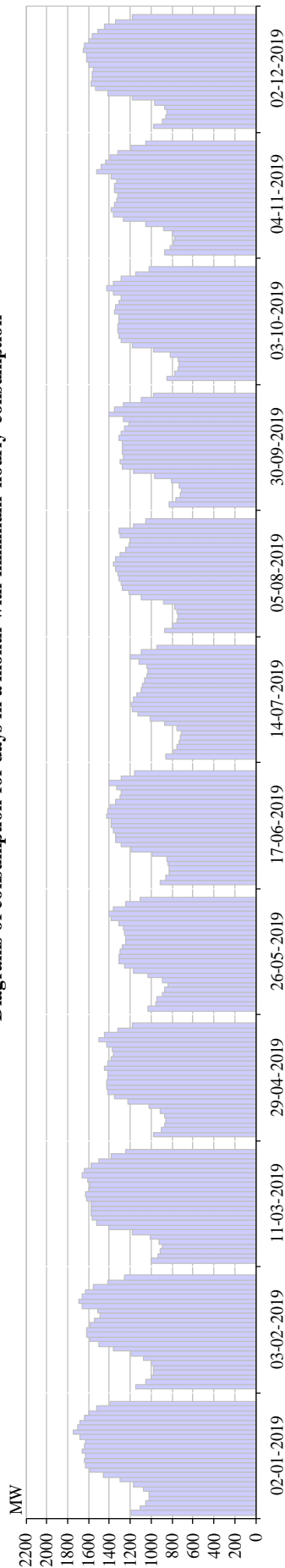


Diagram of consumption for days in a month with min hourly consumption

	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	1195	1101	1052	1023	1024	1070	1170	1295	1459	1586	1631	1641	1624	1657	1641	1625	1681	1742	1706	1678	1641	1593	1526	1390	34.750
February	1149	1054	1001	977	976	1003	1069	1189	1362	1505	1583	1621	1614	1584	1539	1491	1511	1663	1696	1662	1629	1557	1417	1255	33.108
March	997	938	909	895	923	1010	1182	1409	1523	1568	1570	1575	1578	1623	1624	1599	1581	1606	1656	1636	1580	1500	1384	1240	33.108
April	975	899	875	861	871	914	1023	1218	1349	1418	1428	1431	1419	1411	1443	1419	1388	1362	1378	1427	1496	1451	1315	1185	29.955
May	1034	956	940	887	866	838	896	1030	1169	1260	1306	1304	1294	1277	1241	1242	1257	1267	1308	1382	1400	1361	1243	1102	27.862
June	917	860	829	827	836	853	990	1186	1291	1337	1342	1366	1380	1387	1429	1418	1391	1336	1299	1288	1325	1407	1287	1160	28.740
July	864	786	751	731	720	709	749	869	1008	1131	1180	1191	1167	1138	1100	1080	1066	1043	1034	1044	1121	1199	1091	950	23.721
August	866	792	755	738	748	773	879	1090	1208	1272	1286	1307	1323	1337	1363	1343	1299	1244	1210	1198	1298	1310	1175	1051	26.865
September	824	759	726	714	732	806	970	1175	1271	1292	1269	1279	1273	1272	1304	1285	1254	1212	1262	1406	1352	1260	1099	977	26.775
October	848	772	742	732	746	814	978	1180	1283	1313	1316	1322	1312	1310	1354	1337	1310	1283	1356	1421	1367	1285	1145	1017	27.543
November	873	813	786	776	794	886	1054	1262	1364	1380	1348	1332	1318	1355	1353	1331	1384	1517	1478	1438	1391	1315	1193	1050	28.789
December	978	897	864	846	874	972	1182	1410	1538	1576	1561	1562	1550	1602	1619	1617	1655	1643	1598	1564	1515	1446	1338	1181	32.589

