

**Evergreen list of consolidated needs to restore Ukraine's energy infrastructure**  
**Liste permanente des besoins consolidés pour restaurer l'infrastructure énergétique de l'Ukraine**

**Green highlighted equipment denotes highest priority - Les équipements surlignés en vert sont les plus prioritaires**

Item No.	Item name and specification	Unit	Quantity	Note
1	2	3	4	5
1.	Generator ТГВ-200	pcs	2	
2.	Autotransformer АДЦТН-200000/330/110-74У	pcs	2	
3.	Voltage transformer ЗНОМ-35-65У1	pcs	3	
4.	35 kV surge arrester PEXLIM R 48-YV 036, pcs	pcs	3	
5.	35 kV disconnect switch РНД3.2-35/1000, 3-phase set	pcs	1	
6.	330 kV surge arrester PEXLIM P 276-XH 362, 3-phase set	pcs	1	
7.	Hydro unit No. 5 (oil head, upper bracket, stator, rotor, winding)	pcs	1	50 MW
8.	Hydro generator No.5 excitation system	pcs	1	50 MW
9.	Hydro generator No.6 excitation system	pcs	1	50 MW
10.	Block No.3 control system (HU Nos. 5, 6)	pcs	1	100 MW
11.	Block No. 3 oil pressure device (HU Nos. 5, 6)	pcs	1	100 MW
12.	SF6 block circuit-breaker BT-5 GL-312F1	pcs	1	
13.	Transformer disconnecter T-5 three-phase 600A S2DAT	pcs	1	
14.	Single-phase current transformer IMB 123 Block No.5	pcs	3	
15.	Single-phase current transformer IMB 123 Block No.4	pcs	1	
16.	Block No.5/ 3PY-6,3kV/ Hydromechanical protections, control, signalization Г-17-20	pcs	12	
17.	Block No.5/ 3PY-6,3kV/ SCADA block control system	pcs	2	
18.	Power transformer ГТ15-16	pcs	1	280 MVA
19.	Circuit-breaker EB ГТ 13-14	pcs	1	
20.	Circuit-breaker EB ГТ 15-16	pcs	1	
21.	Circuit-breaker EB ГТ 17-18	pcs	1	
22.	Surge arrester ГТ 13-14	pcs	1	
23.	Surge arrester ГТ 15-16	pcs	1	
24.	Surge arrester ГТ 17-18	pcs	1	
25.	Surge arrester Л-2	pcs	1	
26.	Disconnecter Л1-02	pcs	1	
27.	Disconnecter Л2-01	pcs	1	
28.	Disconnecter Л2-02	pcs	1	
29.	Voltage transformer ТН Л2	pcs	1	
30.	Current transformer ГТ13-14	pcs	1	
31.	Current transformer ГТ15-16	pcs	1	
32.	Current transformer ГТ17-18	pcs	1	
33.	DC panel ВУ1, ВУ2, ВУ3	pcs	1	

Item No.	Item name and specification	Unit	Quantity	Note
34.	IT 13-14 block monitoring and control system	pcs	1	
35.	IT 15-16 block monitoring and control system	pcs	1	
36.	IT 17-18 block monitoring and control system	pcs	1	
37.	Autotransformer 330 kV Three-phase Power - 200 MVA LV/CH/IL voltages - 330/110/35 kV	pcs	1	ATDTN - 200000/330/110/35 ZTR
38.	Voltage transformer 330kV Rated voltage - 330 kV	phase	3	SVS 362 Trench (Siemens)
39.	Voltage transformer 330kV Rated voltage - 330 kV	phase	3	SVS 362 Trench (Siemens)
40.	Voltage transformer 110kV Rated voltage - 110 kV	phase	3	SVS 123 Trench (Siemens)
41.	Circuit breaker 110 kV Rated voltage - 110 kV Rated current - 2000A Current off. Short-circuit current - 50 kA	3 phase set	1	Siemens 3AP1FG145
42.	Current transformer 110kV Rated voltage - 110 kV Transformation ratio - 1000- 2000/5 Accuracy class - 0.2S/0.2S/10P/10P/10P/10P	3 phase set	1	SAS-123 Siemens
43.	Discharge arrester 330 kV Rated voltage - 330 kV	3 phase set	1	3EL2-288-3PM42-4NA Siemens
44.	Autotransformer 330 kV Three-phase Power - 200 MVA HV/LV/LI voltages - 330/110/6 kV	pcs	1	ATDTN -200000/330/110/6 ZTR
45.	Autotransformer 330 kV Three-phase Power - 200 MVA HV/LV/LI voltages - 330/110/6 kV	pcs	1	ATDTN -200000/330/110/6 ZTR
46.	Autotransformer 330 kV Three-phase Power - 200 MVA HV/LV/LI voltages - 330/110/6 kV	pcs	1	ATDTN-200000/330/110/6 3TP
47.	Current transformer 150 kV Gas-insulated Rated voltage - 150 kV Transformation ratio - 1200/5 Accuracy class - 0.2S/10P/10P/10P	phase	3	TG 170 HITACHI-ABB
48.	Voltage transformer 150kV Rated voltage - 150 kV	phase	3	SVS 170 Trench (Siemens)
49.	Autotransformer 750 kV Single-phase Rated capacity - 333000 kVA HV/MV/LV voltages - 750/330/15.75 kV	phase	1	AODTsTN333000/750/330 ZTR
50.	Autotransformer 330 kV Three-phase Capacity - 125 000 kVA HV/MV/LV voltages - 330/110/10 kV	pcs	1	ATDTN -125000/330/110/10 ZTR
51.	Regulating transformer 35 kV Three-phase Power - 40 000 kVA HV/LV voltages - 11/11±10x1.5% kV	pcs	1	LTDN-40000/10 ZTR
52.	Bushing 110 kV 110 kV 800A bushing type BRIT R-110-550\800 No. KN 1.9.005-RY Rated voltage - 110 kV <sup>SEP</sup> Rated current - 800A	pcs	2	EBRGL-126-800-2360
53.	Autotransformer 330 kV Type ATDTN-200000/330/110/10, three-phase, capacity - 200 000 kVA HV/MV/LV voltages - 330/110/10 kV	set	1	ATDTN -200000/330/110/10 ZTR
54.	Autotransformer 330 kV Type ATDTN-200000/330/110/10, three-phase, capacity - 200 000 kVA HV/MV/LV voltages - 330/110/10 kV	set	1	ATDTN -200000/330/110/10 ZTR
55.	Voltage transformer 330 kV Type TEMP-362 Gas-insulated anti- Resonant Nominal voltage - 330000/ $\sqrt{3}$ / 100/ $\sqrt{3}$ / 100 / 100/ $\sqrt{3}$ Power of secondary	pcs	3	

