

RusHydro Group announces 4Q and FY2019 operating results

January 30, 2019. Moscow, Russia. PJSC RusHydro (ticker symbol: MICEX-RTS, LSE: HYDR; OTCQX: RSHYY) announces operating results for the 4th quarter and full year ended December 31 2019, of the parent company and subsidiaries of RusHydro Group reflected in consolidated financial statements.

Key highlights of 2019

- **142,840 GWh – total electricity production (-1.0% y-o-y) including Boguchanskaya hydropower plant¹.**
- Solid results on the back of increased inflows to the reservoirs of the Volga-Kama cascade in 2H and to the reservoirs of HPPs in the Far East throughout the year aided by new capacity commissioning and modernization of existing facilities, increase in electricity consumption by 3.3% in the Far East.
- **6 hydropower plants have set new all-time high annual record outputs:** Boguchanskaya HPP (16,104 GWh), Bureyskaya HPP (7,341 GWh), Votkinskaya HPP (3,642 GWh), Kamskaya HPP (2,732 GWh), Ust-Srednekanskaya HPP (614 GWh) and Kubanskaya PSHPP (14.8 GWh).
- **94,525 GWh** – electricity output from hydro and pumped storage plants (-4.0% y-o-y).
- **31,779 GWh** – electricity output from thermal power plants (+0.1% y-o-y).
- **433 GWh** – electricity output from alternative renewable energy facilities (+0.5% y-o-y).
- **29,771 thousand Gcal** – heat output from thermal power plants (+0.4% y-o-y) driven by lower air temperatures in most Far Eastern Federal District's regions.
- **39,683.3 MW** – total installed electric capacity of RusHydro Group incl. Boguchanskaya HPP as of December 31, 2019 (**+297.2 MW** to 2018 following commissioning of Nizhne-Bureyskaya HPP and Sakhalinskaya GRES-2, decommissioning of Sakhalinskaya GRES and partial decommissioning of Yakutskaya GRES as well as capacity uprate following rehabilitation & modernization of equipment).
- **19,021.4 GCal/h** – total heat output capacity of the Group as of December 31, 2019 (**+98 Gcal** to 2018).
- **19,490 GWh** – sales by Group's electricity retail companies in 2019 (-3.9% y-o-y).
- **630 MW** - capacity connected to RusHydro Group's grids in the Far East (+8.2% y-o-y).
- **16,104 GWh** - electricity output from the Boguchanskaya HPP (+18.3% y-o-y)¹.

Key highlights of 4Q 2019 and hydrological situation

- **26,003 GWh** – electricity output from hydro and pumped storage plants (+18.8% to 4Q'19).
- **9,029 GWh** – electricity output from thermal power plants (no change to 4Q'19).
- **121 GWh** – electricity output from alternative renewable energy facilities (+4.0% to 4Q'19).
- As of January 1, 2020, water storage at reservoirs of the Volga-Kama cascade is 33% above the average level; at the reservoirs of the Far East and in the South of Russia – slightly above the normal level; at the reservoirs of Siberia – at the normal level.
- In the first quarter of 2020, water inflows to the reservoirs of the Volga-Kama cascade are expected to be 1.3-1.6x the normal level; to the reservoirs of Siberia – at the normal level or slightly above it.

Installed electric capacity of RusHydro Group

RusHydro Group's installed electric capacity increased following commissioning of Nizhne-Bureyskaya HPP (320 MW) and Sakhalinskaya GRES-2 (120 MW) in the Far East, decommissioning of Sakhalinskaya GRES (84 MW), partial decommissioning of Yakutskaya GRES (127 MW) and capacity uprate following rehabilitation & modernization (63 MW) and installation of solar panels at Nizhne-Bureyskaya HPP (1.3 MW).