Diagrams of consumption on 3rd Wednesday in a month

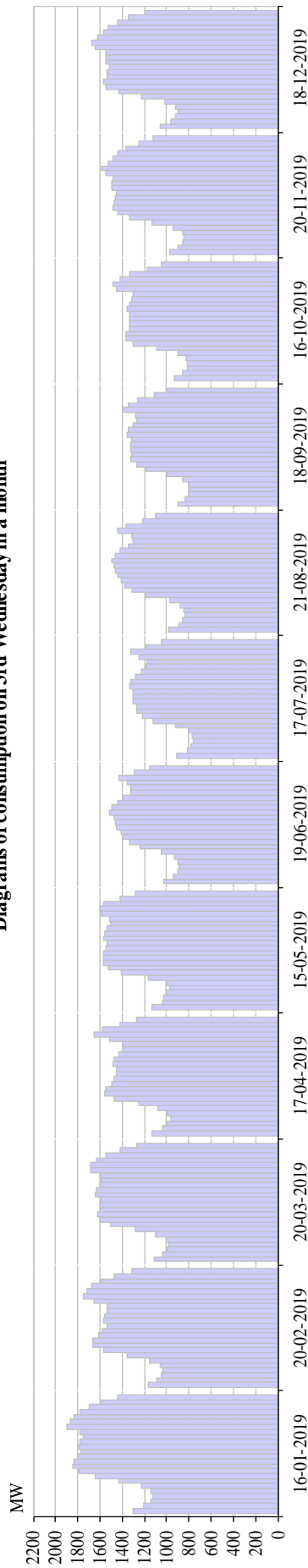


Diagram of consumption on 3rd Wednesday in each month

	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	1303	1204	1145	1125	1145	1228	1432	1647	1792	1840	1834	1805	1770	1794	1778	1745	1775	1899	1862	1829	1778	1699	1594	1438	38462
February	1166	1093	1051	1032	1059	1151	1354	1566	1663	1661	1610	1581	1538	1572	1562	1531	1535	1658	1751	1721	1670	1586	1469	1311	34892
March	1111	1039	992	987	1008	1102	1284	1501	1601	1621	1597	1601	1591	1639	1626	1599	1589	1602	1689	1685	1629	1550	1423	1268	34335
April	1127	1039	992	966	990	1078	1244	1472	1554	1546	1498	1473	1452	1446	1485	1470	1434	1399	1400	1514	1649	1579	1420	1271	32499
May	1131	1035	1030	1000	971	1005	1166	1404	1528	1572	1564	1568	1551	1531	1568	1553	1537	1506	1519	1588	1601	1566	1418	1276	33189
June	1027	944	901	891	898	930	1049	1242	1338	1394	1411	1448	1466	1470	1512	1489	1442	1386	1325	1318	1357	1433	1294	1150	30117
July	910	817	777	756	776	804	920	1120	1219	1270	1272	1297	1300	1305	1338	1320	1276	1223	1180	1177	1251	1320	1185	1052	26863
August	984	891	854	834	842	877	972	1189	1315	1380	1405	1437	1463	1472	1493	1462	1420	1343	1298	1317	1438	1366	1217	1096	29363
September	899	839	801	792	800	861	996	1185	1275	1322	1310	1325	1323	1309	1351	1344	1307	1272	1284	1383	1350	1255	1115	997	27693
October	934	854	816	809	821	902	1092	1298	1367	1368	1339	1338	1333	1331	1356	1337	1308	1301	1447	1481	1416	1330	1173	1049	28800
November	977	895	853	843	858	944	1131	1332	1443	1488	1468	1459	1448	1494	1496	1486	1550	1587	1527	1483	1437	1369	1254	1119	30940
December	1059	962	918	898	915	1018	1224	1431	1549	1570	1539	1532	1516	1549	1547	1544	1638	1673	1623	1572	1525	1444	1347	1201	32793