Item No.	Item name and specification	Unit	Quantity	Note
	windings not less than 100VA			
56.	Autotransformer 330kV 21Type ATDTTN-250000/330/110/35, three-phase, capacity - 250 000 kVA HV/MV/LV voltages - 330/150/35 kV	set	1	ATDTSN -200000/330/150/35 ZTR
57.	Circuit breaker 750 kV Type LTB-800E-4000-40 Rated voltage - 750 kV Rated current - 4000A Current disconnect. Short- circuit current - 40 kA	3 phase set	2	
58.	Voltage transformer 750 kV Type NDE-750-72U1 Gas-insulated anti- resonant Nominal voltage - 750000/ $\sqrt{3}$ / 100/ $\sqrt{3}$ / 100 / 100/ $\sqrt{3}$ Power of secondary windings not less than 100VA	pcs	6	
59.	Circuit breaker 750 kV Rated voltage - 750 kV Rated current - 4000A Current off. Short-circuit current - 40 kA gas-insulated	set	1	
60.	Current transformer 750 kV Gas-fired Rated voltage - 330 kV Transformation ratio - 4000-3000- 2000-1500/1 Accuracy class - 0.2S/0.2S/5P/5P/5P/5P	phase	1	
61.	Disconnecter 750 kV Unom - 750 kV In - 3150A with one earthing switch	3 phase set	1	
62.	Surge arrester 750 kV Rated voltage of the arrester (Ur) - 612 kV <sup>SEP</sup> Line discharge class - 2	3 phase set	1	
63.	Turbogenerator - TVF-120-2-U3	pcs	1	
64.	Thyristor excitation system for the turbine generator type SVTG-3.85/375-1KS2T2.5-AR24-UHL4	pcs	1	
65.	A set of panels of electrical protection and automation based on PM RPA "Diamant"	pcs	1	
66.	Conductor of generator type IPB-AI-E-15, 75-8000-460-UHL1	pcs	1	
67.	Transformer type TRDNS-25000/10	pcs	1	
68.	Measurement and control equipment & automatics (type and quantity to be specified)	pcs	1	
69.	Measurement and control equipment & automatics (type and quantity to be specified)	pcs	1	
70.	SF6 Circuit Breaker type GL-312 F1/4031	pcs	1	
71.	Current transformer type TFZM -123 II-IV U1	pcs	1	
72.	Disconnecter type (SDF 145/1600)	pcs	1	
73.	Single-pole earthing knife of transformer type ZON-110M-I UHL1	pcs	1	
74.	Power unit transformer 250 MVA 220 kV / 15.75 kV	pcs	2	
75.	Power unit transformer 250 MVA 330 kV / 15.75 kV	pcs	1	
76.	Autotransformer 240 MVA / 330 kV / 220 kV / Yauto/d-11	pcs	1	
77.	Autotransformer 210 MVA / 400 kV / 330 kV / Yauto/d-11	pcs	3	
78.	Autotransformer 133 MVA / 400 kV / 220 kV / Yauto/d-11	pcs	1	
79.	Autotransformer 250 MVA / 330 kV / 150 kV	pcs	2	
80.	Power unit transformer 400 MVA /154 kV / 20 kV	pcs	1	
81.	Power unit control system + TCS + turbine excitation system	pcs	2	
82.	Power unit transformer 250 MVA / 150 kV / 18 kV	pcs	1	
83.	Autotransformer 400 MVA / 330 kV / 150 kV	pcs	2	
84.	Generator 200 MW	pcs	2	
85.	Generator 300 MW	pcs	1	
86.	Turbine 300 MW	pcs	1	

Item No.	Item name and specification	Unit	Quantity	Note
87.	Generator 300 MW	pcs	2	
88.	Turbine 300 MW	pcs	1	
89.	Frequency converters	units	700	
90.	Network pumps	units	775	
91.	Heat exchangers	units	40	
92.	Cogeneration	units	44	32 MWe
93.	Container boiler houses	units	4	52 MWt
94.	Pre-insulated pipes and complementing products	m	5400	
95.	Pre-insulated pipes	m	2770	7 segments
96.	Steel pipes	m	85 000	
97.	Valves	units	7500	
98.	Technical salt	tones	11	
99.	Specialized trucks	units	82	
100.	Transformer oil Shell Diala S4 ZX-1	tons	200	
101.	Generator ТГВ-200	psc	2	
102.	Generator ТГВ-200М	psc	1	
103.	330 kV autotransformer АДЦТН-125000/330/110-77У1	psc	1	
104.	110 kV transformer bushing	psc	3	
105.	Overhead crane	psc	2	
106.	Electric motor 1500 rpm, 200 kW	psc	2	
107.	Electric motor 1500 rpm, 100 kW	psc	2	
108.	Electric motor 1500 rpm, 21 kW	psc	2	
109.	Electric motor 1500 rpm, 11 kW	psc	3	
110.	Electric motor 750 rpm, 28 kW	psc	2	
111.	Electric motor 2985 rpm, 4000 kW	psc	1	
112.	Electric motor 2985 rpm, 3800 kW	psc	2	
113.	Electric motor 1500 rpm, 18.51 kW	psc	6	
114.	Electric motor 1500 rpm, 20 kW	psc	2	
115.	Electric motor 375 rpm, 1700 kW	psc	1	
116.	Generator ТГВ-300	psc	3	
117.	Block transformer ТДЦ-400000/330	psc	2	
118.	Transformer for own needs ТРДНС-32000/35	psc	1	
119.	Transformer oil	tons	200	
120.	Oil TP-22s	tons	300	
121.	Feeding electric pump unit ПЕ 600-300	psc	2	
122.	Turbocharger electric pump unit ОСПТ-1150	psc	2	
123.	Turbine oil pump	psc	4	
124.	Emergency turbine oil pump	psc	4	
125.	Increased turbine oil pump	psc	4	