	<i>MW</i>	Dec 31, 2019	Dec 31, 2018
Center of Russia HPPs /PSPPs		11,782.4	11,730.1
S. of Russia and N. Caucasus		2,946.0	2,946.0
Siberia		7,211.0	7,201.0
Total for price zones of Russia		21,939.4	21,877.0
HPPs of the Far East		5 597.6	5 277.6
RAO ES East		8 505.9	8 590.8
Geothermal PPs, RES		82.5	82.2
Total for non-price and isolated zones of Russia		14 186.0	13 950.6
HPPs in Armenia		561.4	561.4
TOTAL		37 030.6	36 389.1
incl. by HPPs, PSPPs ²		28 443.9	27 716.1
incl. by TPPs and other		8 505.9	8 590.8
incl. by geothermal, RES		82.5	82.2
Boguchanskaya HPP		2 997.0	2 997.0
TOTAL (incl. Boguchanskaya HPP)		39 683.3	39 386.1

Installed heat capacity of RusHydro Group

RusHydro Group's installed heat capacity increased following commissioning of peaking boiler plant at Yakutskaya GRES (300 Gcal/h).

	<i>GCal/h</i>	Dec 31, 2019	Dec 31, 2018
JSC DGK, incl.		12,813.4	12,813.4
Primorye power system		2,755.0	2,755.0
Khabarovsk power system		7,429.7	7,429.7
Amur power system		1,243.7	1,243.7
South-Yakutia power district		1,385.0	1,385.0
JSC RAO ES East (CHP Vostochnaya)		432.6	432.6
JSC DGK and JSC RAO ES East		13,246.1	13,246.1
Yakutsk power system, incl.		2,545.8	2,460.4
PJSC Yakutskenergo ³		1,726.2	1,613.2
JSC Sakhaenergo		84.9	84.9
JSC Teploenergoservice		734.7	762.3
Kamchatka power system, incl.		1,273.4	1,244.3
PJSC Kamchatskenergo		1,226.3	1,201.4
JSC KSEN		47.1	42.9
Magadan power system (PJSC Magadanenergo)		773.3	773.3
Chukotka AO power system (JSC Chukotenergo)		399.3	399.3
Sakhalin power system (PJSC Sakhalinenergo)		783.5	800.7
Total isolated and other power systems		5,775.3	5,677.3
TOTAL		19,021.4	18,923.4

Electricity generation by the plants of RusHydro Group

	GWh	4Q'19	4Q'18	chg, %	2019	2018	Chg, %
Center of Russia		13,002	8,854	46.8%	42,534	44,682	-4.8%
S. of Russia and N. Caucasus		1,030	1,345	-23.4%	6,528	7,447	-12.3%
Siberia		6,653	7,305	-8.9%	27,131	29,544	-8.2%
Total for the price zones		20,685	17,504	18.2%	76,193	81,673	-6.7%
Far East (HPP, geothermal)		4,681	3,567	31.9%	15,757	14,085	11.2%
RAO ES East Subgroup		9,752	9,914	-1.6%	34,362	34,464	-0.3%
Armenia		35	44	-22.2%	424	412	2.9%
TOTAL		35,153	31,030	13.3%	126,737	130,686	-3.0%
incl. by HPPs, PSPPs ²		26,003	21,882	18.8%	94,525	98,502	-4.0%
incl. by TPPs		9,029	9,030	0.0%	31,779	31,752	0.1%
Incl. by alt. renewables (geothermal, solar, wind)		121	117	4.0%	433	431	0.5%
<i>Boguchanskaya HPP¹</i>		<i>4,318</i>	<i>3,324</i>	<i>29.9%</i>	<i>16,104</i>	<i>13,610</i>	<i>18.3%</i>

The underlying factors of the production change in 2019 were:

- water inflows to the reservoirs of HPPs on the Volga-Kama cascade and Far East above the normal level;
- warm climate conditions and heavy rainfall in October-November resulted in water inflows to the reservoirs of the Volga-Kama cascade 2x above the normal level;
- water inflows to the reservoirs in Siberia at the long-run average;
- decrease electricity generation by thermal power plants in the Far East on the back of increased production of HPPs in UES of East by 10.2% as well electricity consumption growth in the Far Eastern Federal District by 3.3%;
- decrease of electricity sales to UES of Siberia and China by 99.1 GWh (-2.7%).

Center of Russia

In the beginning of 2019, hydropower plants of the Volga-Kama cascade were operating under the winter period regime of pre-flooding reservoir drawdown. The water reserves of the cascade's reservoirs are higher by 17% and by 28% as compared to the normal level and last year, respectively.