Diagrams of consumption for days in a month with maximum consumption

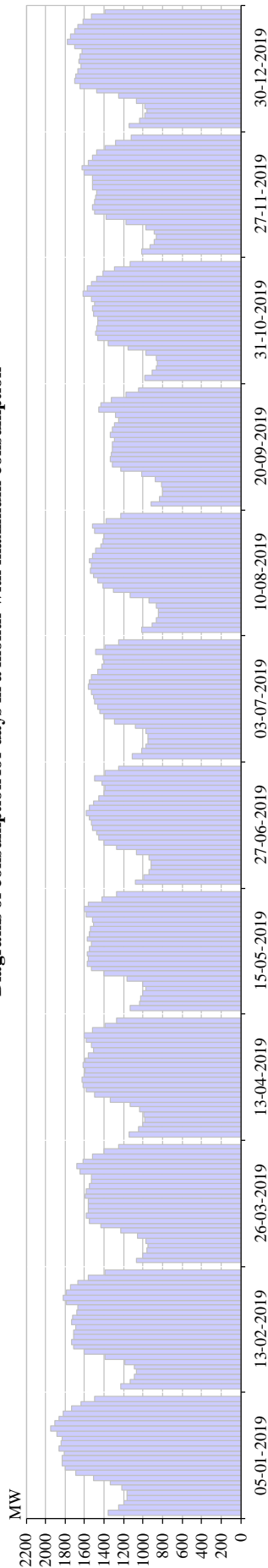


Diagram of consumption for days in a month with max daily consumption

	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	1355	1249	1192	1168	1169	1223	1336	1509	1685	1801	1833	1827	1804	1857	1843	1829	1883	1945	1903	1863	1817	1729	1636	1496	38.951
February	1228	1130	1087	1071	1090	1185	1388	1602	1715	1736	1716	1708	1693	1729	1720	1681	1669	1787	1824	1790	1746	1666	1562	1394	36.920
March	1064	998	964	948	972	1057	1224	1429	1546	1580	1560	1565	1557	1599	1587	1556	1529	1533	1644	1676	1616	1514	1397	1252	33.366
April	1139	1047	1000	984	990	1040	1131	1334	1498	1584	1618	1622	1609	1589	1614	1589	1558	1509	1524	1585	1609	1522	1391	1274	33.360
May	1131	1035	1030	1000	971	1005	1166	1404	1528	1572	1564	1568	1551	1531	1568	1553	1537	1506	1519	1588	1601	1566	1418	1276	33.189
June	1080	988	942	921	923	943	1069	1274	1399	1458	1476	1515	1534	1547	1586	1556	1510	1453	1405	1389	1418	1501	1392	1255	31.533
July	1114	1018	976	949	951	974	1082	1294	1403	1449	1468	1499	1504	1531	1564	1549	1525	1470	1419	1399	1414	1488	1389	1255	31.682
August	1017	912	867	845	846	865	937	1134	1299	1409	1466	1513	1536	1525	1553	1516	1488	1438	1412	1404	1498	1516	1379	1228	30.602
September	913	836	801	800	811	875	1017	1227	1313	1333	1324	1320	1310	1298	1332	1316	1293	1252	1278	1452	1430	1323	1172	1051	28.079
October	983	902	862	854	865	967	1158	1360	1466	1489	1471	1470	1464	1508	1520	1500	1527	1611	1575	1533	1480	1409	1297	1136	31.407
November	1016	931	885	867	883	973	1172	1379	1493	1514	1496	1487	1477	1521	1518	1524	1602	1622	1564	1518	1472	1393	1277	1120	31.705
December	1140	1038	978	963	979	1063	1254	1479	1645	1701	1690	1666	1632	1659	1643	1629	1702	1775	1744	1703	1664	1610	1533	1391	35.281