Item No.	Item name and specification	Unit	Quantity	Note
126.	Emergency oil pump, reinforced turbine	psc	2	
127.	Gas cooling pump	psc	4	
128.	Brush ring apparatus,	psc	3	
129.	Turbine section covering	m2	21600	
130.	glazing with corrugated board permanent, temporary ends rows A, Б, B, Г	m2	5300	
131.	Compressor Alup 341 No. 2, No. 3	psc	2	
132.	Electrical protection for hydro units Nos. 5, 6 and the block, current transformers, voltage transformers	psc	1	
133.	"Ovation" control system	psc	1	
134.	Electrical measurement system of hydro units No. 5, No. 6 PECA 300	psc	2	
135.	Power transformer ТРД-90000/110 Block No.5	psc	1	55,5/66 MW
136.	II bus section ТП-110 kV (busbar)	km	2	
137.	Overhead span ГЕС-БРУ-110 kV (Bushing-2)	km	3	
138.	Support structure of II bus section ТП-110 kV	psc	1	
139.	Power transformer ТРД-90000/110 Block No.4	psc	1	74/88 MW
140.	Г-17 – Г-21 generators excitation system power cabinet	Set	5	
141.	Excitation transformers of Resibloc TB-16 – TB-21 type	psc	6	
142.	Auxiliary transformer 10/0,4 kV 630 kVA T- 15-3, Board 15CO	psc	1	
143.	Power transformer ТРД-90000/110 Block No.6	psc	1	44/88 MW
144.	Earthing disconnecter 3ОН-110М-II УХЛ1 Block No. 5	psc	3	
145.	Cells КРУ-6,3 kV Block No.5 (8 cells)	Set	1	
146.	БГ-14, БГ-16 – БГ-23 generator circuit breakers cells	psc	9	
147.	Block No.4 4TH-2	psc	1	
148.	Block No.4/ 3РУ-6,3kV signalization, control cabinets of Г-13 (CAB213)	psc	4	
149.	Block No.5/3РУ-6,3kV/Excitation cabinets, excitation transformers Г-17- Г-20	Set	4	
150.	Block No.4,6/3РУ-6,3kV/Excitation AVR cabinets Г-13-16, 21-24	Set	8	
151.	Block No.5/3РУ-6,3kV/Excitation AVR cabinets Г-17-20(+ T3 temperature control cabinet)	Set	4	
152.	Block No.4/КРУ-6,3kV/4TH-2	psc	1	
153.	Block No.4/ 3РУ-6,3kV/ Hydromechanical protections, control, signalization Г-13-16	psc	4	
154.	Block No.5/ КРУ-6,3kV/БК-18, БК-19, 5TH-3	Set	3	
155.	Block No.5/ 3РУ-6,3kV/ Electrical protection Г-17-20	Set	3	
156.	Block No.5/ 3РУ-6,3kV/ Electrical protection Б5	Set	1	
157.	Block No.5-6/ ТП-110kV, 3РУ-6,3kV / Cable connections	Set	2	
158.	Power transformer ГТ11-12	psc	1	280 MVA
159.	Power transformer ГТ13-14	psc	1	280 MVA
160.	Power transformer ГТ17-18	psc	1	280 MVA
161.	Power transformer Т3	psc	1	6300 kVA
162.	Power transformer Т4	psc	1	6300 kVA
163.	Circuit-breaker EB ГТ 11-12	psc	1	
164.	Surge arrester ГТ 11-12	psc	1	

Item No.	Item name and specification	Unit	Quantity	Note
165.	Surge arrester Л 1	psc	1	
166.	Disconnecter Л1-01	psc	1	
167.	Voltage transformer ТН Л1	psc	1	
168.	Current transformer ГТ11-12	psc	1	
169.	ОРУ-150 kV. Л1 line cell	psc	1	
170.	ОРУ-150 kV. Л2 line cell	psc	1	
171.	Gantry crane Service bridge НБ ДГЭС-2	psc	1	
172.	Service bridge crane runways	psc	1	
173.	Tailrace gate set No.1	psc	1	
174.	Tailrace gate set No.2	psc	1	
175.	Tailrace gate set No.3	psc	1	
176.	Tailrace gate set No.4	psc	1	
177.	Tailrace gate set No.5	psc	1	
178.	Semigantry unit crane ЛБ No.2	psc	1	
179.	Semigantry unit crane ПБ №1	psc	1	
180.	Unit cranes runways	psc	1	
181.	Unit cranes power trolleys	psc	1	
182.	Lifting beam for handling a rotor	psc	1	
183.	Hydraulic turbine with equipment set, № 11	psc	1	122 MW
184.	Hydraulic turbine with equipment set, № 12	psc	1	107 MW
185.	Hydraulic turbine with equipment set, № 13	psc	1	122 MW
186.	Hydraulic turbine with equipment set, № 14	psc	1	
187.	Hydraulic turbine with equipment set, № 15	psc	1	122 MW
188.	Hydraulic turbine with equipment set, № 16	psc	1	122 MW
189.	Hydraulic turbine with equipment set, № 17	psc	1	122 MW
190.	Hydraulic turbine with equipment set, № 18	psc	1	122 MW
191.	Hydro generator with equipment set (protection, excitation system), No. 11	psc	1	140 MVA
192.	Hydro generator with equipment set (protection, excitation system), No. 12	psc	1	130,6 MVA
193.	Hydro generator with equipment set (protection, excitation system), No. 13	psc	1	140 MVA
194.	Hydro generator with equipment set (protection, excitation system), No. 14	psc	1	
195.	Hydro generator with equipment set (protection, excitation system), No. 15	psc	1	140 MVA
196.	Hydro generator with equipment set (protection, excitation system), No. 16	psc	1	140 MVA
197.	Hydro generator with equipment set (protection, excitation system), No. 17	psc	1	140 MVA
198.	Hydro generator with equipment set (protection, excitation system), No. 18	psc	1	140 MVA
199.	Speed governor of HU 11	psc	1	
200.	Speed governor of HU 12	psc	1	
201.	Speed governor of HU 13	psc	1	
202.	Speed governor of HU 14	psc	1	
203.	Speed governor of HU 15	psc	1	

