

DIGITAL SUBSTANTIONS

110/10 kV substation named after M.P. Smorgunov (IDGC of Siberia) has been operating for more than a year in Solontsy village in Krasnoyarsk Region.

THE SUBSTATION WAS ONE OF THE MOST IMPORTANT INVESTMENT PROJECTS OF IDGC OF SIBERIA TO IMPROVE THE RELIABILITY AND QUALITY OF CAPACITY SUPPLY, WHICH WILL OCCUR DUE TO THE HIGH DEGREE OF AUTOMATION AND CONTROLLABILITY OF EQUIPMENT.

The main task of the new substation is the capacity supply of low-rise construction in the area, as well as one of the largest multifunctional shopping complex beyond the Urals. The planned volume of sales of electric capacity will be 79,800 kWh in 2018.

Completion of work at Molodezhnaya the second digital substation will increase observability, controllability, reduce commercial and technical losses of electricity, increase reliability and reduce SAIDI SAIFI. The launch of the Molodezhnaya is scheduled for the summer of 2019. It will supply electricity to most of the city center. Krasnoyarsk will be the first Russian city with two digital substations. In addition, 14 more digital projects are at various stages of implementation, and more than 2.8 billion rubles will be allocated for implementation by 2022.

14 > 2.8

digital projects

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bln rub.

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Loss minimization

Actual losses of electricity in 2017-2018

Name of S&A	Losses of electricity							
	2017			2018		Pulling		
	mln Kwh	%	% in comparable conditions	mln Kwh	%	mln Kwh	pct	
Altay Region (Altaienergo)	542.71	7.17	7.17	541.91	7.07	-7.55	-0.10	
Republic of Altay (Gorno-Altayskiye Capacity Grids)	82.81	15.62	15.62	83.01	15.23	-2.14	-0.39	
Republic of Buryatia (Buryatenergo)	299.57	6.74	7.26	321.44 ¹	7.14	-5.23	-0.12	
Krasnoyarsk Region (Krasnoyarskenergo)	1,633.05	11.59	11.59	1,609.14	11.18	-59.11	-0.41	
Kemerovo Region (Kuzbassenergo-RES)	692.17	4.29	4.29	642.90	3.97	-52.26	-0.32	
Omsk Region (Omskenergo)	645.70	7.51	7.51	605.70	6.85	-58.37	-0.66	
Republic of Khakassia (Khakasenergo)	229.99	3.20	8.05	209.71 ²	7.10	-28.19	-0.95	
Zabaikalye Region (Chitaenergo)	614.96	9.85	9.85	582.82	9.38	-29.45	-0.47	
PJSC IDGC of Siberia	4,740.97	7.32	7.88	4,596.62	7.50	-234.27	-0.38	

The actual losses of electricity in the electric networks of PJSC IDGC of Siberia following the results of 2018 amounted to 4,596.62 mln kWh or 7.50% of the supply to the network. Smart metering devices were installed and unaccounted consumption was detected to reduce energy losses in 2018. These measures resulted to lower losses:

- From the business plan by 0.27% (168.02 mln kWh)
- From 2017 in comparable conditions by 0.38% (234.27 mln kWh)

Scope of measures to lower the electricity losses

Name of branch / IDGS	Smart devices setup, thsd pcs.	The volume of identified unaccounted consumption, included in the scope of provided services, mln KWh
Altay Region (Altayenergo)	12.0	8.6
Republic of Altay (Gorno-Altayskiye Capacity Grids)	2.5	2.1
Republic of Buryatia (Buryatenergo)	13.5	8.7
Krasnoyarsk Region (Krasnoyarskenergo)	25.9	257.3
Kemerovo Region (Kuzbassenergo – Regional Electric Grids)	38.1	1.4
Omsk Region (Omskenergo)	15.0	15.2
Republic of Khakassia (Khakasenergo)	14.0	33.6
Zabaikalye Region (Chitaenergo)	10.7	21.8
PJSC IDGS of Siberia	131.7	348.7

1. The comparability of electric energy balance indicators in 2018 compared with the conditions of 2017 was influenced by the consolidation of the networks of Kabansky District Municipality (Babushkin) and PJSC Buryatzoloto, the productive supply of 23.1 mln kWh

2. Comparability of electric energy balance indicators in 2018 compared with conditions of 2017 was affected by exclusion of the "last mile" volume, grid release and net release of 4,341.5 mln kWh