Diagrams of consumption for days in a month with minimum consumption

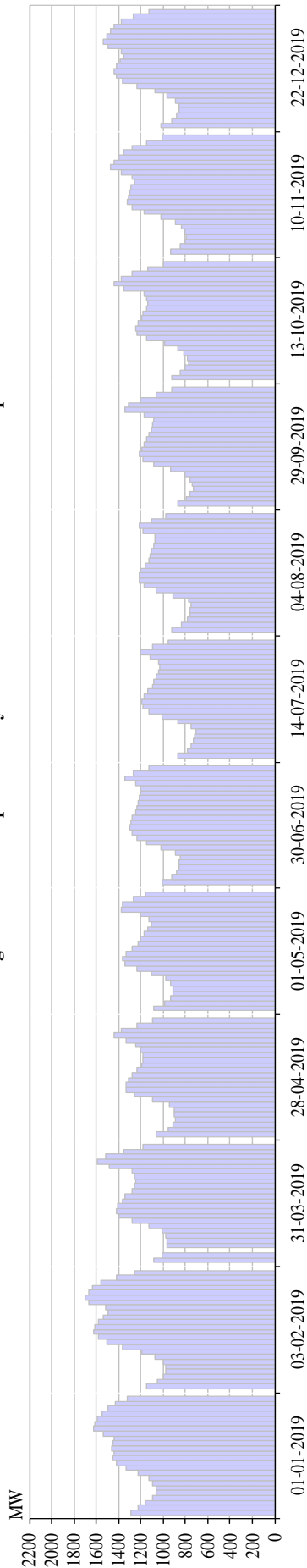


Diagram of consumption for days in a month with min. consumption

	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	1292	1229	1160	1096	1061	1060	1092	1125	1226	1329	1413	1449	1444	1464	1448	1442	1533	1626	1612	1588	1546	1494	1430	1317	32,478
February	1149	1054	1001	977	976	1003	1069	1189	1362	1505	1583	1621	1614	1584	1539	1491	1511	1663	1696	1662	1629	1557	1417	1255	33,108
March	1082	1009	964	964	965	980	1005	1122	1282	1392	1423	1403	1366	1338	1279	1261	1251	1252	1283	1483	1595	1517	1357	1185	28,793
April	1060	955	910	890	896	904	944	1091	1251	1330	1334	1309	1274	1233	1195	1182	1183	1204	1242	1329	1434	1374	1235	1095	27,854
May	1079	981	929	911	914	928	975	1105	1236	1337	1361	1336	1274	1220	1207	1172	1133	1109	1127	1199	1371	1364	1267	1158	27,693
June	1010	921	883	862	857	845	895	1022	1145	1237	1281	1295	1285	1277	1245	1234	1226	1215	1203	1202	1243	1340	1269	1122	27,113
July	864	786	751	731	720	709	749	869	1008	1131	1180	1191	1167	1138	1100	1080	1066	1043	1034	1044	1121	1199	1091	950	23,721
August	919	836	786	765	759	749	775	911	1062	1169	1211	1216	1199	1165	1128	1113	1104	1085	1070	1078	1182	1215	1102	980	24,579
September	867	794	756	733	737	758	801	933	1084	1183	1212	1195	1171	1148	1123	1104	1095	1089	1169	1344	1311	1207	1060	922	24,795
October	924	850	800	774	780	810	865	984	1145	1230	1248	1225	1189	1184	1153	1140	1152	1165	1348	1434	1376	1281	1138	1000	26,196
November	932	848	809	792	800	835	889	1019	1169	1279	1317	1315	1303	1289	1261	1279	1379	1472	1436	1399	1358	1275	1145	1007	27,605
December	1018	926	874	853	854	886	966	1077	1240	1365	1413	1435	1421	1382	1348	1371	1497	1542	1510	1468	1441	1371	1264	1124	29,644

NOMINATED SCHEDULE EXCHANGE BETWEEN BIH AND NEIGHBOURING POWER SYSTEMS

NOMINATED EXCHANGE	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	2019
	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh
BiH <- HR (HEP-OPS)	424,3	206,5	240,2	322,8	262,3	267,3	134,1	146,6	181,5	275,5	169,5	194,5	2.825,2
BiH <- SR (EMS)	114,5	109,3	250,2	265,3	114,0	166,2	142,9	64,6	60,5	114,6	90,9	28,2	1.521,1
BiH <- CG (EPCG)	33,0	42,8	59,5	19,7	59,6	50,1	31,4	52,1	37,6	12,4	47,4	87,3	532,9
(1) Import BiH	571,8	359,4	549,9	607,8	435,9	483,5	308,4	263,4	279,7	402,5	307,8	310,0	4.880,2
BiH -> HR (HEP-OPS)	283,9	343,6	398,0	287,6	269,2	366,6	238,8	269,1	207,1	208,2	295,9	357,0	3.524,9
BiH -> SR (EMS)	259,8	222,6	271,7	157,7	207,1	257,2	294,5	220,9	154,3	151,5	342,2	400,6	2.940,1
BiH -> CG (EPCG)	171,7	117,1	166,0	211,3	178,2	154,6	173,3	204,3	215,2	209,3	182,8	177,1	2.160,8
(2) Export BiH	715,5	683,3	835,6	656,6	654,5	778,3	706,7	694,3	576,6	568,9	820,9	934,7	8.625,8
(3) Balance BiH (2) - (1)	143,6	323,8	285,7	48,8	218,5	294,8	398,3	430,9	296,9	166,4	513,0	624,7	3.745,6
Balance HR (HEP-OPS)	-140,4	137,1	157,8	-35,2	6,9	99,3	104,7	122,4	25,6	-67,3	126,3	162,5	699,7
Balance SR (EMS)	145,4	113,3	21,5	-107,6	93,1	91,0	151,6	156,3	93,7	36,9	251,3	372,4	1.418,9
Balance CG (EPCG)	138,7	74,3	106,4	191,6	118,6	104,5	142,0	152,2	177,6	196,9	135,4	89,8	1.627,9
Transit	309,7	183,4	290,9	227,5	184,0	217,3	246,1	231,7	174,7	194,4	223,4	263,8	2.746,9
Domestic trade													