Item No.	Item name and specification	Unit	Quantity	Note
204.	Speed governor of HU 16	psc	1	
205.	Speed governor of HU 17	psc	1	
206.	Speed governor of HU 18	psc	1	
207.	Station-wide, control and protection device	psc	1	
208.	control and protection device I1	psc	1	
209.	control and protection device I2	psc	1	
210.	Commercial accounting of HPP-2	psc	1	
211.	6 kV engineering grid service station	psc	1	
212.	station level controller	psc	1	
213.	RECON recorder I1	psc	1	
214.	RECON recorder I2	psc	1	
215.	System for managing and monitoring station-wide needs	psc	1	
216.	IT 11-12 block monitoring and control system	psc	1	
217.	Current transformer 330kV Gas-insulated Rated voltage - 330 kV Transformation ratio - 2000/1 Accuracy class -0.2S/0.2S/10P/10P/10P/10P	3 phase set	1	SAS-362 Siemens
218.	Current transformer 330kV Rated voltage - 330 kV Transformation ratio - 2000/1 Accuracy class - 0.2S/0.2S/10P/10P/10P/10P	3 phase set	1	SAS-363 Siemens
219.	Current transformer 330kV Rated voltage - 330 kV Transformation ratio - 2000/1 Accuracy class - 0.2S/0.2S/10P/10P/10P/10P	3 phase set	1	SAS-362 Siemens
220.	Circuit breaker 110 kV Rated voltage - 110 kV Rated current - 2000A Current off. Short-circuit current - 50 kA	3 phase set	1	Siemens 3AP1FG145
221.	Current transformer 110kV Rated voltage - 110 kV Transformation ratio - 1000- 2000/5 Accuracy class - 0.2S/0.2S/10P/10P/10P/10P	3 phase set	1	SAS-123 Siemens
222.	Circuit breaker 110 kV Rated voltage - 110 kV Rated current - 2000A Current off. Short-circuit current - 50 kA	3 phase set	1	Siemens 3AP1FG145
223.	Current transformer 110kV Rated voltage - 110 kV Transformation ratio - 1000- 2000/5 Accuracy class - 0.2S/0.2S/10P/10P/10P/10P	3 phase set	1	SAS-123 Siemens
224.	Discharge arrester 110 kV Rated voltage - 110 kV	3 phase set	1	3EL2 108-2PJ31-4TA1-Z Siemens
225.	Regulation transformer 6 kV Type - LTDN - 40000 \6 Rated voltage - 6 kV Rated power - 40 MVA	pcs	1	LTDN - 40000 \6 ZTR
226.	Surge arrester 330kV 3EL-288-3PM42-4NA Rated voltage - 330 kV	3 phase set	1	3EL-288-3PM42-4NA
227.	Voltage transformer 110 kV NKF-110 U1	3 phase set		SVS-123
228.	Circuit breaker 110kV U-110-2000-50-Y1	3 phase set	1	Siemens 3AP1FG145, 50kA
229.	Current transformer 110kV Rated voltage - 110 kV Transformation ratio - 1000-2000/5 Accuracy class - 0.2S/0.2S/10P/10P/10P/10P	3 phase set	1	SAS-123 Siemens
230.	Circuit breaker 150 kV Rated voltage - 150 kV Rated current - 3150A Current off. Short-circuit current - 40 kA	3 phase set	1	LTB-170 D1/B HITACHI-ABB
231.	Circuit breaker 150 kV Rated voltage - 150 kV Rated current - 3150A Current off. Short-circuit current - 40 kA	3 phase set	1	LTB-170 D1/B HITACHI-ABB
232.	Circuit breaker 150 kV Rated voltage - 150 kV Rated current - 3150A Current off. Short-circuit current - 40 kA	3 phase set	1	LTB-170 D1/B HITACHI-ABB

Item No.	Item name and specification	Unit	Quantity	Note
233.	Discharge arrester 150kV Rated voltage - 150 kV	phase	3	3EL3 138-2PM31-4NE1 Siemens
234.	Disconnecter 150 kV, with one earthing switch Rated voltage - 150 kV Rated current - 2000A	3 phase set	1	S2DAT GE (ALSTOM)
235.	Bushing 330 kV 1) GMTP-45-330/1000-u1 (AT-1 f. A) IEEE.686.343.008 2) GMTPA-45- 330/1000-U1 (AT-1 f. B) 2Shchts.800.093.01 3) GKTII-45-330/1000-O1 (AT-1 f. C) IEEE.686353.001	pcs	3	ETft-1175-363-B E9 (art. no. 327921)
236.	Surge arrester 110 kV Rated voltage of the arrester (Ur) - 108 kV Line discharge class - 2	3 phase set	1	3EL2 108-2PJ31-4TA1-Z Siemens
237.	Discharge arresters 110kV Rated voltage of the arrester (Ur) - 108 kV Line discharge class - 2	3 phase set	1	3EL2 108-2PJ31-4TA1-Z Siemens
238.	Bushing 330 kV Type GSB 362\1600\0.66B Rated voltage - 330 kV Rated current -1600A	pcs	1	
239.	Bushing 330 kV Type GMT II - 45-330/1000 U1 Rated voltage - 330 kV Rated current - 1000A	pcs	1	DTOI-363\1000\T600
240.	Bushing 110 kV Type GMTB-90-110/2000 UHL1 Rated voltage - 110 kV Rated current - 2000A	pcs	1	GBRGL-126\2000-2460
241.	Discharge arresters 330kV Type RVMG-330 Rated voltage (Ur) - 330 kV Line discharge class - 2	pcs	3	PEXLIM Q288-YH 362, 3EL2-288-3PM42-4NA1 362, 3EQ1 288-2PP32-4NF1
242.	Disconnecter 330kV, with one earthing switch Type RNDZ-1b-330/3200 Rated voltage - 330 kV Rated current - 3200 (2000) A	3 phase set	1	CBD-E 362-2000
243.	Surge arrester 150kV Type PEXLIM Q 198 XH 245 Rated voltage (Ur) - 245 kV Line discharge class - 2	pcs	3	3EL3 276-4PL52-4XE1
244.	Disconnecter 330kV, with two grounding knives Type RNDZ-2-330-3200 Rated voltage - 330 kV Rated current - 3200 (2000) A	3 phase set	1	CBD-E 362-2000
245.	Surge arrester 330kV Type PEXLIM Q288-YH 362 Rated voltage (Ur) - 362 kV Line discharge class - 2	pcs	3	3EL2-288-3PM42-4NA1 362, 3EQ1 288-2PP32-4NF1
246.	Disconnecter 330kV, with two earthing switches Type S2DAT2T-330\3150 Rated voltage- 330 kV Rated current - 3150 (2000) A	3 phase set	2	CBD-E 362-2000
247.	Circuit breaker 330 kV Type GL-315 Rated voltage - 330 kV Rated current - 3150A Current	3 phase set	1	LTB-420, 3AP2 FI-420
248.	disconnect. Short-circuit current - 50 kA			
249.	Discharge arresters 330kV Type RVMG-330 Rated voltage (Ur) - 362 kV Line discharge class - 2	pcs	3	PEXLIM Q288-YH 362, 3EL2-288-3PM42-4NA1 362, 3EQ1 288-2PP32-4NF1
250.	Discharge arresters 750 kV Type RVMK-750M Rated voltage (Ur) - 750 kV Line discharge class - 2	pcs	6	SB 612/20.5-II, 3EQ3 612-5PU53-4NE1, TEKSLIM T588-AH800ME
251.	Accumulator battery Type SK-10 Battery voltage - 230 V Cell voltage - 2 V Capacity - 360 Ah Service life - not less than 20 years	set	1	
252.	Discharge arrester 330 kV Rated voltage of the surge arrester (Ur) - 288 kV Line discharge class - 2	3 phase set	1	
253.	Discharge arrester 330 kV Rated voltage of the surge arrester (Ur) - 288 kV Line discharge class - 2	3 phase set	1	
254.	Discharge arrester 150 kV Rated voltage of the surge arrester (Ur) - 138 kV Line discharge class - 3	3 phase set	1	
255.	Discharge arrester 330 kV Rated voltage of the arrester (Ur) - 288 kV Line discharge class - 2	3 phase set	1	
256.	Discharge arrester 150 kV Rated voltage of the arrester (Ur) - 108 kV Line discharge class - 2	3 phase set	1	
257.	Circuit breaker 110 kV Rated voltage - 110 kV Rated current - 4000A Current off. Short-circuit current - 40 kA gas-insulated	3 phase set	1	
258.	Current transformer 750 kV Gas-insulated Rated voltage – 330 kV Transformation ratio - 4000-3000- 2000-1500/1 Accuracy class - 0.2S/0.2S/5P/5P/5P/5P	phase	1	
259.	SF6 Circuit Breaker type LTB145D1/B	pcs	1	
260.	Current transformer type IMB 123	pcs	1	
261.	Transformer type TDC 125000/110	pcs	1	
262.	Line + descents type (AC 240)	pcs	1	