In the first quarter of 2018, inflow to most of the reservoirs on Volga and Kama was close to the normal level. Total water inflow to the reservoirs of the Volga-Kama cascade reached 24.9 km³ (normal level – 21.3 km³).

In the second quarter, water inflows to the reservoirs of the HPPs of the Volga-Kama cascade were predominantly below the normal level: inflows to Uglichskoye, Rybinskoye, Gorkovskoye and Nizhnekamskoye reservoirs were 20-40% below, inflows to Ivankovskoye, Cheboksarskoye and Saratovskoye reservoirs were 60% below, while inflows to Volgogradskoye reservoir were 80% below the normal level. At the same time inflows to Kuybishevskoye, Kamskoye and Votkinskoye reservoirs were at the normal level.

In the third quarter, water inflows to the majority of reservoirs on the Volga-Kama cascade were at the normal level. Inflows to Kuybishevskoye and Kamskoye reservoirs were 1.4 and 2.3 times the normal level, respectively on the back of rainfall flood. By the end of third quarter water storage at the reservoirs of the cascade were 18% above the normal level.

In the fourth quarter, water inflows to the reservoirs of the Volga-Kama cascade was above the normal level: inflows to Ivankovskoye, Gorkovskoye, Cheboksarskoye and

Nizhnekamskoye reservoirs were 1.3-2.4x the normal level, while inflows to Rybinskoye, Kuybishevskoye and Kamskoye reservoirs were 2.5-3.8x the normal level. In the fourth quarter, the hydropower plants of the Volga-Kama cascade were operating with increased debits. By the end of the quarter water storage at the reservoirs of the cascade were 32% above the normal level.

Total water inflow to the reservoirs on Volga and Kama in 4Q was 78.1 km³ or twice above the normal level. **Total electricity production by the hydropower plants of the Volga-Kama cascade and Zagorsksaya pumped storage in the fourth quarter of 2019 increased by 46.8% to 13,002 GWh, in 2018 production amounted to 8,862 GWh (-4.8%) as compared to 2018.**

South of Russia and North Caucasus

Water inflow to the reservoir of Chirkeyskaaya HPP in 1Q 2019 was 20% above the normal level. Average daily water inflow to the reservoir of Chirkeyskaaya HPP in the months of January and February 2019 was 75.7 m³. The HPP is operating under water economy regime to preserve high water level in the reservoir as water reserves in the snow deposits of the Sulak River are below the normal level.

In the second quarter of 2019, water inflow to Chirkeyskaaya HPP was close to the normal level. By the beginning of the third quarter water storage at the reservoirs of the HPPs of the Sulak cascade were 5% above the normal level and 4% above the level observed during the same period last year.

In the third quarter water inflow to the reservoir of Chirkeyskaaya HPP was 35% below the normal level. By the end of third quarter water storage at the reservoir was at the normal level.

In the fourth quarter, water inflow to the reservoir of Chirkeyskaaya HPP was 25% below the normal level. By the end of the quarter, water storage at the reservoir was 7% above the normal level.

In 4Q 2019, total electricity production by the hydropower plants in the South of Russia and North Caucasus decreased by 23.4% to 1,030 GWh as compared to the corresponding period last year, in 2018 production amounted to 1,340 GWh (-12.3%).

Siberia

Water inflow to the reservoirs on the rivers of Siberia in the first quarter of 2019 was higher than normal level by 15%.

In the second quarter of 2019 water inflows to Novosibirskoye and Sayano-Shushenskoye reservoirs was 20% below the normal level. By the end of the spring flooding season the reservoir was filled to the normal reservoir water surface of 113.5 m allowing enough water storage for the low water season as well as for upcoming heating season.

Water inflow to the Sayano-Shushenskoye reservoir in the second quarter was 30% below the normal level as low air temperatures delayed the start of spring flooding. By the end of June inflows increased significantly following extra rainfall and snowmelt in the mountains allowing filling the reservoir up to the normal level.

