

SO UPS Operational Report 2021

7 Interconnected Power Systems (IPS) operated as part of the Russian UPS: IPS of Center, IPS of Middle Volga, IPS of Urals, IPS of North-West, IPS of South, IPS of Siberia and IPS of East.

Synchronized with UPS:

- power systems of Estonia, Latvia, Lithuania, Belarus, Ukraine, Georgia, Azerbaijan, Kazakhstan and Mongolia
- connected through Kazakhstan – Uzbekistan and Kyrgyzstan
- connected through Ukraine – Moldova

Power supply through AC transmission lines to:

- power system of South Ossetia
- power system of Abkhazia

Operations through back-to-back DC connection with:

- power system of Finland
- power system of China

Total installed capacity – 246,590.9 MW (increased by 1,277.65 MW)

Generation – 1,114.55 bln kWh

Consumption – 1,090.44 bln kWh

Peak demand – 161,418 MW (24 December), power plants load –165,640 MW

New peak demand records were set in 4 IPS and 15 Regional Power Systems (RPS).

52 transmission lines 220 kV and higher voltages were commissioned.

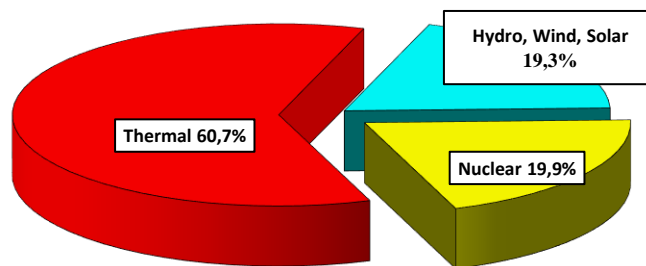
Power System	Total nominal capacity, MW	Thermal		Hydro		Nuclear		Wind		Solar	
		MW	%	MW	%	MW	%	MW	%	MW	%
UPS of Russia	246,590.90	163,097.07	66,14	49,954.82	20,26	29,542.99	11,98	2,035.40	0,83	1,960.62	0,79
IPS of Center	50,199.15	34,610.80	68,95	1,810.07	3,60	13,778.28	27,45	-	-	-	-
IPS of Middle Volga	27,477.90	16,155	58,79	7,020.50	25,55	4,072.00	14,82	85,40	0,31	145,00	0,53
IPS of Urals	53,472.27	49,617.93	92,79	1,913.69	3,58	1,485.00	2,78	1,65	0,00	454,00	0,85
IPS of North-West	24,758.14	15,656.41	63,24	2,960.84	11,96	6,135.79	24,78	5,10	0,02	-	-
IPS of South	27,166.01	13,833.68	50,92	6,305.74	23,21	4,071.92	14,99	1,943.25	7,16	1,011.42	3,72
IPS of Siberia	52,251.34	26,574.66	50,86	25,326.48	48,47	-	-	-	-	350,20	0,67
IPS of East	11,266.09	6,648.59	59,01	4,617.50	40,99	-	-	-	-	-	-

Generation capacity mix of IPS and UPS of Russia (as of 01.01.2022)

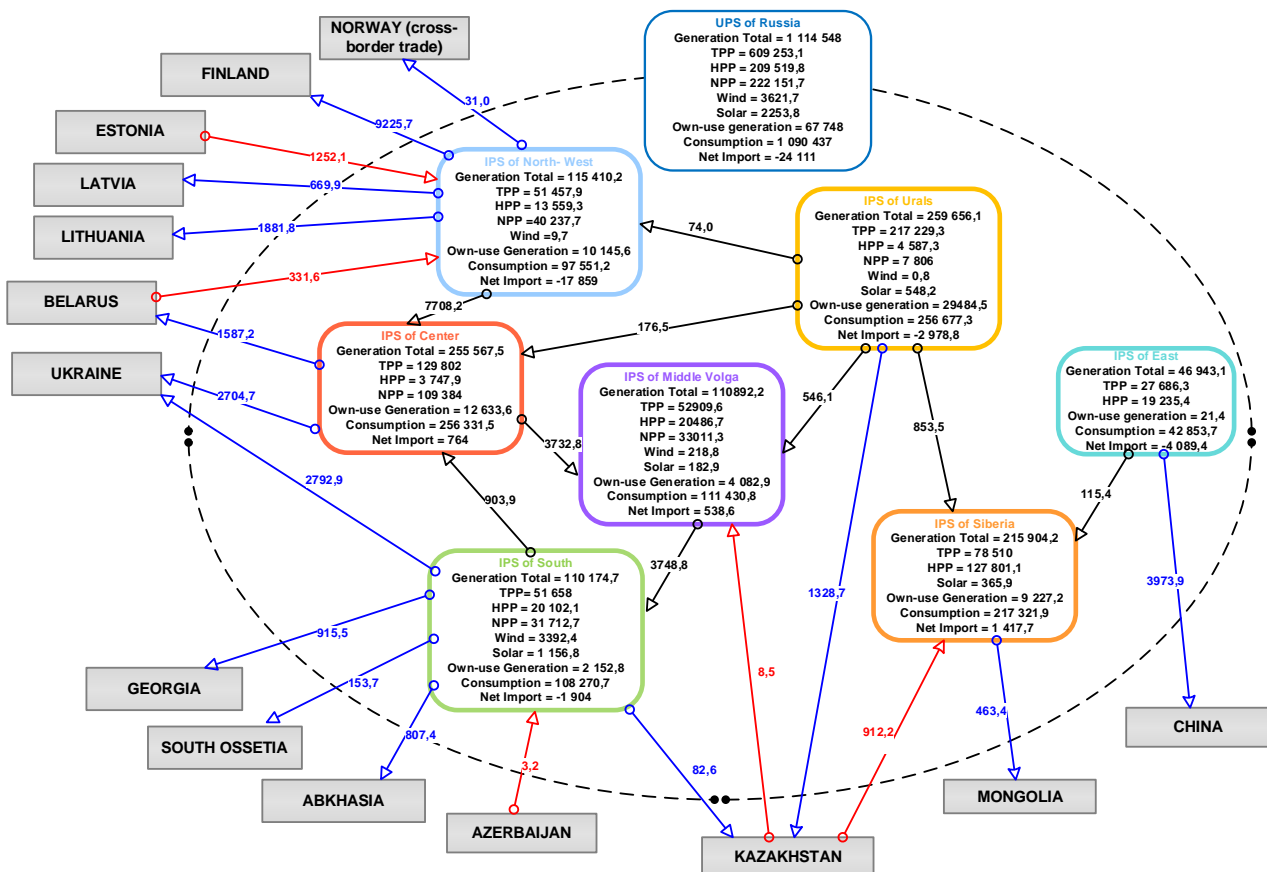
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Index	2021, mln kWh	2020, mln kWh	2021/2020 %
Generation, total	1,114 548.00	1,047 031.50	106,4
Incl.: Thermal	676,908.00	620,566.80	109,1
Hydro	209,519.80	207,416.30	101,0
Nuclear	222,244.80	215,682.10	103,0
Wind	3,621.70	1,384.10	261,7
Solar	2,253.80	1,982.30	113,7
Consumption	1,090 437.00	1,033 720.00	105,5
Net power flow «+» – in, «-» – out	-24,111.00	-13,311.50	

Generation for UPS of Russia in 2021 and 2020



Electric power generation structure by unit type



Cross-Border Interconnections (bln kWh) in 2021