Item No.	Item name and specification	Unit	Quantity	Note
263.	Single-pole earthing knife of transformer type ZON-110M-I UHL1	pcs	1	
264.	Conductor type TZMEP-10 (6 KV)	pcs	1	
265.	Measurement and control equipment & automatics (type and quantity to be specified)	pcs	1	
266.	Pipelines of the fire extinguishing system Du-159	pcs	1	
267.	Hydraulic couplings type VOITH 620 SVNL 33G	pcs	1	
268.	Ejectors type EP-3-2A	pcs	1	
269.	SF6 Circuit Breaker type GL-312 F1/4031	pcs	1	
270.	Surge arrester type PEXLIM R108-YV123	pcs	1	
271.	SF6 Circuit Breaker type LTB145D1/B	pcs	1	
272.	Line + descents type (AC 300)	pcs	1	
273.	Conductor type TZMEP-10 (6 KV)	pcs	1	
274.	Pipelines of the fire extinguishing system Du-159	pcs	1	
275.	Ejectors type EP-3-2A	pcs	1	
276.	Hydraulic coupling type VOITH 620 SVNL 33G	pcs	1	
277.	Electric drives Exlar GSX30-06-02-MFA-MN1-238-AR-L2-XM-47985	pcs	1	
278.	Pipeline of network water with a diameter of 1200 mm and tees	pcs	1	
279.	Gate valves DN800 type 30s927nzh	pcs	1	
280.	Pumping units type 500D-22; D1600-30	pcs	1	
281.	Cable products (type and quantity to be specified)	pcs	1	
282.	Descent from the disconnecter (AC 240)	pcs	1	
283.	Conductor type TZMEP-10 (6 KV)	pcs	1	
284.	Auxiliary transformer 35 MVA	pcs	5	
285.	Equipment to recover power unit #9	pcs	1	
286.	Power unit transformer 200 MVA / 220 kV	pcs	1	
287.	Equipment to recover power unit #8	pcs	1	
288.	Auxiliary transformer 32 MVA / 20 kV / 6,3 kV	pcs	1	
289.	Start-up and backup transformer 32 MVA / 150 kV / 6,3 kV / 6,3 kV	pcs	1	
290.	Excitation transformer 20 kV / 1 kV	pcs	1	
291.	Auxiliary transformer 40 MVA	pcs	1	
292.	ERW steel pipe (DN250-1000)	m	750	
293.	Polyethylene pipes for combustible gas distribution PE 100 SDR-17.6	m	520	
294.	Flanged ball valve, full bore 11c336n PN16 with reducer	pcs	24	
295.	Ball valve DN 350-1000 PN 25 (flanged)	pcs	48	
296.	Flanged welded ball valve, full bore 11c337n DN250-300 PN25 with reducer	pcs	24	
297.	Ball valve DN 400-600 PN 25	pcs	28	
298.	Welded ball valve with installation above ground level DN 700	pcs	6	
299.	Propane freeze-out unit Q=100-6000 tcm/day	pcs	8	