In the third quarter of 2019, water inflow to Novosibirskoye reservoir was 20% above the normal level, to Sayano-Shushenskoye reservoir – 15% above the normal level. At Sayano-Shushenskoye reservoir following extended cold front, flooding season shifted to the summer before transitioning to rainfall flood allowing filling of the reservoir under normal conditions. Starting from August 16, additional water was discharged through spillways. In the third quarter, the HPP operated under maximum capacity for the first time in its history. This became possible thanks to effective coordination with the System Operator.

In the fourth quarter of 2019, water inflows to Sayano-Shushenskoye and Novosibirskoye reservoirs were 20% above the normal level. By the end of the quarter, water storage at the reservoir was at the normal level.

Overall electricity production by the hydropower plants in Siberia decreased by 8.9% in 4Q 2019 to 6,653 GWh, in 2019 production amounted to 27,131 GWh (-8.2%). Boguchanskaya HPP produced 4,318 GWh in 4Q 2019 and 16,104 GWh in 2019 - an increase of 29.9% and 18.3% over the corresponding period last year respectively.

Far East

In the first quarter of 2019, water inflow to Kolymskoye and Zeyskoye reservoirs was 25-40% above the normal level. Water inflow to the cross section of Bureyskaya HPP decreased following a landslide that occurred in December of 2018. The situation has been restored in February 2019 following formation of an outlet. Since then 1.16 km³ of water has entered the segment of the reservoir adjacent to the dam. In the first quarter of 2019, the facility was operating under normal conditions, in the pre-flooding reservoir drawdown regime.

In 2Q 2019, water inflow to Kolymskoye reservoir was 35% above the normal level while inflow to the Zeyskoye reservoir is below the normal level. Inflow to the Bureyskoye reservoir was 60% above the normal level. Up to 50% of the inflow was accumulated in the reservoir.

In 3Q 2019, water inflow to Kolymskoye and Zeyskoye reservoirs was 90% and 20% above the normal level, respectively. In July, the water level on Kolyma River was well above the normal level and the reservoir was quickly filled to the normal water surface level. Flood on the Kolyma River began in August. While short, it was very powerful as the peak inflow on August 6 was measured at 11,414 m³/sec. Such inflow occurs once in every 1,000 years. Optimal reservoir regime control, allowed to decrease the flood's peak by 40% reducing its effect on the lower Kolyma. In the Amur region, following substantial rainfall, emergency situation was introduced. On Zeyskaya HPP, the extra water inflows from the flooding were accumulated in the reservoir. On July 23, at the peak of the flooding average daily inflow was measured at 11,510 m³/sec with only 732 m³/sec discharged from the spillway at the HPP. Effective operation of Zeyskaya HPP prevented significant flooding in the region.

In 4Q, water inflow to Zeyskoye and Kolymskoye reservoirs was 40-60% above the normal level. By the end of the quarter, water storage at the reservoirs was slightly above the normal level.

Total electricity generated by hydro and geothermal power plants in the Far East (not included in the RAO ES East subgroup) increased by 31.9% in the fourth quarter of 2019 and by 11.2% in 2019 to 4,681 GWh and 15,757 GWh respectively against the same periods last year.

Total electricity generated by RAO ES East subgroup in the fourth quarter of 2019 amounted to 9,752 GWh, a decrease of 1.6% as compared to the same period last year. JSC Far Eastern Generating Company's (DGK) share of electricity generated was 73% or 7,109 GWh, a decrease of 4.1% against the same period last year. Production increase of HPPs located in UES of East by 26.8%, increase in electricity consumption by 6.2% to 14,075 GWh as well as decrease in electricity sales to UES of Siberia by 85.1% to 22.7 GWh were the main drivers behind the decline.

In 2019, total electricity generation by RAO ES East subgroup decreased by 0.3% to 34,367 GWh as compared to 2018. Decrease is primarily driven by RusHydro's HPP production increase in UES of East by 10.2% and growth of electricity consumption in the Far East Federal District by 3.3% to 48,582 GWh. In 2019 electricity sales to UES of Siberia and China decreased by 2.7% to 3,511 GWh as compared to 2018.