PHYSICAL EXCHANGE WITH NEIGHBOURING POWER SYSTEMS

PHYSICAL FLOWS	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	2019
	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh
BiH <- HR (HEP-OPS)	223,2	65,5	74,6	172,4	147,1	97,2	127,7	169,4	211,6	200,1	158,7	161,0	1.808,6
BiH<-SR (EMS)	68,3	73,0	262,0	113,1	50,8	56,7	33,9	27,0	25,6	87,8	15,0	8,4	821,6
BiH<-CG (EPCG)	29,6	27,4	26,4	7,5	13,3	24,8	14,7	17,9	14,0	7,7	7,5	4,0	194,8
(1) Import BiH	321,0	165,9	363,0	293,0	211,2	178,8	176,4	214,3	251,2	295,6	181,3	173,4	2.825,0
BiH -> HR (HOPS)	167,9	332,7	482,6	133,8	155,9	246,2	248,2	259,7	169,0	164,2	214,9	192,2	2.767,4
BiH -> SR (EMS)	64,7	38,1	25,6	55,4	104,1	74,2	88,0	93,6	113,9	57,3	163,1	206,9	1.084,9
BiH -> CG (CGES)	229,2	120,7	137,7	153,7	170,0	154,5	237,9	290,7	262,6	237,8	320,0	397,6	2.712,4
(2) Outside flows	461,8	491,5	646,0	342,9	430,0	475,0	574,0	644,1	545,4	459,3	697,9	796,7	6.564,7
(3) Balance (2) - (1)	140,8	325,6	283,0	49,9	218,9	296,2	397,7	429,8	294,3	163,7	516,6	623,3	3.739,8
Balance HR (HOPS)	-55,3	267,2	408,1	-38,6	8,9	149,0	120,4	90,3	-42,6	-35,9	56,1	31,2	958,8
Balance SR (EMS)	-3,6	-34,9	-236,4	-57,7	53,3	17,5	54,1	66,6	88,3	-30,4	148,1	198,5	263,3
Balance CG (CGES)	199,7	93,4	111,3	146,2	156,7	129,7	223,1	272,8	248,6	230,1	312,4	393,6	2.517,6

Deviation of BiH power system toward the interconnection in 2019

Month	Deviation - Power deficit			Deviation -Power 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	-60	-10	-4.068	68	8	2.785	68	-2	-1.283
February	-63	-8	-2.261	84	11	4.121	84	3	1.860
March	-65	-11	-4.160	51	9	3.315	-65	-1	-845
April	-186	-10	-2.836	52	8	3.253	-186	1	417
May	-44	-10	-3.128	61	8	3.300	61	0	172
June	-98	-11	-2.485	84	10	4.844	-98	3	2.359
July	-53	-9	-2.395	74	9	4.401	74	3	2.006
August	-85	-9	-3.253	64	9	3.266	-85	0	13
September	-71	-11	-4.390	171	8	2.338	171	-3	-2.053
October	-87	-12	-5.918	44	7	1.845	-87	-5	-4.073
November	-56	-8	-3.119	61	9	3.321	61	0	202
December	-111	-10	-4.007	39	6	2.073	-111	-3	-1.934
2019	-186	-10	-42.010	171	8	38.864	-186	0	-3.160