Item No.	Item name and specification	Unit	Quantity	Note
300.	Gas piston compressor with gas piston drive, Qg = 58-540 tcm/day	pcs	10	
301.	Gas piston compressor with piston engine drive	pcs	5	
302.	Gas turbine drive with centrifugal compressor	pcs	6	
303.	Disconnecter 110 kV PД3-1-110/1000	pcs	7	
304.	Disconnecter 110 kV PД3-2-110/1000	pcs	9	
305.	Vacuum circuit breaker BP35HC outdoor installation, electromagnetically operated, with locking in the working position. Remote control	pcs	11	
306.	Vacuum circuit breaker 6-10 kV BP1	pcs	50	
307.	Core switch BPSC-110	pcs	7	
308.	Pump type CE 1250-140-11 with electric motor, skid-mounted	pcs	7	
309.	Network pump CE 800/100	set	1	
310.	Network pump CE 1250/140	set	3	
311.	Water treatment system for heat supply system in modular design, system capacity: 100 cubic metrs/hour	system	1	
312.	ABB Gas circuit breaker type LTB 170D1/B or GE GL313 F1/4031P	set	6	
313.	Disconnecter 154 kV type PД3-2-150/1000 Y1, with drive	set	14	
314.	Current transformer IBM (170 kV) or series ТФ3М-170-І Y1, 600/5	set	6	
315.	Voltage transformer EMF (154 kV)	set	2	
316.	Surge arrester PEXLIM Q144-XH170	set	3	
317.	Power transformer 500 kVa, 6300/23V, Connection scheme wye-wye-5 and Wye-delta-100	unit	1	
318.	Network pump Д-1250-125 1250tph, Head 125m 1480R/min, 630 kW Voltage 6000V	unit	1	
319.	Pressure regulator ITRON 3000 m3/h, Inlet pressure 0.6 bar, Outlet pressure 0.25 bar, Number of reduction lines-2	unit	1	
320.	Power transformer TPДHC-32000/35 Y1	pcs	1	
321.	Lube oil cooler МП-21	pcs	4	
322.	Wilo Atmos GIGA-N 40/160-4/2 pump set	pcs	1	
323.	Wilo Atmos GIGA-N 50/200-11/2 pump set	pcs	2	
324.	Wilo SCP-200-360-HB stainless pump set	pcs	1	
325.	Wilo Atmos GIGA-B 125/305-37/4 pump set	pcs	2	
326.	Wilo Atmos GIGA-B 80/170-30/2 pump set	pcs	1	
327.	Wilo Atmos GIGA-B 65/215-22/2 pump set	pcs	2	
328.	Pumping group: Yonos GIGA-N 50/200-18, 5/2-R1 pump – 3 pcs with control device	pcs	1	
329.	Wilo SCP 200/460HA-160/4-FC pump set	pcs	1	
330.	Wilo FA10.65E pump (with FK202H-4/22 drive, EMU pump horizontal installation)	pcs	4	
331.	Wilo Atmos GIGA-N 80/200-30/2 pump set	pcs	3	
332.	Wilo SCP 250/700DV-630/4/6kV-R1/E1-FC pump set with 6000 V frequence converter	pcs	2	
333.	Above-ground ball valve DN100 PN150 (ANSI 900) with pneumatic actuator	pcs	58	
334.	Fountain-type fitting	pcs	6	
335.	Casing Head Assembly	pcs	6	

Item No.	Item name and specification	Unit	Quantity	Note
336.	Gate valve 2 9/16" (65 mm) 3000 psi (21Mpa)	pcs	50	
337.	Gate valve 4 1/16" (100 mm) 3000 psi (21Mpa)	pcs	50	
338.	Manual ram blow-out preventer 7 1/16" x 3000 PSI	pcs	3	
339.	High performance motor pump (60 l/s) with discharge hose L=300m.	pcs	2	
340.	Portable Petrol Welding Generator (200A)	pcs	2	
341.	Special off-road vehicle with a high-pressure pump	pcs	2	
342.	All-terrain steamer truck	pcs	1	
343.	All-terrain tank truck (volume 10-12 m3)	pcs	2	
344.	Lifting unit well workover with a lifting capacity of 60-80 tons	pcs	2	
345.	Cementing unit for repairing wells	pcs	3	
346.	Gas turbine gas pumping unit of 25-32 MW	pcs	2	
347.	Block transformer 250 MVA 220 kV/15.75 kV	pcs	2	
348.	Block transformer 250 MVA 220 kV/15.75 kV	pcs	1	
349.	Autotransformer 210MVA / 400kV / 330kV / Yauto/d-11	pcs	3	
350.	Autotransformer 240MVA / 330kV / 220kV / Yauto/d-11	pcs	1	
351.	Autotransformer 133MVA / 400kV / 220kV / Yauto/d-11	pcs	1	
352.	Generator thyristor system Software and hardware complex, turbine control system, thyristor excitation system of ARV-SD-21 generator	pcs	2	
353.	Block transformer 400 MVA / 150 kV	pcs	1	
354.	Autotransformer 400 MVA, 330/150 kV, Yauto/d-11 winding connection	pcs	4	
355.	Block transformer 250 MVA /154 kV / 18 kV / Yo / Δ-11	pcs	1	
356.	Gas-insulated circuit breaker type - LTB145D1/B, or equivalent.	pcs	1	
357.	Gas-insulated circuit breaker current transformer f "A" type IMB 123.	pcs	1	
358.	Transformer type TDC 125000/110	pcs	1	
359.	Line 1GT + slopes	pcs	1	
360.	Auxiliaries transformer current duct 21T	pcs	1	
361.	Turbine generator type – TVF- 120-2-U3.	pcs	1	
362.	Thyristor excitation system of the turbine generator type SVTG-3.85/375-1KS2T2.5- AR24-UHL4	pcs	1	
363.	A set of electrical protection and automation panels based on PM RPA "Diamant"	pcs	1	
364.	Line 2GT + slopes	pcs	1	
365.	Auxiliary transformer current duct 22T output 10.5 kV f "A"	pcs	1	
366.	Gas-insulated circuit breaker of transformer 20T-2T	pcs	1	
367.	Gas-insulated circuit breaker current transformers 20T-2T f "A", "V", "S" type TFZM	pcs	1	
368.	Descent from the disconnecter P10T f "A"	pcs	1	
369.	Transformer conductor 10T	pcs	1	
370.	Mains water pipeline with a diameter of 1200mm, and tees.	pcs	1	
371.	Cable products (type and quantity to be specified)	pcs	1	