Heat output by thermal plants of RAO ES East Subgroup in the fourth quarter of 2019 increased by 7.2% to 10,803 GCal as compared to the corresponding period last year. The increase came on the back of lower air temperatures across all regions with the exception of Chukotka Autonomous Okrug. **In 2019 heat output increased by 0.4% against 2018 to 29,770 GCal.** The increase came on the back of lower air temperatures across all regions with the exception of Sakhalin and Chukotka Autonomous Okrug.

Heat output by thermal plants of RAO ES of the East Subgroup

	'000 GCal	4Q'19	4Q'18	chg, %	2019	2018	chg,%
JSC DGK, incl.		7,414	7,072	4.8%	20,079	20,858	-3.7%
Primorye power system		1,413	1,351	4.5%	4,070	4,729	-13.9%
Khabarovsk power system		4,327	4,114	5.2%	11,709	11,776	-0.6%
Amur power system		930	852	9.1%	2,354	2,322	1.4%
South-Yakutsk power district		744	754	-1.3%	1,947	2,030	-4.1%
JSC RAO ES East (CHP Vostochnaya)		244	-	-	809	-	-
JSC DGK and JSC RAO ES East		7,658	7,072	8.3%	20,888	20,858	0.1%
Yakutsk power system, incl.		1,483	1,369	8.3%	3,794	3,732	1.7%
PJSC Yakutskenergo ³		1,005	887	13.4%	2,560	2,425	5.6%
JSC Sakhaenergo		24	27	-10.3%	73	82	-11.2%
JSC Teploenergoservice		454	455	-0.3%	1,161	1,225	-5.3%
Kamchatka power system, incl.		638	626	1.9%	2,000	1,974	1.3%
PJSC Kamchatskenergo		610	597	2.2%	1,920	1,895	1.3%
JSC KSEN		28	29	-3.3%	80	79	0.9%
Magadan power system		406	386	5.0%	1,220	1,201	1.6%
Chukotka AO power system		127	134	-5.6%	414	415	-0.3%
Sakhalin power system		491	489	0.5%	1,454	1,469	-1.0%
Total isolated and other power systems		3,145	3,004	4.7%	8,882	8,791	1.0%
TOTAL		10,803	10,076	7.2%	29,770	29,649	0.4%

Armenia

Electricity generation by the Sevan-Hrazdan cascade of hydropower plants in Armenia in the fourth quarter of 2019 decreased by 22.2% to 35 GWh, in 2019 – increased by 2.9% to 424 GWh as compared to the corresponding period of last year. The power generation by

the plants of the cascade is dependent on water inflows of the Hrazdan river and water discharge from Sevan Lake.

Electricity retail

Total electricity output by RusHydro Group's energy retail companies in 4Q 2019 was in line with 4Q 2018 at 14,126 GWh, in 2019 electricity output amounted to 49,506 GWh, a decrease of 1.6% as compared to the corresponding period last year. The decrease came mainly on the back of climate factor as well as termination of supply agreements with customers.

Total electricity output by RusHydro's retail companies, operating in Chuvashia, Ryazan and Krasnoyarsk regions in the fourth quarter of 2019 decreased by 2.4% to 5,436 GWh as compared to 4Q'18. In 2019, total output decreased by 3.9% as compared to 2018 to 19,490 GWh. Increase in output at ESC RusHydro is driven by new supply agreements as well as increase in electricity consumption by JSC Polyus Krasnoyarsk and Yandex DC Vladimir LLC.

Electricity output by PJSC DEK (energy retail company operating in the Primorskiy Krai, Khabarovskiy Krai, Amur region and Jewish Autonomous region, the main supplier of electricity to the population in the second non-price zone of the wholesale energy market) in the fourth quarter of 2019 amounted to 6,214 GWh, an increase of 5.0% as compared to 4Q'18. Favorable performance is primarily driven by increase in consumption by industrial consumers and households. In 2019 electricity output increased by 1.6% to 21,240 GWh as compared to last year as a result of increase in consumption by industrial consumers.

Total electricity output by RusHydro's companies located in the isolated energy systems in the Far East Federal District amounted to 2,476 GWh in 4Q 2019, a decrease of 4.0% as compared to the same period last year. In 2019 total electricity output decreased by 3.9% to 8,776 GWh as compared to the same period last year.

Electricity output by RusHydro Group's retail companies, GWh

	<i>GWh</i>	4Q'19	4Q'18	chg, %	2019	2018	chg, %
PJSC Krasnoyarskenergosbyt		3,360	3,485	-3.6%	11,880	12,611	-5.8%
JSC Chuvash retail company		923	937	-1.5%	3,323	3,369	-1.4%
PJSC Ryazan retail company		671	716	-6.4%	2,449	2,650	-7.6%
JSC ESC RusHydro		482	429	12.3%	1,788	1,643	8.9%
Total		5,436	5,567	-2.4%	19,490	20,273	-3.9%
<i>PJSC DEK (for reference)</i>		<i>6,214</i>	<i>5,918</i>	<i>5.0%</i>	<i>21,240</i>	<i>20,913</i>	<i>1.6%</i>
<i>Isolated energy systems (for reference)</i>		<i>2,476</i>	<i>2,580</i>	<i>-4.0%</i>	<i>8,776</i>	<i>9,131</i>	<i>-3.9%</i>
Total by Group		14,126	14,065	0.4%	49,506	50,317	-1.6%

Power transmission and grid connection

Total power transmission and distribution via RusHydro Group's electricity grids in the Far East decreased by 0.4% to 35,283.8 GWh, 25,046.1 GWh of which was distributed by the largest grid operator in the Far East – JSC DRSK.

Total capacity connections to RusHydro Group's grids in 2019 amounted to 630 MW as compared to 582 MW in 2018 despite the 7% decrease in technical connection agreements. Favorable performance is driven by industrial production growth as well as growth of

medium and large businesses as consumers' with capacity above 670 kW desire to increase maximum available capacity.

In 2019, RusHydro Group's companies have entered into grid connection agreements with the following consumers:

- Solntsevsky Coal Mine LLC (Sakhalin), maximum capacity of 25 MW;
- East Mining Company LLC (Sakhalin), maximum capacity of 19 MW;
- Amursk POX hub (Amur region), maximum capacity of 51 MW;
- Teutedzhak Mine LLC (Magadan region), maximum capacity of 25 MW;
- JSC Zhatayskaya Shipyard (Sakha Republic (Yakutia)), maximum capacity of 8.5 MW.

Water inflows forecast

According to the forecast of the Hydrometeorology Center of Russia, the following dynamics of water inflows to the major reservoirs are expected in the 1st quarter of 2020:

- Total water inflows to the majority of reservoirs on Volga and Kama are expected to be 1.3-2.1x the long-run average;
- Inflows to the reservoirs in Siberia are expected to be close to or slightly above the long-run average;
- Inflows to Chirkeyskiye reservoir in North Caucasus are expected to be 10-25% below the long-run average;
- Inflows to Zeyskoe and Kolymskoye reservoirs in the Far East are expected to be 1.6-1.9x the long-run average.

¹ The Boguchanskaya hydropower plant is part of the Boguchanskiy Energy and Metals Complex (BEMO), a 50/50 joint venture (JV) between RusHydro and UC RUSAL, and is not part of RusHydro Group. According to RusHydro's shareholding in the JV (50%), the results of the plant are reported in the official financial statements in "Share of results of associates and jointly controlled entities". Operations of the HPP have been put into the press-release for general reference.

² Includes generation by HPPs of JSC RusHydro, Kolymskaya HPP and Viluiskie HPPs, part of RAO ES East Subgroup.

³ Prior to 2019 PJSC Yakutskenergo was operating in isolated power system, since 2019 the west and central power districts became a part of UES of East

About RusHydro

RusHydro Group is the leading producer of renewable energy in Russia. It is Russia's largest generating company and is the fourth in the world with over 400 generating facilities in Russia and Armenia.

Russian Federation owns 61.2% in RusHydro, the rest is held by other institutional and individual shareholders (over 360,000). The company's stock is traded on the Moscow Stock Exchange. Company's GDRs in the IOB section of LSE, ADRs – in OTCQX.

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