Item No.	Item name and specification	Unit	Quantity	Note
372.	Power transformer 280MVA	pcs	4	
373.	Power transformer 6300 kVA	pcs	2	
374.	Circuit breaker EV GT 11-12, 13-14, 15-16, 17-18	pcs	4	
375.	Control and monitoring system of the GT 15-16 unit	pcs	2	
376.	Surge arrester GT 11-12, 13-14, 15-16, 17-18	pcs	4	
377.	Surge suppressor L-1, L-2	pcs	2	
378.	Disconnecter L1-01	pcs	1	
379.	Disconnecter L1-02	pcs	1	
380.	Disconnecter L2-01	pcs	1	
381.	Disconnecter L2-02	pcs	1	
382.	Voltage transformer TN L1, TN L2	pcs	2	
383.	Current transformer GT 11-12, 13-14, 15-16, 17-18	pcs	4	
384.	150 kV outdoor switchgear. L1 and L2 line cell	pcs	2	
385.	Gantry crane Service bridge NB DHES-2	pcs	1	
386.	Crane runways of the service bridge crane	pcs	1	
387.	Downstream shutter set No. 1, 2, 3, 4, 5	pcs	5	
388.	Semi-gantry aggregate crane LB No. 1,2	pcs	2	
389.	Crane runways of aggregate cranes	pcs	1	
390.	Trolleys for power supply of aggregate cranes	pcs	1	
391.	Traverse for lifting the rotor	pcs	1	
392.	Hydraulic turbine with a set of equipment, No 11, 12, 13, 14, 15, 16, 17, 18	pcs	8	
393.	Hydrogenerator with a set of equipment (protection, excitation system), No 11, 12, 13, 14, 15, 16, 17, 18	pcs	8	
394.	DC switchboard with VU1, VU2, VU3	pcs	1	
395.	Speed controller GA 11, 12, 13, 14, 15, 16, 17, 18	pcs	8	
396.	Station-wide, control and protection device	pcs	1	
397.	Control and protection device L1, L2	pcs	2	
398.	Commercial accounting of HPP- 2	pcs	1	
399.	6 kV network maintenance station	pcs	1	
400.	Station Level Controller	pcs	1	
401.	Registrar RECON L1, L2	pcs	2	
402.	Plant-wide needs management and monitoring system	pcs	1	
403.	Control and monitoring system of the GT 11-12, 13-14 unit	pcs	2	
404.	Operator panels Panel Mount PC, 19 INCH Display, Windows 10 IoT Ent 2019 LTSC x64.	pcs	6	
405.	Operating Station DROP250 DELL OptiPlex XE3 Dual Monitors Windows 10 LTSC + Dell Pro Stereo Soundbar AE515M	pcs	3	
406.	Current Transformer Voltage: 172 kV Transformation coefficient: 2000/5 Number of secondary windings: 6 (0.2S; 0.2S; 0.5; 3P; 3P)	pcs	3	
407.	Voltage Transformer Voltage: 172 kV Transformation coefficient: 154000/√3/100/√3/100/√3/100 Number of secondary windings: 4 (0.2S; 0.2S; 3P; 3P)	pcs	3	

Item No.	Item name and specification	Unit	Quantity	Note
408.	OMICRON CMC356 Measuring Kit 6 x 32 A / 430 BA 3 x 64 A / 860 BA 1 x 128 A / 1000 BA 4 x 300 B	pcs	1	
409.	OMICRON CMC353 Measuring Kit 3 x 32 A / 430 BA 1 x 64 A / 860 BA 4 x 300 B	pcs	1	
410.	OMICRON CMControl P Control Panel	pcs	2	
411.	Operator Panels DROP250 DELL OptiPlex XEC Dual Monitors Windows 10 LTSC + Dell Pro Stereo Soundbar AE515M	pcs	3	
412.	Power supply SYS BRAVO ALC 230VAC CE 220VDC EPC 01M 045 FIX STD 19600MM T2S ETN complete with one 2.5 kVA inder module BRAVO tsi-EPC-220VDC-230VAC	pcs	4	
413.	SYS BRAVO 2.5kVA Manual Bypass	pcs	4	
414.	Clamp SAS 300-1B	pcs	100	
415.	Split clamp ROA-300-1	pcs	100	
416.	Clamp US-300-1	pcs	100	
417.	Insulator LKC 120/150-3	pcs	100	
418.	ACSR 300 wire Wire ASO-300 (ACSR-300) Aluminum-steel wire uninsulated for overhead power lines	km	0,81	
419.	Submersible pump SULZER Pumps: Parameters Q=648 m3/h. H=23.3 m; Cable length not less than 25 m	pcs	4	
420.	Float switch with clamp, weight and wire 30 m long	pcs	3	
421.	Hose (hose) pressure-suction D_inside = 152 mm; Py=2,5 bar	km	0,2	
422.	Centrifugal artesian pumping unit type A24A-18x1-10-U2	pcs	4	
423.	Generator TGV-200, pcs	pcs	4	
424.	Generator TGV-200M, pcs	pcs	1	
425.	Electric motor 1500 rpm, 200 kW	pcs	2	
426.	Electric motor 1500 rpm, 100 kW	pcs	2	
427.	Electric motor 1500 rpm, 21 kW	pcs	2	
428.	Electric motor 1500 rpm, 11 kW	pcs	3	
429.	Electric motor 750 rpm, 28 kW	pcs	2	
430.	Electric motor 2985 rpm, 4000 kW	pcs	1	
431.	Electric motor 2985 rpm, 3800 kW	pcs	2	
432.	Electric motor 1500 rpm, 18.51 kW	pcs	6	
433.	Electric motor 1500 rpm, 20 kW	pcs	2	
434.	Electric motor 375 rpm, 1700 kW	pcs	1	
435.	Overhead crane	pcs	2	
436.	Autotransformer ATDTSTN- 125000/330/110-77U1 330 kV	pcs	1	
437.	Transformer bushing 110 kV	pcs	3	
438.	Transformer oil Shell Diala S4 ZX-1	tons	200	
439.	Autotransformer Three-phase power - 200 MVA, voltage HV/SN/LV - 330/110/6 kV	pcs	2	
440.	Autotransformer Three-phase power - 200 MVA voltage HV/SN/LV - 330/110/35 kV	pcs	1	
441.	Autotransformer 330 kV Three-phase power - 125,000 kVA, voltage HV/SN/HV - 330/110/10 kV	pcs	1	
442.	Autotransformer 330kV Type ATDTN- 200000\330\110\10, three-phase, power - 200,000 kVA Voltage HV/SN/LV - 330/110/10 kV	kit	2	
443.	Autotransformer 330kV Type ATDTSTN- 250000\330\110\35, Three-phase, power - 250,000 kVA Voltage HV/SN/HV -	kit	1	

Item No.	Item name and specification	Unit	Quantity	Note
	330/150/35 kV			
444.	Autotransformer 750 kV Single-phase Rated power - 333000 kVA Voltages HV/SN/HV - 750/330/15.75 kV	phase	1	
445.	Rechargeable battery Type SK-10 Battery voltage - 230 V Cell voltage - 2 V Capacity - 360 Ah Service life - at least 20 years	kit	1	
446.	High-voltage bushing 330 kV 1) GMTP-45-330/1000-U1 (AT-1 f. A) IVEI.686.343.008 2) GMTPA-45-330/1000-U1 (AT-1 f. V) 2SHCHC.800.093.01 3) GKTII-45-330/1000-O1 (AT-1 f. S) IVEI.686353.001	pcs	3	
447.	High-voltage bushing 110 kV Bushing 110 kV 800A type BRIT R-110-550\800 No. KN 1.9.005-RY Rated voltage - 110 kV Rated current - 800A	pcs	2	
448.	High-voltage bushing 110 kV GMTB-90-110/2000 UHL1 Type Rated voltage - 110 kV Rated current - 2000A	pcs	1	
449.	High-voltage bushing 330 kV Type GSB 362\1600\0.66B Rated voltage - 330 kV Rated current - 1600A	pcs	1	
450.	High-voltage bushing 330 kV Type GMT II - 45-330/1000 U1 Rated voltage - 330 kV Rated current - 1000A	pcs	1	
451.	110 kV circuit breaker Rated voltage - 110 kV Rated current - 2000A Current off. Short circuit - 50 kA	3 Phase Kit	3	
452.	110 kV circuit breaker Rated voltage - 110 kV Rated current - 4000A Current off. Short circuit - 40 kA gas-insulated	3 Phase Set	1	
453.	110kV circuit breaker U-110-2000-50-U1	3 Phase Kit	1	
454.	150 kV circuit breaker Rated voltage - 150 kV Rated current - 3150A Current off. Short circuit - 40 kA	3 Phase Kit	3	
455.	330 kV circuit breaker Type GL-315 Rated voltage - 330 kV Rated current - 3150A Current off. Short circuit - 50 kA	Kit (3 phases)	1	
456.	750 kV circuit breaker Type LTB-800E-4000-40 Rated voltage - 750 kV Rated current - 4000A Current off. Short circuit - 40 kA	Kit (3 phases)	2	
457.	750 kV circuit breaker Rated voltage - 750 kV Rated current - 4000A Current off. Short circuit - 40 kA gas- insulated	Kit	1	
458.	Surge arrester 150kV Type PEXLIM Q 198 XH 245 Rated voltage (Ur) - 245 kV Line discharge class - 2	pcs	3	
459.	Surge arrester 330kV Type PEXLIM Q288-YH 362 Rated voltage (Ur) - 362 kV Line discharge class - 2	pcs	3	
460.	Surge arrester 3EQ3-612 Rated voltage of surge arrester (Ur) - 612 kV Line discharge class - 2	3 Phase Set	1	
461.	110 kV surge arrester Rated voltage of surge arrester (Ur) - 108 kV Line discharge class - 2	3 Phase Kit	1	
462.	330 kV surge arrester 3EL-288-3PM42-4NA Rated voltage - 330 kV	3 Phase Kit	1	
463.	Valve arrester RVMG-330 Rated voltage - 330 kV	3 Phase Kit	1	
464.	Arrester RVS-110 Rated voltage - 110 kV	3 Phase Kit	1	
465.	Control transformer 35 kV Three-phase power - 40,000 kVA HV/LV voltage - 11/11±10x1.5% kV	pcs	1	
466.	150 kV disconnecter with one earthing knife Rated voltage - 150 kV Rated current - 2000A	3 Phase Kit	1	
467.	Disconnecter 330 kV, with two earthing knives Type RNDZ-2-330-3200 Rated voltage - 330 kV Rated current - 3200 (2000)A	3 Phase Kit	1	
468.	Disconnecter 330 kV, with two earthing knives Type S2DAT2T-330\3150 Rated voltage - 330 kV Rated current - 3150 (2000)A	3 Phase Kit	2	
469.	Disconnecter 330 kV, with one earthing knife Type RNDZ-1B-330/3200 Rated voltage - 330 kV Rated current - 3200 (2000)A	3 Phase Kit	1	
470.	Disconnecter 750 kV RPG-1- 750/3150 Unom - 750 kV Other - 3150A with one grounding knife	3 Phase Set	1	
471.	150 kV arrester Rated voltage of surge arrester (Ur) - 138 kV Line discharge class - 3	3 Phase Set	1	
472.	150 kV arrester Rated voltage of surge arrester (Ur) - 108 kV Line discharge class - 2	3 Phase Set	1	
473.	Arrester 150kV Rated voltage - 150 kV	phase	3	
474.	Arrester 330 kV Rated voltage of surge arrester (Ur) - 288 kV Line discharge class - 2	3 Phase Set	3	
475.	110 kV arresters Rated voltage of surge arrester (Ur) - 108 kV Line discharge class - 2	3 Phase Kit	1	
476.	Arresters 330 kV Type RVMG-330 Rated voltage (Ur) - 330 kV Line discharge class - 2	pcs	6	

Item No.	Item name and specification	Unit	Quantity	Note
477.	750kV arresters Type RVMK-750M Rated voltage (Ur) - 750 kV Line discharge class - 2	pcs	6	
478.	Voltage transformer 110kV Rated voltage - 110 kV	phase	3	
479.	Voltage transformer 150kV Rated voltage - 150 kV	phase	3	
480.	Voltage transformer 330 kV Type TEMP-362 Gas-insulated	pcs	3	
481.	Voltage transformer 330kV Rated voltage - 330 kV	phase	6	
482.	Voltage transformer 750 kV Type NDE-750-72U1 Gas-insulated	pcs	6	
483.	Current transformer 110kV Rated voltage - 110 kV Transformation factor - 1000- 2000/5 Accuracy class - 0.2S/0.2S/10P/10R/10P/10P	3 Phase Kit	4	
484.	150 kV Current Transformer Gas-insulated Rated voltage - 150 kV Transformation factor - 1200/5 Accuracy class - 0.2S/10P/10R/10P	phase	3	
485.	Current transformer 330kV Rated voltage - 330 kV Transformation coefficient - 2000/1 Accuracy class - 0.2S/0.2S/10P/10P/10P/10P	3 Phase Kit	2	
486.	Current transformer 750 kV Gas-insulated Rated voltage - 330 kV Transformation factor - 4000-3000-2000-1500/1 Accuracy class - 0.2S/0.2S/5P/5P/5P/5P	phase	2	
487.	Voltage Transformer NKF-110 U1	pcs	3	
488.	Regulation Transformer Type - LTDN - 40000 \6 Rated voltage - 6 kV Rated power - 40 MVA	pcs	1	